





Library  
of  
Phillips Academy

Accession No.

9453

Shelf No.

76



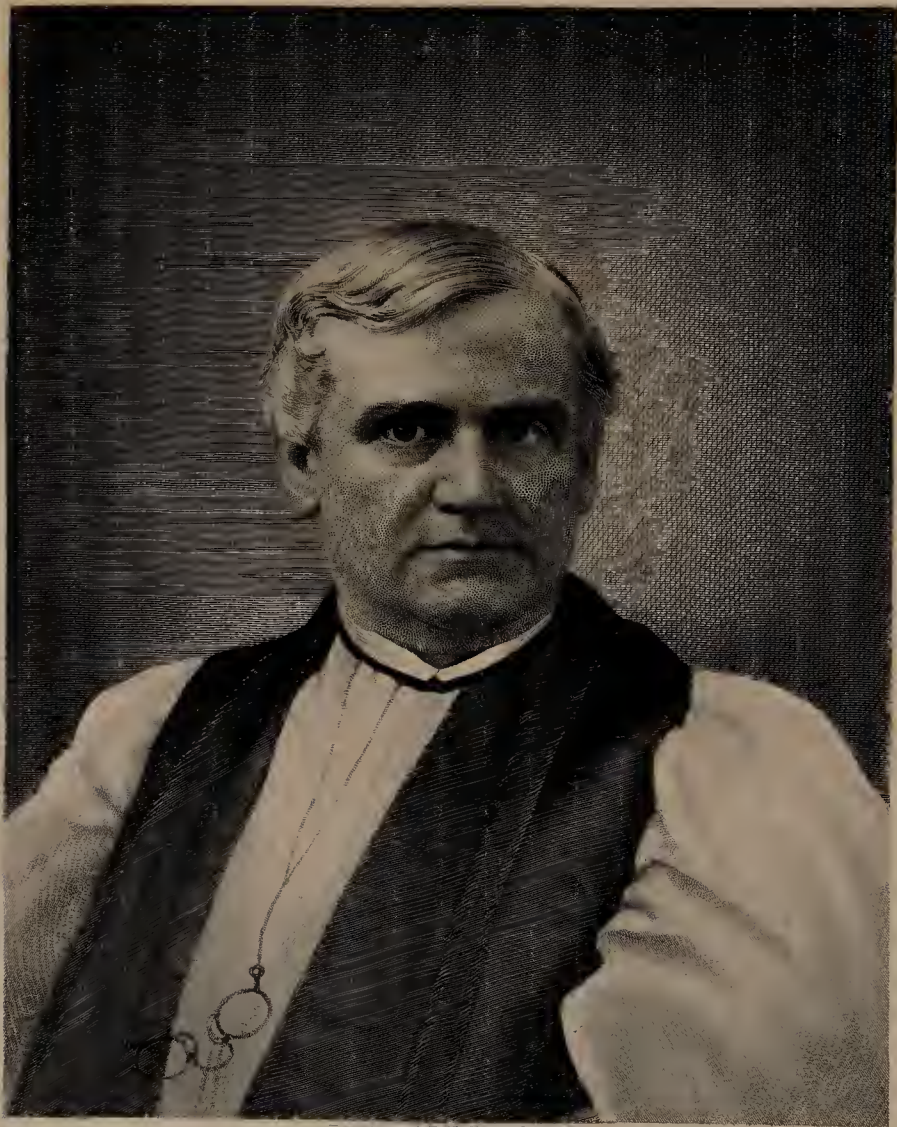












Engr. by A. B. Hall, New York

*Phillips Brook*

APPLETONS'

ANNUAL CYCLOPÆDIA

AND

REGISTER OF IMPORTANT EVENTS

OF THE YEAR

1893.

EMBRACING POLITICAL, MILITARY, AND ECCLESIASTICAL AFFAIRS; PUBLIC DOCUMENTS; BIOGRAPHY, STATISTICS, COMMERCE, FINANCE, LITERATURE, SCIENCE, AGRICULTURE, AND MECHANICAL INDUSTRY.

NEW SERIES, VOL. XVIII.

*WITH AN INDEX TO THE SERIES.*

WHOLE SERIES, VOL. XXXIII.

NEW YORK:  
D. APPLETON AND COMPANY,  
1, 3, AND 5 BOND STREET.  
1894.

COPYRIGHT, 1894,  
BY D. APPLETON AND COMPANY.

R  
031  
Ap5  
v. 33  
(mis. v. 18)



## P R E F A C E .

---

THE year 1893, a history of which is presented in this volume, was chiefly memorable in the United States for the wonderful exposition at Chicago, by far the finest world's fair that has ever been held since Prince Albert invented world's fairs in 1851. Our volumes for 1891 and 1892 contained current and partial accounts, which are supplemented in this volume by the closing article of the series, which is chiefly devoted to the results of the exposition, and, like the others, is freely illustrated. Another incident of the year, sadly memorable, was the financial panic. This suggests the general subject, and the veteran financial writer, James P. Carey, has furnished an account of all the panics in the United States during the present century, explaining their causes, and sketching their course and extent. On our western border, the two topics of interest were Hawaii and the Bering Sea controversy. Both of these are treated fully and illustrated, the latter with a colored map. With the new administration of President Cleveland came in a new Cabinet, and a brief sketch of each member of it, with a portrait, will be found in the article on the United States.

Beyond our own country, the most exciting incidents were those of the revolt in Brazil, the story of which is told in the article on that country, and we give also a new colored map of Brazil.

The Canadian articles this year are unusually full, and that on the Dominion of Canada is illustrated with a portrait of the new Governor-General, the Earl of Aberdeen.

Among the special articles, that on the Ramie plant, which is rapidly coming into use as a substitute for cotton in the production of textile fabrics, is unusually interesting. Another is on the extent and condition of the "Tin-Plate Industry in the United States." Another is on "Precious Stones," by a gem expert. Another is on "Yachting," with diagrams showing the varied forms of yacht that have been devised in the endeavor to attain the greatest possible speed. Another describes the game of "Golf." Another deals with the "Progress of Library Economy," a rapidly growing subject, by the Superintendent of the Free Circulating Libraries of New York. Another explains the "Rule of the Road." Another sketches rapidly the recent growth in the science of "Surgery and Medicine." Another deals with the curious subject of "Telepathy." And perhaps the most interesting of all is that entitled "Gifts and Bequests," which records all such of the value of five thousand dollars or more that were made or became operative in the United States in 1893. It is the

intention to continue this regularly hereafter. The article on the "Recent Growth of American Cities" describes thirty-six. The special religious articles include "Labor Church," "Parliament of Religions," "Sunday Rest," "Theosophy," and one on the "Reorganized Church of Jesus Christ of Latter-Day Saints," which is the nonpolygamous branch of the Mormons. This last is written by a presiding elder, and is illustrated with a portrait of Joseph Smith, the head of the Church. The new Temple in Salt Lake City was finished in 1893, and a description of it will be found in the article "Utah," with two illustrations, showing both the present costly Temple and the humble one that was erected in Kirtland, Ohio, half a century ago.

The death roll of 1893 includes many eminent men. Among them are James G. Blaine, Edwin Booth, Phillips Brooks, Gounod, the composer, Rutherford B. Hayes, Carter Harrison, Marshal MacMahon, Francis Parkman, and John Tyndall; while those of lesser note include the artists J. H. Beard, F. M. Brown, Buttre, Casilear, Vicat Cole, Dodge, Gould, Pettie, and Wellstood; the authors Bynner, Dwight, C. C. Jones, Knatchbull-Hugessen (Lord Brabourne), Lucy Larcom, Lübke, Maupassant, Merivale, Symonds, Taine, Towle, and Zorilla; the clergymen Deems, Giles, Kip, and Thwing; the inventors Berdan, Densmore, Francis, and Harvey; the jurists Billings, Blatchford, Bond, Comegys, Frazer, Lamar, Larremore, and Macomber; the scholars Jowett, Nettleship, and Schaff; the scientists Bartlett, Genth, Goebel, Hosford, Lupton, and Seaton; the soldiers Beauregard, Carroll, Corse, Crittenden, Doubleday, Ingalls, Miribel, Kirby Smith, and Townsend; the naval officers Bridge, Jenkins, Queen, and Melancton Smith; the statesmen Earl of Derby, Jules Ferry, Hamilton Fish, Galt, Saulsbury, and Schmerling; the actress and author Fanny Kemble; the pioneer William T. Coleman; Margaret Fox Kane; and the reformers Abby Hopper Gibbons, Sallie Holley, and Lucy Stone Blackwell. Of all these and numerous others the reader will find sketches in this volume, many being illustrated with portraits, and in these lives is briefly told a large part of the story of the generation that is now passing away.

To get an idea of the growth of our own country in the past year, the reader should look first at the article "United States," then at the one on the national finances, then at "Commerce and Navigation," then at the "Financial Review," then at the articles on the States and Territories, then at those under "Cities, Growth of," and finally at those on the religious denominations.

The illustrations, as usual, include three portraits on steel, the subjects this year being the clergyman Phillips Brooks, the actor Edwin Booth, and the scientist John Tyndall. The colored plates are four views at the World's Fair and two maps (Bering Sea and Brazil), engraved especially for this volume. The engravings in the text number nearly a hundred and include many fine vignette portraits.

The volume closes with an index to the entire series, which enables the reader to find the record of almost any important occurrence of the past eighteen years.

NEW YORK, *April 13, 1894.*

## CONTRIBUTORS.

---

*Among the Contributors to this Volume of the "Annual Cyclopædia" are the following :*

- Oscar Fay Adams,**  
Author of "Life of Jane Austen."  
BROADWOOD, HENRY F.
- George N. Babbitt,**  
NEW BRUNSWICK.
- B. M. Barrington,**  
Of Florida Citizen.  
FLORIDA.
- Marcus Benjamin, Ph. D.**  
ASSOCIATIONS FOR ADVANCEMENT OF SCIENCE,  
NEW YORK STATE,  
NEW YORK CITY,  
TYNDALL, JOHN,  
WORLD'S COLUMBIAN EXPOSITION,  
and other articles.
- J. H. A. Bone,**  
OHIO.
- Arthur E. Bostwick, Ph. D.**  
PHYSICS.
- T. J. Briggs, M. D.**  
SURGERY AND MEDICINE, RECENT ADVANCES IN.
- Rev. Arthur Brooks, D. D.**  
BROOKS, PHILLIPS.
- John Cain,**  
WASHINGTON (STATE).
- James P. Carey,**  
Formerly Financial Editor of Journal of Commerce.  
FINANCIAL REVIEW OF 1893,  
PANICS, FINANCIAL, OF THE NINETEENTH CENTURY.
- John Denison Champlin,**  
Editor of "Cyclopedia of Painters and Paintings."  
FINE ARTS IN 1892-'93.
- Hon. Benjamin F. Clayton.**  
FARMERS' CONGRESS.
- Miss Ellen M. Coe,**  
Superintendent of New York Free Libraries.  
LIBRARY ECONOMY, PROGRESS OF.
- Mrs. Bessie Nicholls Croffut.**  
LITERATURE, AMERICAN,  
LITERATURE, BRITISH,  
and articles in "Cities, American."
- C. W. Edgerton.**  
EDGERTON, JOSEPH K.
- Frederik A. Fernald,**  
Of Popular Science Monthly staff.  
TELEPATHY.
- George T. Ferris.**  
LI-HUNG-CHANG (IN CHINA),  
TORPEDOES.
- Austin E. Ford,**  
Editor of Freeman's Journal.  
ROMAN CATHOLIC CHURCH.
- Mrs. Fredericka B. Gilchrist.**  
NEW JERSEY,  
NEW MEXICO.  
PROTESTANT EPISCOPAL CHURCH,  
WISCONSIN,  
WYOMING,  
and other articles.
- Rev. William E. Griffiths, D. D.,**  
Author of "The Mikado's Empire."  
JAPAN.
- George J. Hagar,**  
Of New Jersey Historical Society.  
GIFTS AND BEQUESTS,  
OBITUARIES, AMERICAN.
- Rev. Moses Harvey,**  
Author of "Text-Book of Newfoundland History."  
NEWFOUNDLAND.
- Frank Huntington.**  
ABYSSINIA,  
ARGENTINE REPUBLIC,  
BELGIUM,  
BERING-SEA ARBITRATION,  
BRAZIL,  
CAPE COLONY,  
CHINA,  
CUBA,  
EAST AFRICA,  
FRANCE,  
GREECE,  
HAWAII,  
MACMAHON. COMTE DE,  
PERSIA,  
RUSSIA,  
TURKEY.  
and other articles.



**Abram S. Isaacs, Ph. D.,**

Editor of Jewish Messenger.  
JEWS.

**Mrs. Helen Kendrick Johnson.**

BLACKWELL, LUCY STONE,  
BLAINE, JAMES G.,  
HAYES, RUTHERFORD B.,  
PARKMAN, FRANCIS.

**Henry E. Krehbiel,**

Musical Critic of New York Tribune.  
GOUNOD, CHARLES FRANÇOIS.

**George F. Kunz,**

Author of "Gems and Precious Stones."  
PRECIOUS STONES.

**Walter Learned.**

COLLIER, THOMAS STEPHENS.

**William H. Larrabee.**

Of Popular Science Monthly staff.  
BAPTISTS,  
CHRISTIAN ENDEAVOR SOCIETIES,  
FRIENDS,  
LABOR CHURCH,  
METHODISTS,  
PARLIAMENT OF RELIGIONS,  
PRESBYTERIANS,  
SABBATH UNION,  
UNITED BRETHREN,  
and other articles.

**Neil Macdonald.**

BRITISH COLUMBIA,  
DOMINION OF CANADA,  
MANITOBA.  
and other Canadian articles.

**John Malone,**

Formerly of Edwin Booth's Company.  
BOOTH, EDWIN THOMAS.

**Frederic G. Mather.**

STANFORD UNIVERSITY,  
TIN-PLATE INDUSTRY,  
and other articles.

**Col. Charles L. Norton,**

Author of "Political Americanisms."  
ENGINEERING,  
GOLF,  
YACHTING,  
and other articles.

**Rev. Solomon E. Ochsenford.**

LUTHERANS.

**Mrs. Evangeline M. O'Connor.**

GEOGRAPHICAL PROGRESS,  
GEORGIA,  
IOWA,  
MAINE,  
MINNESOTA,  
NEW HAMPSHIRE,  
PENNSYLVANIA,  
SOUTH CAROLINA,  
UTAH,  
and other articles.

**Mrs. Mary J. Reid.**

ALAMEDA.

**Charles L. Rhodes,**

Of Chicago Times.  
HARRISON, CARTER HENRY.

**Rev. Frank M. Sheehy,**

Presiding Elder of Massachusetts District.  
REORGANIZED CHURCH OF JESUS CHRIST OF  
LATTER-DAY SAINTS.

**Helen Ainslie Smith,**

Author of "Wonderful Cities of the World."  
RAMIE, CULTIVATION AND MANUFACTURE OF,  
and other articles.

**William Christopher Smith.**

ALABAMA,  
CALIFORNIA,  
ILLINOIS,  
KANSAS,  
MASSACHUSETTS,  
MISSISSIPPI,  
NEBRASKA,  
NORTH CAROLINA,  
OKLAHOMA,  
RHODE ISLAND,  
SOUTH DAKOTA,  
TEXAS,  
VERMONT,  
WEST VIRGINIA,  
and other articles.

**Lewis Swift, LL. D.,**

Director of Warner Observatory.  
ASTRONOMY, PROGRESS OF, IN 1893.

**J. Kendrick Upton,**

Of United States Census Office.  
UNITED STATES, FINANCES OF THE.

**Arthur Dudley Vinton,**

Author of "The Unpardonable Sin."  
RULE OF THE ROAD.

**Frank Weitenkamp,**

Of the Astor Library.  
LITERATURE, CONTINENTAL.

**William J. Youmans, M. D.,**

Editor of Popular Science Monthly.  
CHEMISTRY,  
METALLURGY,  
PHYSIOLOGY.

# ILLUSTRATIONS.

## PORTRAITS ON STEEL.

	ARTIST.	PAGE
PHILLIPS BROOKS . . . . .	<i>H. B. Hall</i>	<i>Frontispiece</i>
EDWIN BOOTH . . . . .	<i>H. B. Hall</i>	96
JOHN TYNDALL . . . . .	<i>H. B. Hall</i>	727

## PORTRAITS IN THE TEXT.

DRAWN BY JACQUES REICH.

	PAGE		PAGE
EARL OF ABERDEEN . . . . .	263	FRANCES ANNE KEMBLE . . . . .	581
W. H. C. BARTLETT. . . . .	539	WILLIAM I. KIP . . . . .	558
P. G. T. BEAUREGARD . . . . .	540	L. Q. C. LAMAR . . . . .	559
WILSON S. BISSELL . . . . .	736	DANIEL S. LAMONT . . . . .	735
JAMES G. BLAINE . . . . .	86	LUCY LARCOM . . . . .	560
CHARLES A. BRIGGS . . . . .	649	COMTE DE MACMAHON . . . . .	469
JOHN S. BURDON-SANDERSON . . . . .	31	GUY DE MAUPASSANT . . . . .	583
BENJAMIN F. BUTLER. . . . .	543	JULIUS S. MORTON . . . . .	736
JOHN G. CARLISLE . . . . .	734	RICHARD OLNEY . . . . .	735
ABNER DOUBLEDAY . . . . .	548	FRANCIS PARKMAN . . . . .	606
HAMILTON FISH . . . . .	551	PHILIP SCHAFF . . . . .	567
JOSEPH FRANCIS . . . . .	552	EDMUND KIRBY SMITH . . . . .	569
F. A. L. C. W. GENTH . . . . .	553	HOKE SMITH . . . . .	736
MANUEL GONZALES . . . . .	580	JOSEPH SMITH . . . . .	668
WALTER Q. GRESHAM. . . . .	734	MELANCTON SMITH . . . . .	570
WILLIAM HARKNESS . . . . .	24	LELAND STANFORD . . . . .	571
CARTER H. HARRISON. . . . .	371	HIPPOLYTE ADOLPHE TAINE . . . . .	578
HILARY A. HERBERT . . . . .	735	RALPH TATE . . . . .	39
THORNTON A. JENKINS . . . . .	557		

## FULL-PAGE ILLUSTRATIONS.

### COLORED PLATES—

MAP OF BERING SEA . . . . .	80
MAP OF BRAZIL . . . . .	100
ADMINISTRATION BUILDING, COLUMBIAN EXPOSITION, AT NIGHT . . . . .	760
LOOKING NORTH FROM THE OBELISK . . . . .	764
THE COURT OF HONOR. . . . .	768
ADMINISTRATION BUILDING, ELECTRICITY BUILDING, MINES BUILDING . . . . .	772
BOGOSLOV PEAK, ALEUTIAN ISLANDS . . . . .	83
HELL-GATE GORGE, FRASER RIVER . . . . .	108
THE FERRIS WHEEL . . . . .	284
NEW YORK STATE BUILDING . . . . .	765

*ILLUSTRATIONS IN THE TEXT.*

	PAGE		PAGE
PROMINENCES AND FACULÆ ON THE SUN . . . . .	41	CITY OF KUSHAN, PERSIA . . . . .	614
JAMES G. BLAINE'S BIRTHPLACE . . . . .	89	PHOTOGRAPH OF RIFLE BULLET IN MO-	
JAMES G. BLAINE'S RESIDENCE . . . . .	93	TION . . . . .	619
INDIAN TRAPPERS . . . . .	111	DIAMOND MINING IN SOUTH AFRICA (three	
TRINITY CHURCH, BOSTON . . . . .	112	views) . . . . .	639
A MATABELE LADY . . . . .	124	RULES OF THE ROAD (six diagrams) . . . . .	679, 680
A MATABELE WARRIOR . . . . .	125	A BUOYANT TORPEDO . . . . .	720
FORGING POINTS FOR ASSEGAIS . . . . .	126	SECTION OF ELECTRIC TORPEDO . . . . .	721
FEMALE INSTITUTE, JACKSON, TENN. . . . .	162	ARRANGEMENT OF MINES . . . . .	722
FEDERAL BUILDING, SHEBOYGAN, WIS. . . . .	172	TORPEDO DEFENSES OF NEW YORK . . . . .	724
CONVERSION OF POWER INTO ELECTRICITY . . . . .	280	JOHN TYNDALL'S HOUSE . . . . .	728
THE CONDUIT SYSTEM . . . . .	281	JOHN TYNDALL'S STUDY . . . . .	730
PROPULSION OF HEAVY TRAINS . . . . .	281	FIRST MORMON TEMPLE . . . . .	745
A WHALEBACK STEAMER . . . . .	282	NEW MORMON TEMPLE . . . . .	746
COALING AT SEA . . . . .	283	STATUE OF COLUMBUS . . . . .	761
TIDE INDICATOR, AND MECHANISM . . . . .	285, 286	GENIUS OF THE LOCOMOTIVE GROUP . . . . .	762
MAP SHOWING BAUMANN'S ROUTE . . . . .	336	THE REPUBLIC . . . . .	763
GERMAN STATION ON SLOPE OF KILIMAND-		TEXAS STATE BUILDING . . . . .	764
JARO . . . . .	337	MISSOURI STATE BUILDING . . . . .	766
GOUNOD'S HOUSE AT ST. CLOUD . . . . .	357	COLORADO STATE BUILDING . . . . .	767
GOVERNMENT HOUSE, HONOLULU . . . . .	374	MAINE STATE BUILDING . . . . .	768
VIEW IN MAIN STREET, HONOLULU . . . . .	377	IDAHO STATE BUILDING . . . . .	769
ROYAL PALACE, HONOLULU . . . . .	379	A BIT IN EGYPT . . . . .	770
VIEW IN THE ISLAND OF HAWAII . . . . .	381	A STREET IN CAIRO . . . . .	771
HOME OF EX-PRESIDENT HAYES . . . . .	388	A BIT OF OLD VIENNA . . . . .	772
NEW SEAL OF NORTH CAROLINA . . . . .	534	OUTLINES OF YACHTS . . . . .	775

THE  
ANNUAL CYCLOPÆDIA.

9453

973D

A

**ABYSSINIA**, an empire in eastern Africa. Menelek II, who succeeded Johannis II as Negus Negusti, accepted an Italian protectorate by a treaty concluded on May 2, and renewed on Sept. 29, 1889, in a convention for mutual protection. The country is made up of the kingdoms of Tigre, including Lasta, Amhara, including Gojam, and Shoa, with the Bogos, Shoho, Mensa, Kunama, Barea, Habab, Beni-Amer territories; the region of the Galla and Kaffa tribes; and Danakil and Adal, on the coast. The total area is about 190,000 square miles, and the population is estimated at from 4,500,000 to 5,000,000. The chief towns are Gondar, the capital of Amhara, with 5,000 inhabitants; Aksum, the ancient capital of the empire, with about as many; Adua, till recently the capital of Tigre, which has 3,000; Ankober, the former capital of Shoa, with 7,000; Liche, the present capital of Shoa, with 3,000; and Makalle, the present capital of Tigre. The principal occupation of the people is raising cattle, sheep, and goats. There are forests abounding in valuable woods, and indigo, cotton, sugar-cane, the date palm, and the vine grow thriftily, but little attention is given to their cultivation. The products most largely exported are ivory, skins, butter, gums, and mules. Nearly all the foreign commerce passes through the Italian port of Massowah. The money of the country consists of Maria Theresa dollars, still coined in Austria for this part of Africa, besides which bales of cloth and salt are used as currency.

**War in Tigre.**—In a devastating war for supremacy in the northern kingdom Ras Mangascia was victorious over his adversary, Ras Alula, in the beginning of 1893. In March Alula had reorganized his forces, and the war broke out afresh.

**AFGHANISTAN**, a monarchy in central Asia. The present Ameer, as the hereditary sovereign is called, is Abdurrahman Khan, a grandson of Dost Mohammed, who was placed on the throne after the British invasion of the country in 1879-'80 in consequence of the massacre of the British envoy and his suite at Cabul. The kingdom is divided into the provinces of Cabul, Herat, Candahar, and Turkistan, and the district of Badakshan. The boundary dividing Afghanistan on the north from Russian Turkis-

tan and the khanates under Russian influence is the river Oxus and a line drawn by an Anglo-Russian boundary commission from Khamiab, on the Oxus, in a southwesterly direction to Zulfi-kar, on the Heri-Rud, thence southward to the peak of Kuh Malik-i-Siyah, near the Helmund, and then, with a bend to the east, to the Kwaja Amran range. The Persian frontier on the west is tolerably well defined, as is the western part of that between Afghanistan and British Beluchistan. Farther east, in the Zhob valley and the Waziri country, and in the southeast, in Kafiristan, Chitral, Swat, and the upper basin of the Indus, the Indian Government is extending its political influence over the tribes that the Ameer claims as his subjects. In the extreme east, the Pamir region, the boundaries between Afghanistan, and Russia's sphere on the north, Chinese Turkistan on the east, and India on the south are indeterminate and subject to dispute.

Besides the Ghilzai, Durani, and other Afghan tribes who inhabit the central parts of the country, the population, which exceeds 4,000,000, includes the Tajiks, probably of Persian origin, who cultivate the soil and ply peaceful trades, and in the north the Aimaks and Hazaras, who are supposed to be descended from the former Tartar conquerors, and the Uzbecks. A large part of the Hazaras and the Kizilbashis are Shiite Mohammedans, while the rest of the population are Sunnites.

The regular army established by Shere Ali has been revived by Abdurrahman, who is said to have about 50,000 troops. The tribal levies are incorporated with these as irregular auxiliaries, with the exception of the horsemen, who still follow their feudal chiefs. Gifts of ordnance from the Indian Government arm 6 mule batteries, 2 field batteries, and an elephant battery. There is an arsenal in Cabul for the manufacture of ammunition.

**Commerce and Production.**—Afghanistan is noted for the abundance and excellence of its fruits, on which a large proportion of the people mainly subsist. Apples, pears, peaches, almonds, quinces, apricots, plums, cherries, grapes, figs, mulberries, and melons thrive to perfection, and quantities of preserved fruits are exported. Wheat, barley, chick peas, beans, millet, rice, maize, and panic grass are cultivated. The cas-



tor-oil plant, madder, and asafœtida abound, and of the latter there is a large export to India. Lead, copper, iron, and some gold and precious stones are mined. Silk is produced extensively, and felt, carpets, rosaries, and postins or sheepskin coats are exported. Horses, wool, spices, timber, and nuts are also exported largely. The chief imports from India are cotton piece goods of British and Indian manufacture, China tea, indigo, and sugar. The imports of Russian merchandise from Bokhara in 1890 amounted to 3,944,568 rubles, and the exports to Bokhara were 3,983,270 rubles in value.

**Anglo-Afghan Disputes.**—The military defenses of northwestern India were considered complete when the mountain passes through which hostile armies have entered the Indus valley were occupied and fortified and strategic railways and arsenals established in Sindh. The passes and all the mountain region before the last Anglo-Afghan war belonged to untamable hill tribes, which were supposed to be subject to the Khan of Kelat or the Ameer of Cabul. Since then the British authorities, besides increasing the numerical war strength of their army enormously and training a native auxiliary army offered by the feudatory princes, have established a new military frontier, which is intended to confine the scene of any armed struggle with a Russian army in Asia to the region beyond the Himalayas. By advancing to Quetta they have, moreover, contracted the front open to a direct attack, and can place troops in the field to face a Russian advance coming in any direction through Afghanistan and forward troops and supplies several times more swiftly than can the Russians. The fortress of Quetta is a position that can not be turned, and the waterless and impassable nature of the country on either side renders the single line of railroad communication entirely safe from an enemy in front, while the energetic work of pacification carried on for several years past has secured it against treachery from within. The Quetta Railroad and the two broad-gauge railroads up the Bolan and Harnai passes permit of the rapid accumulation of forces behind the extended works of Quetta, which a defeated general could hold until the enemy, lacking railroad communications, would be compelled to relinquish the positions he has seized whenever a crushing force, brought up by rail, advances upon them. In securing this position it was necessary not only to annex a great part of Beluchistan, but to begin the disintegration of Afghanistan by conquering neighboring hill tribes belonging politically, as well as ethnically, to the Afghan kingdom. The fact of their political allegiance to the Ameer, formerly insisted upon in order to hold him morally responsible for the misdeeds of the wild hill men, was denied by the Indian authorities after they began the difficult task of subjugating them, in order to keep up the fiction of a buffer state, a strong, free, and independent Afghanistan. Abdurrahman, who had been induced to employ his military forces in reimposing the Afghan yoke on the alien races of Afghan Turkistan, and in extending his conquests over Roshan, Shignan, and Wakhan, even establishing posts in the Pamirs in order to dispute their possession with the Russians and the Chinese,

turned his attention to the defense of his southern borders against the encroachments of his ally. In the east the British planned to extend their political frontier quite up to the Hindu Kush range, although the Yusufzais and Mohmands beyond Peshawur and the tribes of the Swat and Kunar valleys and Kafiristan have hitherto acknowledged no foreign master except the Ameer of Cabul, whose rule has been asserted also among the Dards and Kohistanis beyond Cashmere and Gilgit, and in Chitral and Yassin, farther north. The feverish haste of the British to annex these alpine districts did not spring from a fear that the Pamirs and the icy passes of the Hindu Kush and the Himalayas in this region could ever be used for the passage of a hostile army. The object was to create a buffer under British dominion which will prevent all intercourse between the people of India and the Russians when the latter shall have established themselves in the Pamirs, and thus guard against the intestine political dangers that would arise from the immediate proximity of another powerful European military empire in a region where a fortified military frontier and a strict frontier guard are unnecessary and impracticable.

The operations against the Pathan hill tribes near the new railway line and in the Peshawur district led to a coolness between the Ameer and the Indian Government, which was increased when the British seized and fortified a strategic position on the farther side of Pishin in territory that was unquestionably Afghan. The khanates bordering on the Pamir region have sometimes paid tribute to Afghanistan and sometimes to Cashmere. If the British had done nothing to excite his jealousy in districts nearer Cabul the Ameer might have allowed them to work their will in these distant provinces. As it was, he used all his craft and influence to frustrate their designs. When Aman-ul-Mulk, the Mehtar of Chitral, died, he was succeeded by his son Afzul, who was well disposed toward the British. But before the death of Aman-ul-Mulk Afghan troops had been pushed up the Kunar valley, and hardly had the young chief assumed the government when he was confronted with a pretender, Sher Afzul, who with the assistance of the Afghans entered Chitral from Badakshan, seized the fortress of Chitral, put the new chief to death, and proclaimed himself Mehtar. The British authorities at Gilgit gave their countenance and aid to Nizam-ul-Mulk, brother of the murdered Mehtar, who about the beginning of 1893 defeated the usurper, who fled into Afghanistan, and established himself in the chieftainship. The English were thus enabled to continue their operations among the mountain tribes beyond Chitral. After they had occupied a place called Chilas with a garrison and erected a permanent fort they were attacked by 1,500 of the neighboring Kohistani mountaineers, who were finally driven off after a desperate battle, in which 200 of them were killed. The British then took the offensive, and marched against the villages of the hostile tribes, destroying one after another, until the natives made their submission. Of the British, 23 were killed, including Major Averell Daniell, the leader of the expedition.

The Ameer raised a strong protest against the British occupation of the village of Biland-Khel



in the Kurram valley, east of the Kurram pass. He instructed the Afghan Governor of Khost to regain possession of the place by force when the British commander refused to heed his remonstrance. To avoid a collision the Indian Government, in March, ordered the troops to be withdrawn from Biland-Khel to the other side of the Kurram river, after obtaining an agreement from the Ameer to leave the boundary question open for future settlement. With a view to the restoration of an amicable understanding and the settlement of this question and the trouble among the tribes on the Indian frontier, Abdurrahman was invited to a conference with Lord Roberts at Jellalabad. The Ameer declined to meet Lord Roberts to confer upon questions touching his relations with his subjects, which he claimed the right to deal with according to the sacred laws of the Afghans without outside interference. He declared that he had armed the Afghans to meet an attack from either England or Russia, while willing to co-operate with England in a satisfactory plan for defending the northwestern frontier against the latter. Europeans who were in the Ameer's employment at Cabul were dismissed, or found it advisable to resign and leave the country on account of the threatening actions of the Ghazis.

**The Pamirs.**—The Pamir region is a remarkable plateau in the heart of Asia, where great mountain ranges come together. Its length from north to south is about 250 miles, and its breadth 120 miles. Winter lasts eight months, but during summer the Kirghis find rich pasture for their fine cattle and strong mountain horses. The sovereign rights over this country have been claimed by the Emir of Khokand, by the Afghan Ameer, and by the Chinese of Kashgar. Instigated by the British, the Ameer deposed the Khan of Badakshan and attempted the subjugation of the khanates of Shighnan and Wakhan. The Chinese, with the approval of the British, advanced up the slopes from Kashgar and established garrisons in the eastern Pamirs, while the British themselves, on the southern border of the Pamirs, seized Hunza and Yasin and posted garrisons in those places. As successors to the rights of the Emir of Khokand the Russians claimed the entire region, which was now partitioned between the Afghans and the Chinese, with the exception of a narrow strip in the middle. An Anglo-Russian agreement made the Oxus the limit of the Russian sphere up to its fountainhead. The English held that the Murghab, in the north of the Pamirs, was intended, but the Russians contended that the Panjah branch, which runs close to the new British frontier, must be considered the true source of the Oxus.

In April, 1892, the Afghan forces attacked a Chinese garrison stationed at Somatash, a small town in the western part of the Pamir region. The Chinese were driven out, and their authorities remonstrated with the British Government, which had previously upheld the Afghan claim to sovereign rights over the greater part of the Pamirs, but was now disposed to admit the Chinese claim to all the territory from Somatash eastward. While negotiations were proceeding on this basis the Russians sent 1,200 infantry, cavalry, and artillery, under Col. Yonoff, to expel both the Afghans and the Chinese and take

possession of the whole region. The Chinese forts in the eastern Pamirs were evacuated on the appearance of this superior force, but preparations were made in China to re-enforce the garrison in Kashgar and strike a blow for the possession of the disputed territory. This design was not carried out because a diplomatic arrangement promised more satisfactory results to the Pekin authorities, who had no real interests here except to safeguard Kashgar. When the Russians reached Somatash the Afghan advance guard fired upon them, and the fort was not taken without a fight, in which all the Afghans were killed or made prisoners. After this the Russians held undisputed possession of the Pamir region, and a part of the troops went into winter quarters there. During the winter 300 Russian troops were kept in the Pamirs, and in April, 1893, two battalions of infantry and two batteries of artillery were dispatched from the northwest to increase the army of occupation. The British Government entered into direct diplomatic negotiations with Russia for a delimitation of the respective spheres of interest in this region, based on ethnographical considerations and the previous political relations of the inhabitants. These negotiations were necessarily slow, and the Russian Government gave the assurance that no further active operations should be undertaken and no new expedition or re-enforcements sent to the Pamir during 1893. The Russians were reported, however, to have already required the Afghans in Wakhan to surrender Kala Panja. This position commands the passes leading to Chitral, while the possession of the Little Pamir gives access to Kanjut through the Wakhjirui pass. In June, 1893, 500 Russian infantry, two sotnias of Cossacks, and mountain artillery left Marghilan for the Pamir region. These re-enforcements, it was said, were to remain in the Alai valley, except those that were necessary to relieve the guards stationed in the Pamirs. The Chinese Government was not content to leave to diplomacy alone the care of its interests in the part of the Pamirs that commands Kashgar. Three military outposts west of Kashgar were held by Manchu and Mongol troops, an experienced general was placed in command at Kashgar, and large reserves were kept at Kulja and Tarbayatai, while a strong garrison of the best Manchu troops, with Krupp and machine guns, was sent from Chibli to Shensi. The Pekin Government was not interested directly in the portions of the Pamirs leading to Afghanistan or Cashmere, but was determined to maintain its claim to the region lying between the Transalai and Alichur mountains. The Chinese minister to Russia was instructed by the Tsungli-Yamen to concede nothing in the neighborhood of the Kara-kul lake, and to insist on sovereign rights over all the territory eastward of a line drawn from the southern extremity of the lake for 60 miles southward, and including all the country inclosed in the spur of the Tian-Shan range, which runs southward from the Ekizeh pass, and is known as the Kartag mountains. This district is inhabited by the Prute tribe of the Kirghis, who have never become reconciled to Chinese dominion, but would be likely to co-operate with the Chinese against the Russians.

**Russian Progress.**—The Russian administration in the province of Ferghana has been building a road leading into the Pamirs and Kashgaria. The Russian trade with Central Asia has so increased that the Transcaspian Railway is not sufficient for the traffic. A new railway or a canal is demanded. A plan is contemplated for connecting the Amu Daria with the Caspian by a navigable water way, which would afford the necessary facilities for transportation, and at the same time could be utilized for the irrigation of thousands of square versts of rich land suitable for the cultivation of cotton. A railroad from Orenburg to Tashkend is also under consideration. The Asiatic visitors to the fair at Nijni Novgorod are annually increasing. Even Afghan merchants are represented there. During 1893 the Emir of Bokhara and the Khan of Khiva visited the Czar in St. Petersburg. A dispute which arose regarding the use by the Russians and Afghans respectively of the water of the river Kushk, in the neighborhood of the delimited Russo-Afghan frontier, was settled in the summer of 1893 by Col. Yate and a Russian commissioner, who met on the spot to study and decide the matter in consultation.

**ADVENTISTS, SEVENTH-DAY.** The following is a summary of the statistics of the Seventh-Day Adventist Church as they are given in the Seventh-Day Adventist Yearbook for 1893: Number of districts, 7, viz., Atlantic, Southern, Lake, Northwest, Southwest, Pacific, Foreign; of conferences or territorial organizations, 45; of ministers, 244; of licentiates, 156; of churches, 1,102; of members, 33,778; amount of tithes, \$302,310. The foreign conferences taken separately, including churches in Australia, Great Britain, Central Europe, Denmark, New Zealand, Norway, South Africa, Sweden, Polynesia, Germany, Russia, South America, the West Indies, and Central America, return 37 ministers, 18 licentiates, 108 churches, 3,524 members, and \$52,710 of tithes. The General Conference Association balanced its resources and liabilities at the end of 1892 at \$261,732. The Foreign Mission Board returned its receipts at \$60,886, and its disbursements at \$46,362. The International Tract Society returned its resources and liabilities at \$7,844; the Educational Society at \$119,378. The receipts of the National Religious Liberty Association for six months had been \$12,121. The International Sabbath-School Association reported the number of schools as 1,552, with 35,223 members, and an average attendance of 26,075; and the gifts of the Sabbath schools to missions amounted to \$18,456. Publishing houses in connection with the Church are established at Battle Creek, Mich., Chicago, Toronto, Ont., and Oakland, Cal.; and other publishing houses in London, Christiania, Norway, Basel, Switzerland, and Melbourne, Australia. The educational institutions are Battle Creek College, Mich.; Union College, College View, Neb.; Healdsburg College, Cal.; Walla Walla College, College Place, Wash.; South Lancaster Academy, Mass.; Claremont Union College, near Cape Town, South Africa; and the Australasian Bible School, Melbourne. Health institutions are maintained at Battle Creek, Mich., and St. Helena, Cal.

The General Conference met in its thirtieth session at Battle Creek, Mich., Feb. 17. Thirty-

three conferences and 4 mission fields were represented. In the resolutions adopted on public questions, emphasis was given to the position of the Seventh-Day Adventist Church as demanding the most complete separation of Church and state. One series of resolutions took the form of an appeal and protest against a decision of the United States Supreme Court declaring the United States a Christian nation, and against the passage of an act of Congress directing the closing of the Columbian Exposition on Sunday, as a violation of the Constitution and invading "the dearest rights of the people, by legislating on the subject of religion, deciding a religious controversy, and establishing a religious institution"; appealing as Christians "on the ground of the divine right which Jesus Christ has recognized and declared—the right of every man to dissent even from the words and religion of Christ"; as Protestants, "on the ground of the historical right to protest against every interference of government in the affairs of religion"; as American citizens, "on the ground of the specifically declared constitutional right to the free exercise of religion according to the individual conscience"; as men, "on the ground of the natural right of mankind to render to the Creator such homage, and such only, as each believes to be acceptable to him." The resolutions represented "that the only proper objects of civil government are the happiness and protection of men in the present state of existence, the security of life, liberty, and property of the citizens, and to restrain the vicious and encourage the virtuous by wholesome laws, equally extending to every individual." But religion can be directed only by reason and experience and is cognizable only at the tribunal of the Universal Judge. Other resolutions protested against a bill proposed in the Legislature of Tennessee exempting Seventh-Day Baptists, Adventists, etc., from the penal operation of the Sunday laws, provided they observe one day in the week as a day of rest, declaring that consent to the act "would be only to surrender to the state our God-given right to be religious or not religious, to observe or not to observe a day, according to the dictates of our own consciences and the convictions of our own minds; and would be only to consent that the state shall take judicial and supervising cognizance of our religious beliefs and our conscientious observances"; as well as to consent to have enforced on others that (the observance of Sunday) which they would not have forced on themselves. The conference also protested against the exemption of Church property from taxation. The local conferences were advised to hold workers' institutes for the study of "religious liberty subjects." For propagating the principles of the denomination in foreign countries a more vigorous and thorough work in Great Britain was determined upon; assistance was pledged in the establishment of a school for workers in Australia; the Foreign Mission Board was advised to send an American family of suitable experience and qualifications to Constantinople; the opening of a mission in India was advised, to include health and medical missionary work, teaching, Bible work, canvassing, and translating and publishing small works in the native tongues;



suitable persons were invited to engage as self-supporting missionaries; the establishment of a Chinese mission school in Chicago was decided upon; the selection was advised of young men of good education to be sent to countries in which there is no Adventist literature, study the languages, and prepare such literature in them. Action was taken for strengthening or introducing the publications of the denomination in the Danish, Swedish, and German languages, and in Holland and Finland; the acquisition of the denominational periodicals to be controlled by the General Conference, and a unification of the publishing interests, were decided upon; a committee was constituted to prepare a plan for the examination of candidates for ministerial license and credentials. This committee reported a schedule of topics upon which such examinations should be conducted. Recommendations were made for opening new schools in Texas; at Parkmount, near Bainbridge, Ireland; a training school for persons of mature age at Battle Creek, Mich.; a school at Grayville, Tenn., was approved; and the establishment of other local schools in the South for white students and colored students was recommended.

**ALABAMA**, a Southern State, admitted to the Union Dec. 14, 1819; area, 52,250 square miles. The population, according to each decennial census since admission, was 127,901 in 1820; 309,527 in 1830; 590,756 in 1840; 771,623 in 1850; 964,201 in 1860; 996,992 in 1870; 1,262,505 in 1880; and 1,513,017 in 1890. Capital, Montgomery.

**Government.**—The following were the State officers during the year: Governor, Thomas G. Jones, Democrat; Secretary of State, Joseph D. Barron; Treasurer, Craig Smith; Auditor, John Purifoy; Attorney-General, William L. Martin; Superintendent of Public Instruction, John G. Harris; Commissioner of Agriculture, Hector D. Lane; Railroad Commissioners, Henry R. Shorter, J. T. Holtzclaw, appointed in February to fill the vacancy caused by the death of Commissioner Lawler, Wiley C. Tunstall; Chief Justice of the Supreme Court, George W. Stone; Associate Justices, Thomas N. McClellan, Thomas W. Coleman, J. B. Head, and Jonathan Haralson.

**Finances.**—For the fiscal year ending Sept. 30, 1892, the State treasury statement is as follows: Balance on Oct. 1, 1891, \$176,039.40; total receipts for the year ensuing, \$1,783,532.65; total disbursements, \$1,767,659.80; balance on Sept. 30, 1892, \$191,912.25. Of this balance the sum of \$132,561.80 was derived from the special tax of  $\frac{1}{4}$  mill for the relief of Confederate soldiers, which was then payable under the terms of the law authorizing the tax, leaving an available balance of only \$59,350.45. In order to prevent a deficit during the year 1893 and subsequently, the General Assembly was obliged to raise the State tax rate from 4 to 5 mills. The State debt on Sept. 30, 1892, amounted to \$9,293,100; but there is outstanding a considerable amount of old bonds, which, if brought in to be refunded under the terms of existing laws, would increase the debt to the extent of \$249,500.

**Valuations.**—In 1891 the total assessed valuation of taxable property was \$275,316,491, an increase of \$16,236,916 over the preceding year. This was the highest valuation attained since

the civil war, being more than double that of 1876. But in 1892 the taxable values dropped to \$260,926,127, real estate being valued at \$154,690,657, and personal estate at \$106,235,470. "The causes of this marked decrease," says the Governor in his message to the Legislature, "are not far to seek. During the year 1892 cotton continued to be marketed at a price below cost, and there was great depression in the iron market. Many premature enterprises were compelled to cease operations and go through the process of liquidation. Speculative values, which discounted future prosperity with too sanguine hopes, settled down under the inexorable law of supply and demand. Unhappy differences, waged with unwonted bitterness over State politics for more than a year before the State election, disturbed public serenity and retarded confidence."

**Legislative Session.**—The General Assembly, which convened at Montgomery on Nov. 15, 1892, and adjourned on Dec. 12 to Jan. 19 of this year, concluded its work on Feb. 21. Early in the session the returns for State officers were opened and counted, and the regular Democratic candidates were declared elected. The vote for Governor was found to be 126,959 for Thomas G. Jones, and 115,524 for Reuben F. Kolb. The friends of candidate Kolb were anxious to contest the election, but as they had not a majority in the General Assembly they were unable to secure the passage of a law authorizing such a contest. One of the most important results of the session was an act providing for registration of voters and introducing the Australian system of voting in all elections. Under this act the duty of preparing the official ballots is imposed on the probate judges in each county. The ballots shall be printed on plain white paper of such thickness that the printing can not be distinguished from the back. The names of candidates shall be arranged under the designation of the office for which they are nominated, and in alphabetical order according to surnames. At each polling place there shall be at least one booth or voting compartment for each 100 electors registered and for any fraction of 100 exceeding 50. These booths or compartments shall be fitted with a shelf or table, and so constructed that the voter may mark his ballot secretly. He shall indicate his choice by placing a cross before the name of his candidate, or by writing in a name and placing a cross before it. A voter who can not read may, in preparing his ballot, have assistance from one of the inspectors of election, to be chosen by the voter, or of a person appointed by the inspectors for that purpose, and the inspectors may appoint as many assistants as they deem necessary in the preparation of his ballot.

Another important act of the session introduces a complete change in the management of State and county convicts. The entire control of the convict system is thereby intrusted to a board of nine managers appointed by the Governor, of which he is *ex officio* president. The convicts are to be classified and graded, and although they may still be let out under contract, yet in every such case they shall be fed, clothed, lodged, and doctored by the State, and shall be under the immediate custody of the

warden or other person employed by the State. After the termination of existing contracts no State or county convict shall be employed in any mine. The State convicts shall then be employed in diversified industries, and among other things shall manufacture articles commonly needed at the Penitentiary and other State institutions. The managers of such institutions shall not purchase any article when it can be obtained from the State Penitentiary. For the purpose of carrying out this act, the Board of Managers is authorized to acquire land and erect buildings, as the present Penitentiary buildings are inadequate. The net income of the Penitentiary for the year ending Sept. 30, 1892, and for five years next ensuing, is appropriated for this and other purposes of the act. Schools shall be established for the convicts, at which attendance shall be compulsory. County convicts may be worked on county roads, and shall be under control of the Board of Managers.

The Governor was authorized to enter upon negotiations for the consolidation and adjustment of the bonded State debt, on the basis of 4 per cent. interest, and was empowered, if he should find such a course practicable, to issue new 4-per-cent. bonds to an amount not exceeding the State debt, and to exchange them at par for the outstanding bonds.

Provision was made for selling at auction, at the county courthouse of each County, the State lands known as swamp and overflowed and indemnity swamp lands. The sale is to begin on the first Monday of December, 1893, and continue till all such lands are sold or offered for sale; but none are to be sold at less than 25 cents an acre.

In order to secure sufficient revenue for current expenses, the tax rate for 1893 and 1894 was increased to 5 mills; but the Governor was authorized to suspend the collection of a part of such tax in either year, if the condition of the State treasury should warrant.

An industrial school for white girls was established, and the sum of \$5,000 in the year 1895, and \$10,000 in the year 1896, was appropriated for its use. For each of the years 1893 and 1894 the sum of \$11,500 was appropriated for encampments of the State militia. A license tax was imposed on the capital stock of corporations, and a privilege tax upon express companies, graduated according to the length of their lines in the State. Insurance companies of every kind were required to pay a tax equal to 1 per cent. of their gross premiums from business in the State, after deducting return premiums on canceled policies and losses actually paid. Telephone companies were taxed 1 per cent. on their gross receipts.

A law was passed permitting a contest in the case of elections for members of the General Assembly, for chancellor, for judge of the circuit court, and for certain minor officers, but in no other cases. An amendment to the State Constitution was proposed, authorizing the General Assembly to confer upon trustees of school districts the power to levy a special school tax of not more than one fourth of 1 per cent. on the assessed valuation of the district, and to apply the money collected thereunder from the white taxpayers exclusively for the benefit of chil-

dren of the white race, and the money collected from colored taxpayers exclusively to the education of colored children. For the years 1893 and 1894 the sum of \$350,000 was appropriated annually for public schools.

Other acts of the session were as follow:

To prevent the perpetration of fraud by directors and managing officers of corporations.

To regulate the taking of oysters from the public reefs in the State.

To compel the determination of claims to real estate, and to quiet title to the same.

Establishing the first Monday of September in each year as a holiday, to be known as Labor Day.

To punish officers and agents of banks and banking institutions who receive deposits knowing that such banks and banking institutions are insolvent.

To provide for more competent men in the transportation service on railroads in the State.

Requiring sleeping-car companies to pay a privilege tax of not less than \$500 and not more than \$1,000.

To regulate the business of building and loan associations.

To encourage the building and operating of cotton and woolen factories in the State.

To relieve married women from the disabilities of minority.

Authorizing commissioners' courts and county boards of revenue to aid indigent Confederate soldiers.

To subject shares or interests in the stock of private corporations to levy and sale for the payment of taxes.

A bill providing for a convention to revise the State Constitution was defeated in the House.

**Education.**—For the school year ending in 1892, the number of children of school age in the State was 550,522, of whom 309,628 were of the white race and 240,894 of the colored race. To aid them the State appropriated \$350,000 out of its general taxes, and in addition thereto the interest on the sixteenth section fund, the United States surplus revenue fund, and the amount of poll taxes, making a total expenditure during the year of \$627,911.66.

The State Superintendent reports that the number of schools during the past two years has been greater than ever, with a better attendance, and that the people are supplementing the public appropriations with their private means to a degree not heretofore known.

The Alabama Institute for the Deaf, the Academy for the Blind, and the School for Negro Deaf Mute and Blind, maintained by the State, in Talladega, are not intended as asylums or homes, but are really parts of the public-school system of the State. The property of the State at this place is estimated at \$125,000. In November, 1892, the number of pupils was as follows: White deaf mutes, 82; white blind pupils, 54; colored deaf mutes, 14; colored blind pupils, 13; total, 163.

The State pays for the maintenance of these schools on the *per capita* plan, \$217.53 per pupil for the deaf and \$230 per pupil for the blind.

**Convicts.**—On Aug. 31, 1892, there were 2,098 prisoners under confinement in the State, of whom 1,183 were State convicts and 915 county convicts. The greater part of these were employed in coal mines, but by the provisions of the law passed this year by the General Assembly the early removal of all convicts from such employment is contemplated. For the



period of twenty-three months, ending on the date last mentioned, the net income from convicts, was \$157,702.58.

**Militia.**—The total number of officers and men in the State militia is about 2,730, but at least 40 per cent. of this number are inefficient from lack of discipline and proper equipments.

**Pensions.**—The special State tax levied for the relief of Confederate soldiers and their widows yielded a fund for distribution in 1892 amounting to \$131,362.02. There were 4,955 applications, and each applicant received \$26.50. A special fund for the blind, for which there were 38 applicants, yielded \$31.57 to each applicant.

**Manufacturing.**—In 1892 Alabama had 20 cotton mills in operation, containing 109,448 spindles and 1,900 looms, which consumed during the year 39,700 bales of cotton, or 18,714,057 pounds. The capital invested was about \$3,000,000. In 1880 there were 16 mills, with only 49,432 spindles, consuming yearly 7,271,791 pounds of cotton, and representing a capital of only \$1,246,500.

**Lumbering.**—Alabama ranks third in the South in the amount of available timber it contains, and in variety of woods it has few equals. Virgin forests cover nearly one third of the State, and this vast area of timber land is intersected in every direction by navigable streams. The principal timber woods are pine, white oak, hickory, black walnut, and wild cherry. The principal forests of long-leaf pine are to be found in the Gulf coast and central pine belt of the Coosa valley region, and in a limited area in Walker County; estimated in all to contain about 12,000 square miles. These lands are said to yield from 5,000 to 6,000 feet of good timber per acre. The short-leaf pine forms a considerable proportion of the forest growth in the upper part of the coast pine belt and in the uplands in the northern part of the State. The yellow pine still continues the chief lumbering wood of the State. The mills sawing pine lumber are mainly around Mobile and Pensacola.

The increase of lumber mills is as follows :

YEARS.	No. of establishments.	No. of employees.	Value of products.
1860.....	336	.....	\$1,873,484
1870.....	248	.....	2,359,633
1880.....	354	1,647	2,649,635
1885.....	639	4,412	7,991,308
1892.....	760	5,200	9,936,000

The output of other forest products, such as turpentine and rosin, has largely increased, particularly in the southern portion of the State, where there are now 35 establishments with a total average annual production of \$675,000.

**Phosphates.**—There is a tract of land across the State between the thirty-second and thirty-third parallels of latitude locally known as the "Black Belt." In this tract, particularly in the central and western parts, greensand marls and phosphatic nodules have been found which promise as well as the Florida phosphates. Some effort has been made to develop these deposits, and the phosphatic marls particularly have been used locally, but the district is not well supplied with transportation facilities at present. Under a stratum of greensand marl 5 to 6 feet thick occurs a sandy, indurated, nodular rock 2 feet thick,

cemented by carbonate of lime, which yields from 200 to 800 tons an acre of phosphatic nodules, yielding 20 to 38 per cent. of phosphoric acid.

**Mobs.**—On this subject Gov. Jones addressed a communication to the General Assembly on Feb. 6, of which the following is a portion :

It is an unpalatable but nevertheless startling truth, that within the past two years no less than 16 citizens of Alabama have been taken from jails or the custody of officers of the law and executed by mobs. This record is aggravated by the fact that there was not the slightest doubt in any of these cases of the conviction of the accused if guilty; and in two instances at least the parties, if guilty, were not deserving of death, according to any law of God or man. The courts were open and trustworthy, and the laws were freely and impartially administered in each of the localities where these helpless prisoners were slain. In each instance comes the same plea by the officers of the law of overpowering numbers, or sudden surprise preventing resistance. In none of these assaults was a weapon drawn or a shot fired by the officers of the law in defense of their prisoners or the outraged honor and dignity of the law. Assaults upon jails and taking out of prisoners by mobs to put them to death are as flagrant insults to the dignity and sovereignty of the people as would be an attempt to disperse the Legislature by force or overawe its highest court by violence. The State can no more permit the one to be done than the other with impunity, without losing the respect of the people and practically abdicating its functions.

The Governor believed that these outrages would be stopped if the sheriffs were given more ample powers and if there should be more promptness in trying the persons accused. To this end he recommended various changes in the laws.

**Political.**—After the State election of August, 1892, the leaders of the Jeffersonian Democracy, as the faction that supported Reuben F. Kolb for Governor was styled, believing that they had been defeated through fraud by the regular Democracy, refused to join their opponents in supporting the national Democratic ticket. But they were unable to carry all their followers into the opposition, and at the November election were more easily defeated than in August. When the Legislature met, late in November, Kolb and his friends demanded a law that would enable them to contest the regularity of the August election, but were refused. Under these circumstances there was no legal method by which they could establish their claims. Their party organization was continued, however, and in May of this year they submitted a proposition to the regular Democracy suggesting that a primary of the white voters of the State should be held early in 1894, at which the person having the highest number of votes should become the candidate of the white voters. This proposition was rejected, and both sides began preparations for another contest in 1894.

**ANGLICAN CHURCHES. Statistical.**—The official Yearbook of the Church of England for 1893 gives prominence, in view of the movement for its disestablishment, to certain facts concerning the condition and life of the Church of England in Wales. The net income of all the Welsh benefited clergy, taking into the account tithe rent charge and glebe, pew rents, Easter offerings, fees, and every other source of revenue, amounted in 1892 to £183,000. The total of all voluntary offerings for missions, education, support of the poor, etc., was £219,000.

In the thirty-three years following 1840 the total sum expended on church building and church restoration was £1,089,247, while the corresponding sum for the eighteen years succeeding these to 1891 was £1,127,476—a rate of expenditure in the former period of £33,000 a year, and in the second period of more than £62,000 a year, the total for the half century being £2,216,723, or an average of £2,216 for each parish. The statistics of communions give results showing that among the same number of people for every three communicants in England there were four in Wales, and the reports of confirmations give similar results.

The Rev. Dr. Deed, honorary secretary of the Church of England Incumbents' Sustentation fund, founded nearly twenty years ago by the Marquis of Lorne, has prepared the following tabular statement of the result of an analysis of the "Clergy List" and of "Crockford's Clerical Directory":

CLERGY LIST.

POPULATION.	VALUE OF BENEFICES.					Totals.
	Under £100.	£100 to £150.	£150 to £200.	£200 to £300.	Over £300.	
Not given.....	32	28	13	30	44	147
Under 250.....	345	457	473	642	404	2,321
250 to 500.....	156	364	448	849	1,058	2,875
500 to 1,000.....	65	272	396	923	1,326	2,990
Over 1,000.....	58	309	570	1,776	2,965	5,678
	659	1,430	1,900	4,225	5,797	14,011

CROCKFORD'S CLERICAL DIRECTORY.

POPULATION.	VALUE OF BENEFICES.					Totals.
	Under £100.	£100 to £150.	£150 to £200.	£200 to £300.	Over £300.	
Not given.....	24	33	18	26	36	127
Under 250.....	460	573	493	551	270	2,347
250 to 500.....	264	459	509	851	720	2,803
500 to 1,000.....	148	363	466	941	981	2,849
Over 1,000.....	178	389	788	1,986	2,148	5,489
	1,074	1,817	2,274	4,355	4,105	13,625

It is shown in the forty-fifth report of the ecclesiastical commissioners that during the year ending Oct. 31, 1892, numerous grants were secured to benefices, which raised the total value of augmentations made by the commissioners since 1840 to £791,300 per annum. In the same period the value of the benefactions secured to benefices by private donors exceeded £170,000 per annum. The accounts showed a falling off in the income derived from estates, and the commissioners anticipated a still more serious diminution for the current year, owing to strikes and the losses of agricultural tenants. The commissioners had therefore been obliged to reduce the appropriations.

The ecclesiastical commissioners announced in February that they were prepared to receive, on or before Dec. 1, 1893, offers of benefactions of not less than £100 each in capital value toward making better provision for the care of souls, with a view to such offers being met by the board with grants of capital sums, during the spring of 1894, it being understood that the means at the disposal of the commissioners for meeting benefactions being much reduced, the board did not undertake to meet all the offers

which might be made. The commissioners were also prepared to receive offers of benefactions of not less value than £2,000 each in favor of parishes or cures containing populations of 6,000 and upward, with a view to such benefactions being met by grants, not exceeding £60 per annum in each case, to be appropriated toward the maintenance of assistant curates. These grants, too, could only be a few in number. In connection with these announcements the specific conditions were published, on which the grants would be made.

Addressing the House of Laymen of the Convocation of Canterbury, the archbishop spoke of the evidences of material strength in the Church of England, embodied in the returns made in answer to a Parliamentary inquiry in 1891, as "not short of surprising." Neglecting all expenditures of less than £500, there had been spent in the building and restoring of churches in England and Wales in the eighteen years then ended more than £20,500,000. In the four poor dioceses of Wales alone more than £1,000,000 were so spent. Upon Church schools in the same period £20,000,000 were spent in England and Wales. The voluntary outlay of the Church appeared, in fact, to be not short of £5,000,000 a year.

**Convocation of Canterbury.**—At the meeting of the Convocation of Canterbury, in February, particular attention was given to the reduced incomes of the rural clergy. A resolution was passed in the lower house requesting the president to appoint a committee "to inquire into the statements relative to the depressed condition of clerical incomes, and to consider what steps should be taken for their improvement." Speaking upon this resolution, Prebendary Salmon quoted statistics showing that at present one third of all the benefices in England and Wales were under £200 in annual value, and that the distress of the poorer clergy was serious and widespread. The incomes of the poorer benefices had decreased very rapidly within the last ten years, and some action was necessary to deal with the matter. It was said that there were plenty of men with private means to take the poor livings, but such men were decreasing in number every year, and great difficulty was experienced in securing suitable persons. A comparison of the stipends of nonconformists with those of the clergy would show that in the Presbyterian Church the average was £317 a year, as against an average of £230 in the Church of England. Separate committees were appointed on the subject in the upper and lower houses, which will communicate with one another. A committee was appointed in the upper house to inquire into the subject of fasting communion. The lower house requested its Committee on Education to report the best measures by which, in its opinion, Church schools may be maintained and their efficiency increased.

The Houses of Convocation met March 16 for the purpose of considering the Church Patronage bill, then pending in Parliament. The bill was reviewed in all the houses, a number of amendments suggested, and approved as a whole. The House of Laymen resolved that no act dealing with the subject would be satisfactory which did not provide some such safe-



guards against the acquisition of rights of patronage by unfit persons as were contained in the bill of 1887 as it was passed by the House of Lords. In the upper house the Bishop of London, in moving the approval of the bill, said

They were bound to persist in their efforts until they had made a real change in the administration of the patronage of the Church. The speaker would like to go very much further than the present bill went, because personally he was of opinion that the evil was not merely the abuse which attended the sale of advowsons and of next presentations, but that the sale itself was so great an evil that there ought to be a means of getting rid of it altogether. The circumstances of the day made it even more important that, if possible, the heads of the Church should make it visible to the whole body of the people, as well as to the Church itself, that they thought those serious evils were a blot upon the system in which they were living, and that those who were charged with the supervision of the Church recognized the fact, and that it was not their fault that those evils still continued to exist. They would have, no doubt, to struggle personally for their position in the country, and at any rate they ought to make it perfectly clear that when they were doing so they were not fighting for the maintenance of all those abuses which had been so very frequently the ground of attacks made upon them, and the ground, too, of the charge that they thought very little of that which touched the honor of the Church to which they belonged. They desired as heartily as any of their assailants desired that the Church should be purely administered upon high principles, and that all abuses should be corrected as soon as they were discovered.

The archbishop spoke concerning the Welsh Suspensory bill as a measure involving the most serious possible consequences, because it was avowedly the first step toward disestablishment, and as furnishing an occasion on which the whole Church should speak. He proposed that meetings be held, which should speak clearly the opinions of the sections of the Church, and following them a meeting together—for the first time in their history—of the Convocations of York and Canterbury, with the Houses of Laymen; besides them the churchwardens of all England and Wales, and ten laymen elected from each archdeaconry; the meeting to be held about Whitsuntide, and questions of politics to be avoided in all the proceedings.

At the meeting in May petitions from lay members of the Church of England were read, urging the importance of placing in a succinct form before Church people a statement of the spiritual and educational wants of the country. The Bishop of London suggested that if anything was to be done in the matter, it should be by procuring the insertion of a general statement in the official yearbook. The following report was presented concerning the fasting reception of the holy communion:

(1) That in the apostolic age the holy communion was administered in connection with the gathering together of Christians to share in an appointed evening meal. (2) That the practice of communicating in the early morning appears to have arisen about the close of the first century, probably in order to secure a safer as well as a more reverent celebration, and by the time of St. Cyprian to have become so fully established that it was regarded not only as the preferable but as the proper practice, and as commemorative of the Lord's resurrection. (3)

That the practice of communicating in the early morning, together with the common association of fasting with prayer, led to the practice of communicating only when fasting, and that fasting reception of the communion became the regular and recognized usage of the Church before the end of the fourth century. (4) That from the close of the fourth century this regular and recognized usage was formulated in rules for the clergy in canons of local and provincial councils. (5) That fasting reception of the communion was the prescribed rule of the Church of England during the Anglo-Saxon period, and continued to be so to the time of the Reformation. (6) That these strict rules were nevertheless subject to relaxation in cases of sickness or other necessity. (7) That at the Reformation the Church of England, in accordance with the principle of liberty laid down in Article XXXIV, ceased to require the communion to be received fasting, though the practice was observed by many as a reverent and ancient custom, and as such is commended by several of her eminent writers and divines down to the present time. (8) That, regard being had to the practice of the apostolic Church in this matter, to teach that it is a sin to communicate otherwise than fasting is contrary to the teaching and spirit of the Church of England.

A report was adopted upon evening communion in the following terms:

(1) That in the apostolic age the holy communion was administered in connection with the gathering together of Christians to share in an appointed evening meal. (2) That the celebration of the holy communion in the evening was thus apparently the practice of the Church during a large part, at least, of the first century. (3) That about the close of the first century the celebration of the holy communion is found separated from the agape or appointed evening meal, and transferred to an early hour in the morning; and, except on certain special occasions, evening celebrations of the holy communion ceased in course of time throughout the Church. (4) That at the Reformation the Church of England made no express regulation concerning the hour of celebrating the holy communion, the only apparent rule being that it should be celebrated in the earlier portion of the day and in connection with matins. (5) That evening communion was introduced into the Church of England in the present century on account of alleged necessity, it being maintained that many would not be able to receive the holy communion unless it were occasionally administered in the evening. (6) That, regard being had to the continuous custom of the Church, as well as to the necessity now alleged to exist, it is the bounden duty of every one who publicly administers the holy communion in the evening to assure himself of the reality of the need in the parish where he is appointed to serve.

A report from the committee appointed to consider the distress prevalent among a large number of the clergy showed that to raise the income of all to £200 a year would require, at the average of £50 a year for each, an income of £210,000, or a capital sum of £7,000,000. To raise this capital sum at once would not be possible, nor perhaps to raise the income and continue to raise it for some time to come; but it ought not to be impossible to raise £100,000 a year. The report suggested that one half of this sum should be raised as a general fund, and the other half as diocesan funds and proposed plans for raising and administering the funds. The lower house voted a protest against any attack upon the *status* or emoluments of the Church of England as "entirely unjustified by any lack of zeal or devotion to its work by the

sources from which its endowments have been received, or by any other cause"; and expressed "its deep sense of the cruelty and injustice of the Established Church (Wales) bill, as its inevitable effect would be to cripple the Church's power of usefulness, or most unfairly to interfere with efforts for its extension." Resolutions were adopted declaring the importance of a clearer definition of the relations between elementary and secondary education:

That in arranging a more complete system of secondary education it was essential that the voluntary principle should have free scope; that any attempt to inaugurate a system of secondary education on the principles that have been acted upon in Wales was very much to be deprecated; that the Church, as well as every other religious body, has a right to claim that her children shall be properly instructed in the principles of their faith; and that Churchmen be earnestly invited to watch and oppose all endeavors to alienate local Church education endowments from their original intention.

The Houses of Convocation met again July 4. In the upper house the Committee on Ecclesiastical Fees reported that the question had been found so complicated that it was impossible to make any recommendations at the present time. The joint committee of both houses on the Sunday opening of museums reported resolutions:

1. That this house desires again to press upon the clergy the duty of warning the rich and leisured classes against the increasing misuse of Sunday for purposes of mere amusement, as (a) tending to impair both for themselves and others the sacred character and distinctive value of the Lord's Day, and (b) involving addition to the Sunday labor of those who are called upon to minister to such amusement. 2. That it is the duty of the Church to remind the people of England that the foremost privilege of the Lord's Day is the privilege and responsibility of worship, and that this must be safeguarded at whatever cost. 3. That since it is evident that an increasing number of persons, for whom Sunday is the only day of leisure, find the reasonable use of libraries, picture galleries and museums on that day to be wholesome and profitable, it is necessary, in the highest interest both of visitors and attendants, that such Sunday opening should be carefully guarded against unfairness or misuse. 4. That in no circumstances ought any library, institution, gallery, or recreative resort to be permitted to be open on Sundays for payment. 5. That if these conditions are observed, the cause of true religion has, in the opinion of this house, nothing to fear from the reasonable and careful extension of the system of Sunday opening described in the report.

Without passing upon the resolutions, the further consideration of the subject was postponed to the next group of sessions. A petition was presented against the ecclesiastical teaching of some of the clergy, in which was included the statement that

It is generally known that certain clergymen of the Church of England in possession of influence and authority are deliberately undermining, by their teachings and public writings, the faith of this country in the trustworthiness of the Holy Scriptures, and are altogether repudiating the common faith of Christendom.

The lower house adopted, on the subject of religious teaching in public elementary schools, resolutions

That the great progress in popular education is a matter for which the Church has cause to be thankful, the original impulse to which was given chiefly by its members, and the furtherance of which has

been steadily maintained by them; that the system of religious teaching in board schools under the act of 1870 is unsatisfactory in principle, and . . . has been found to be far from satisfactory in working, and requires to be seriously considered and steps taken for its amendment; and that . . . it is important that all pupil teachers in Church voluntary schools should receive definite religious teaching from the clergy of their parishes.

A resolution was adopted as an *articulus cleri* concerning the formulation of a scheme of united action for the preservation of Church schools, and for the proposing of sources from which the requisite funds are to be obtained. The house urged the furtherance of every means calculated to remove the evil of intemperance. The House of Laymen invited the archbishops to confer respecting the formulation of a corporate policy on the question and concerning the provisions of a bill to be introduced into Parliament. The House of Laymen resolved concerning the Sunday opening of museums

That the day of holy rest is a divine institution appointed by God at the beginning as a day for rest and worship; that the observance of Sunday has been an incalculable blessing to all classes of society, especially to working men and women, and this house deprecates every movement which tends to increase Sunday labor or to make the Lord's Day a mere day of amusement, and is of opinion that such public institutions as museums, picture galleries, and libraries should not be opened on Sundays.

**Convocation of York.**—The Convocation of York met Feb. 7, and discussed motions referring to the incomes of the clergy; fees chargeable by registrars and bishop's secretaries, to consider which a committee was appointed; and shorter services.

At a special meeting of the convocation, held March 16, the Church Patronage bill was considered and, certain amendments having been suggested, was approved as amended. A committee was appointed in the lower house to take into consideration the present circumstances and prospects of the Church elementary day schools, and advise whether any action, concerted or otherwise, ought to be taken. Concerning the Welsh Suspensory bill it was resolved

This house affirms and urges that (1) the Church in Wales is the lineal descendant of the ancient British Church known to exist at least as early as the Council of Arles, 314 A.D.; (2) the scheme now before Parliament, as the first step toward disestablishment of the Church in Wales, involves a wholesale desecration of the Church property; (3) Church property is not national, but (almost, if not wholly, without exception) the gift of individuals to the Church for the work of God, and the clergy receive no payment whatsoever from the state or state funds; (4) the voice of the majority of the people in Wales can never make the plunder of property just or right; (5) if carried, the bill will be a national crime, for which it will be difficult to find a parallel in the history of England since England became a nation; (6) this house calls upon every parish and every member of the Church (of whatever political opinion) throughout the country to take active and immediate steps to arouse opposition to the present action of the Government as regards the Church in Wales.

The clergy were admonished by the archbishop to be very careful not to make the movement in this matter a political one.

The House of Laymen met in special session April 4. On the presentation of the report of



the joint Committee on Clerical Incomes, a resolution was adopted recommending the formation of a sustentation fund in each diocese where required, to assist the poor clergy. The house pledged itself to resist by every means in its power "the measure now before Parliament for the robbery of the Church in Wales," and suggested to the archbishop an organization of the province to prevent the passing into law of any measure "by which endowments of the Church shall be taken from her and devoted to secular purposes." Resolutions were adopted in favor of the Church Patronage bill; promising approval to any well-considered scheme for the increase of the episcopate; and declaring that, as the great majority of pupils in the board schools are the children of Christian parents, "no settlement of the religious question can be acquiesced in which will not guarantee to these children the teaching by Christian teachers of the articles of faith as contained in the Apostles' Creed, and of their duties to God and their neighbors as summed up in the Ten Commandments.

**Missionary Societies.**—The annual meeting of the Church Missionary Society was held in London, May 2. The receipts for the year had been £282,805—larger, with one exception, than in any previous year. The expenditure had exceeded that of any previous year by £5,004, and a deficit was returned of £15,335. The general review of the year embodied in the report showed that of the more than half a million native Protestant Christians in India, 114,000 were at the close of 1891 connected with this society. A real impression had been made in the country at large upon the system of Hinduism, in connection with which the work of the mission colleges, the Anglo-vernacular schools, and the woman missionaries of the zenana societies was gratefully recognized. Mohammedanism also had yielded trophies to the gospel, both in India and the countries under Mohammedan rule. The mission schools in China, Ceylon, and Japan were doing excellent work among Buddhists.

The one hundred and ninety-second annual meeting of the Society for the Propagation of the Gospel in Foreign Parts was held in April, the Archbishop of Canterbury presiding. The gross income of the society for the year had been £127,148—an increase of £10,628. The increased revenue was due in large part to the society's appeals for Mauritius and Newfoundland after the disasters by fire and hurricane in those dioceses.

The society is about to publish a digest of its proceedings, journals, manuscripts, letters, and reports, with a record of all the missionaries it has supported, from the date of its incorporation by royal charter in 1701 to the present time. This work is expected to be of great use in giving the early history not only of the Church in the United States, on which, up to the date of the acknowledgment of independence in 1784, the society spent nearly a quarter of a million of money, but of the foundation of the Church in every colony of the empire. The missionary work in India, as well as in countries outside the limits of the empire, will be recorded at length. The work will be illustrated by portraits of 14 of the archbishops of Canterbury, who have been presidents of the society; of Bishop Seabury, the first bishop in the United States; and of the Rev.

G. Keith, the first missionary sent to America in 1702; and with pictures of many colleges in foreign parts, which the society has helped by endowment or otherwise.

The year's income of the South American Missionary Society was £10,532. The sum of £3,577 had been paid out for chaplaincies, and £3,772 for missions to the heathen. The reserve fund amounted to £3,002. The annual report described the work of the society in the Falkland Islands and various parts of South America. Satisfactory educational progress was reported from Tierra del Fuego, where, however, the native men and women were suffering from the effects of the alcoholic liquors introduced by the white man. Excellent progress had been made among the 2,000,000 heathen Indians of the Paraguayan Chaco, who no longer had to take liquor instead of money in payment for their skins or work, and among whom drunkenness had, therefore, to a large extent been abolished. The Paraguayan Government regarded the mission with the greatest favor. Mr. A. Busk had given the society 1,158 acres of land for mission purposes in that region. In Chili the civil war had left sad traces, and missionary work was carried on in the midst of danger to life and property. The work of this society lies within the diocese of the Bishop of the Falkland Islands, which includes the whole of South America except British Guiana.

The Universities Mission to Central Africa reports that its income for 1892 was £21,483, the largest amount ever received by the society in one year. The sum of £11,200 was also received for endowment of the Nyanza bishopric. The expenditures for the year amounted to £19,835.

The British Syrian Mission, which is described in its annual report as "essentially a women's mission to the women of Syria," comprises a training institution at Beirût for girls who are under contract to teach in the day schools of the mission, and of whom the most promising are often adopted by friends in England. The 39 day schools have 3,500 pupils of various creeds; besides these, schools for the blind are sustained with a staff of Bible women, harem visitors, and Scripture readers. A work was carried on among the soldiers of the army in the Lebanon; and among the most recent developments of the work were evangelistic work among the Bedouin and a small woman's medical mission. The European staff numbered 17 women and 3 men, and there were 99 European and native teachers and 31 Bible women and Scripture readers. The income of the mission was £5,500 a year.

The Society for Promoting Christian Knowledge, which began in 1840 by giving £10,000 to the Council of the Colonial Bishopric's fund "for the endowment of sees in the colonies and dependencies of the British Empire," has up to the present time voted £88,000 toward the increase of the colonial episcopate. It has helped the endowment funds of 17 dioceses in Canada, North America, and the West Indies, of 12 dioceses in Africa, of 7 dioceses in Asia, and of 16 dioceses in Australia and New Zealand.

The total income of the missions to seamen for the year was £35,496, or nearly £5,000 more than that of the previous year. The increase was mainly derived from legacies.

The gross income of the Church Pastoral Aid Society for the year just closed reached nearly £70,000, which is a considerable advance upon all previous years—the highest amount before received in one year being £60,288, in 1864-'65.

The annual report of the Poor Relief Corporation shows that 1,084 appeals were received during the year and 784 grants were made of sums ranging from £5 to £25. The subscriptions amounted to £2,951, against £2,799 in the previous year, and the donations to £5,103, against £4,298.

The report of the Society for Promoting the Employment of Additional Curates gives its income as £87,476, or £121,511, including grants from the Ecclesiastical Commissioners and diocesan and other societies. The shrinkage in receipts was continuing, and the most obvious cause of it was the decrease in clerical incomes. The society had renewed 1,111 grants and made 50 new ones, and the committee wished to put another 50 recommended cases on the list, but had had to decline for lack of sufficient means.

**The Liberation Society.**—The annual meeting of the Society for the Liberation of Religion from State Patronage and Control was held in London, May 3. Mr. Illingsworth, M.P., presided. The year's receipts of the society had been £5,475, and its expenditures £5,066. The report mentioned the choice at the last general election of a larger number of members favorable to disestablishment than had ever sat in a previous Parliament, and referred to several bills before Parliament as favorable to the principle of disestablishment. Resolutions were adopted recognizing the importance of the measures to prevent the creation of new vested interests in Wales and Scotland, prior to the disestablishment of the churches in those countries; expressing satisfaction at the evidences of a majority in the House of Commons in favor of the Suspensory bill for Wales; disapproving the Church Patronage bill; opposing certain acts by the London School Board bearing on religious equality in the schools, and particularly efforts to disturb the existing compromise in regard to reading the Bible in schools, "which had worked satisfactorily for the past twenty-two years."

At a meeting of the council of the Liberation Society, held Nov. 15, 1892, facts were presented showing that at the last election Liberal candidates had been generally found in harmony with the friends of religious equality. Twelve members of the committee of the society had sat in the last Parliament. In the present Parliament were 18 members of the committee, while nearly 100 members of the House of Commons were members of the society. In Wales, 31 out of 34 members elected at the last election were in favor of disestablishment. In Scotland, 48 out of 72 members were pledged to support the disestablishment of the Church in that kingdom—an increase over the previous numbers. The entire Liberal party were pledged to support disestablishment in Wales and Scotland, and the number of members in favor of disestablishment in England was unprecedentedly great.

Resolutions were passed expressing satisfaction at the improved prospects for disestablishment; invoking public support to measures for disestablishment in Wales and Scotland; urging

further amendments in favor of nonconformists, of the burial laws, and the passage of the Places of Worship and Leaseholds of Chapels Enfranchisement bills; and calling for the removal of religious disabilities, the adequate representation in the public offices of all sections of the community, and such legislative and administrative changes in the appointment of magistrates as will remove discriminations against nonconformists.

**The Church Association.**—The report of the Church Association, made at its twenty-eighth annual meeting in May, represented that owing to the legal confusion, as it was described, produced by recent judgments in ecclesiastical cases, the association had abandoned litigation for the present, and had undertaken greater activity in other directions. The scheme of future policy adopted by the conference of October, 1892, included a demand for Church reform, the inevitable though disastrous alternative being disestablishment and disendowment; and a Church reform bill now under consideration would be introduced in due course. The National Protestant League had increased in membership to 6,775, and 19 new leagues had been opened. The general receipts had increased by 30 per cent., and were now £4,962, including a loan of £250 from the guarantee fund. The meeting resolved

That, so long as a large section of the clergy, encouraged by the bishops, were avowedly disloyal to the Protestant religion established by law, abused their trust by introducing sacerdotal teaching into the national schools, and rested the defense of the Church's endowments on the dishonest plea that no serious change of doctrine ever took place at the Reformation, the Protestant laity could not be expected to contribute to the endowments of the national Church, however willing they might be to strengthen the hands of individual clergymen who remained faithful to their engagements.

In a detailed scheme of future policy, issued in October, 1892, the council of this association explained that the outcome of the judgment of the Privy Council in the case of the Bishop of Lincoln imposed on Protestants the duty of witnessing more publicly and systematically than heretofore against the false doctrines embodied and symbolized in a ritual, now for the first time pronounced to be legally permissible in the Reformed Church of England, provided that ceremonial acts be avoided. Church reform was therefore suggested as an aim, "the inevitable, the disastrous alternative being disestablishment." The heads of necessary reform to be insisted on were: (a) The granting of legal redress to the laity, without any hindrance of justice by the episcopal veto; (b) the fusion of the ecclesiastical courts into the High Court of Justice, or the assimilation of their procedure to that of the civil courts; (c) the substitution of deprivation for imprisonment in the case of contumacious clergymen who refuse obedience to the orders of the courts; (d) an ecclesiastical franchise for lay members of the Church, secured and capable of enforcement by law, as in the case of churchwardens; (e) the concession to the laity, "as of right," of an effective share in the administration of Church matters; (f) the power being given to the incumbent, or to any churchwarden of the parish, to remove without a faculty any ornament or addition which may have been



illegally introduced into a Church. The scheme then proceeds to recommend in detail future action in regard to organization, mission work, parliamentary work, use of the press and of publications, and individual activity.

**Church Defense Institution.**—The annual meeting of the Church Defense Institution was held in London, July 5. The annual report remarked upon the eventful period which Church and state had passed through since the last annual meeting, reviewed the steps that had been taken to agitate against the Welsh Suspensory bill, and expressed thankfulness for many signs of Church progress which had been witnessed during the year. The Institution had issued more than two million copies of publications, including 100,000 copies of the letters sent to the "Times" by Earl Grey, Dean Vaughan, and Mr. Bosworth Smith. Its receipts had been £8,444. Resolutions were adopted recognizing the enthusiasm shown by Churchmen, without distinction of party, as displayed in public meetings to resist "the Government attack" upon the endowments of the Church and in the Archbishop of Canterbury's meeting of May 16, and pledging continued energy in the same direction.

A small body of clergymen withdrew from the Established Church in the latter months of 1892, with the intention of forming a sect on strictly evangelical lines. They prepared an appeal to Protestants in which the question of ritualism was dealt with at length. A prayer book completely revised on Protestant lines was contemplated; and some of the existing religious communities external to the Established Church were expected to supply episcopal organization.

At the instance of the Central Committee of the Union of Clerical and Lay Associations, a company has been formed with the title of "The Church of England Evangelical College and School Committee (Limited)," in order to promote institutions in which, together with a general education, instruction shall be given in accordance with the evangelical principles of the Church of England.

**Free and Open Churches.**—The twenty-seventh annual meeting of the Incorporated Free and Open Church Association was held March 16. Earl Nelson presided. The report spoke of the increased public interest taken in the movement for free churches, and reviewed the history of its growth during the past fifty years. During the first half of the century pew rents flourished, especially in large towns. Pews were considered an effective mode of raising a stipend for the minister. Now, though somewhat tardily, pew rents had been found to be out of harmony with the spirit of the age. They had ceased to be a certain means of income, and in many cases had failed to provide any income worthy of the name. The decadence of pew rents was, however, not synonymous with a collapse of the pew system. The old private pew and the old exclusiveness had disappeared, but the appropriated churches remained. There was never more reason than to-day to preach true religious equality. A special fund had been started in aid of the movement, toward which, as a nucleus, the council had set aside one tenth of their income.

The eight hundredth anniversary of the

consecration of Winchester Cathedral, which it is recorded was dedicated April 8, 1093, was celebrated April 8 and 9 by a series of musical services.

**Legal Questions.**—The first sentence under the Clergy Discipline act, 1892, was pronounced by the Bishop of Rochester, in the Consistorial Court of the Diocese, upon the Rev. Alfred Edward Ormonde Harris, vicar of the parish of Stoke, who had been convicted of being intoxicated on divers occasions while conducting public service. After an address on the heinousness of the offense of the defendant, a "definite sentence and final decree" was pronounced and signed in due legal form, depriving him of "all his ecclesiastical promotions within the diocese of Rochester."

The court of the General Synod of the Church of Ireland gave judgment, Nov. 18, 1892, in an appeal lodged in behalf of Col. Fox Grant against a decision of the Dublin Diocesan Court dismissing a petition that the existence of a "cross on or immediately behind the communion table" in St. Bartholomew's Church should be declared an offense against the ecclesiastical laws, and a violation of the canons of the Church. The cross was erected in a wooden stand, the top of which was level with the communion rail, and was placed between the rail and the reredos. The petition complained that it appeared to the congregation to stand on the table, or to be connected with it. The court reversed the decision of the court below, and adjudged that the gilt cross mentioned in the petition was, in the position in which it stood, a violation of the constitution and canons of the Church of Ireland, and that each party should pay his own costs in the appeal.

**Episcopal Church in Japan.**—A memorandum regarding the Episcopal Church in Japan, signed by Bishop Hare, of the Protestant Episcopal Church, and Bishop Bickersteth, of the Church of England, sets forth that the Church should be presented to the Japanese in its composite form, as exhibited in its English and American branches, rather than in the specific form in which it would be represented by either branch alone. The work of foreign bishops is regarded as provisional. The whole state of thought and feeling among the Japanese forbids the introduction into Japan, as permanent institutions, of branches of either the English or the American Church, and nothing would offend the national feeling and hinder the extension of the Church more than giving the Japanese just cause for suspecting a desire or intention to impose upon them a permanent foreign episcopate. Every wise principle of propagating the gospel in Japan demands that the work of the bishops should be regarded as that of so directing the missions of the American and English Churches that a Japanese independent and self-supporting Church shall be the result. Indeed, these churches have so far committed themselves to this policy that a Japanese Church with its own constitution and canons has been in existence for four years. The English and American bishops are not regarded by the Japanese, and should not be regarded by us, as having jurisdiction over dioceses fully delimited, but rather as forerunners in the episcopate of Japanese bishops who will exercise jurisdiction over such permanently de-

finer dioceses as the expansion of the Japanese Church may in future demand. Reasons consistent with these considerations are given in the paper why both episcopal residences should for the present be in Tokio, with delimitations of the boundaries of their jurisdictions.

**The General Synod of Canada.**—The Anglican Church in Canada comprises the ecclesiastical provinces of Canada, consisting of the nine dioceses of Nova Scotia, Fredericton (New Brunswick), Quebec, Montreal, Ontario, Toronto, Niagara, Huron, and Algoma; and the province of Rupert's Land, in which are included the seven dioceses of Athabasca, Mackenzie River, Selkirk, Moosonee, Qu'Appelle, Saskatchewan, and Calgary; with the three unattached dioceses of British Columbia, Caledonia, and New Westminster. The subject of consolidating these provinces and unattached dioceses into a single jurisdiction has been under discussion for several years. At a conference of delegates from the various dioceses held at Winnipeg in September, 1892, a scheme of union or conference was drawn up, which, having been submitted to the provincial and diocesan synods, was approved by them with several amendments. In pursuance of arrangements made at this conference, the delegates to the proposed general synod—including 14 of the 19 bishops and about 80 other representatives—met in Toronto, Sept. 13. After discussion a report was adopted declaring the assembly to be the first general synod of the Church in Canada, to continue an integral portion of the great Anglican Communion, holding and maintaining the doctrine and sacraments of Christ and the order and government of the Church as set forth in Holy Writ, the Book of Common Prayer, the Psalms of David, and the Thirty-Nine Articles of Religion. The General Synod, exclusive of Newfoundland, is to consist of two houses, the House of Bishops and that of the Clergy and Laity. The president of the general synod shall be styled the primate, and shall be selected by the House of Bishops from among the metropolitans and the bishops of dioceses not in ecclesiastical provinces. Further declarations were adopted "that the General Synod when formed does not intend to and shall not take away from or interfere with any rights, powers, or jurisdiction of any ecclesiastical synod within its own territorial limits as now held or exercised by such diocesan synod"; and "that the constitution of a general synod involves no change in the existing system of provincial synods, but the retention or abolition of provincial synods is left to be dealt with according to the requirements of the various provinces as to such provinces and the dioceses therein may seem proper." It was ordered that delegates shall be residents of the dioceses from which they are elected or appointed, provided that certain dioceses in the northwest may for a time, under certain conditions, appoint others. The synod insisted on the necessity of religious teaching in the public schools, and adopted the "Lambeth Conference Articles" "as a basis for negotiation with any of our separated Christian brethren with a view to union." The lower house requested the bishops to bring the burial service into harmony with the Canadian climate, the present procedure at the graveside being condemned as leading to many deaths

from exposure. The title of Archbishop was given to each of the metropolitans, and the Metropolitan of Rupert's Land—Bishop Machray—was appointed primate of the Dominion and president of the synod.

**The Church Congress.**—The Church Congress met at Birmingham, Oct. 3. The Bishop of Worcester presided, and gave prominent attention in his opening address to the relations of workingmen with the Church. The present was the first meeting of the Congress in that important industrial center, and it was more than any other one a workingmen's congress. For the first time workingmen had been placed on the Subjects Committee—had been invited to choose the subjects for discussion at the workingmen's meetings—and a special effort had been made to enlist their sympathies by Sunday-afternoon meetings in the town hall. The regular proceedings opened with a discussion of the subject of "The Increase of the Episcopate," with special reference to the needs of the diocese of Worcester and the city of Birmingham, in which the principal speakers were Wilfred de Winton, J. D. Goodman, and the Archbishop of Canterbury. In a discussion on education the Dean of St. Asaph considered religious education under the three heads of "The Study of the Holy Scriptures," "The Doctrines of the Church of England," and "Church History"; the Hon. and Rev. E. Littleton, of Haileybury School, spoke on "Education in Secondary and Public Schools and Education in the Home"; and the subject was continued by the Rev. J. Percival, Head Master of Eton School. Papers on "Church Services and Symbolism" regarded the position of the holy communion in worship, and "Symbolism, its Use and Abuse," and were presented by Viscount Halifax, President of the English Church Union; Sir R. Lighton, the Dean of Winchester, Archdeacon Farrar, and Canon Venables. The papers on the subject of "Preaching and a Preaching Order" were mainly pleas for the establishment of a preaching order. "The Relative Duties of Employers and Employed, and of the Clergy toward both," was the subject of an extended discussion by A. M. Chance, of Birmingham, Sir William E. Houldsworth, M. P., Archdeacon Wilson, of Manchester, and several other speakers. The relations of the Church of England with the Church in Ireland were described by the Right Hon. R. Warren, of Dublin; with the Episcopal Church in Scotland, by the Bishop of Edinburgh; with the Church in the colonies, by the Rev. Morris Fuller and Sir Arthur Hodgson; and with the American Church, by the Bishop of Minnesota. The subject of the Church of England in relation to other bodies of Christians included the topics "Lines and Limits of United Action with Christians outside our own Communion" and "Proposals for Corporate Reunion." The speakers were G. W. Child, of Oxford, the Rev. Charles Gore, the Archbishop of Dublin, and the Bishop of Edinburgh. The subject of "Science and Faith" was discussed by Sir George Stokes, the Bishop of Peterborough, and T. Lauder Brunton. On the subject of "The Church and the Poor," Mr. Lyttleton Gell, one of the founders of Toynbee Hall, the Rev. F. A. Winnington-Ingram, and Mr. Edward Clifford, honorary evangelistic sec-



retary of the Church Army, made the principal addresses. The subject of "Foreign Missions" was discussed under the heads of (1) evangelization of the heathen, variety of methods, and (2) the duty of Christian states toward native races with regard to the regulation or support of or interference with missions and trade, by the Rev. A. T. Wirgman, the Rev. R. L. Page, and Bishop Bickersteth, of Japan. On the subject of "The Ministry of the Laity, Diocesan and Lay Readers, Deaconesses and Sisters, Lectors and Catechists," the opening paper was read by the Bishop of Lichfield, and the Dean of Lincoln read a paper on "Deaconesses and Sisterhoods." Pertaining to the subject of Christian and devotional life, papers were read on "The Christian in Home Life," by the Bishop of Hull (Dr. Blunt); "Spiritual Power, its Source and Operations, its Imperative Need for the Church at Large, as well as for the Individual Christian Life," by the Dean of Bristol; "Quietness," by Archdeacon Perrowne; "Proportion," by Canon Newbolt; and "Religion in Social Life," by Prebendary Webb-Peploe. "The Relations between the Church and the Press" were discussed by J. T. Bruce, editor of the "Birmingham Daily Post," the Rev. Edmund McClure, of the Society for Promoting Christian Knowledge, the Rev. A. R. Buckland, editor of "The Record," the Rev. J. E. C. Weldon, and other speakers. In the discussion of the question of "The Disposal of the Dead," the friends of cremation were represented by Dr. A. B. Hill, of Mason College, Birmingham, the Rev. Brooke Lambert, and Sir Douglas Galton; and the advocates of earth to earth burial, by F. Seymour Haden and G. V. Poore, of University College, London. Other subjects considered were "The Parish Councils Bill," "Lord's Day Observance," "Home Missions," and "The Financial Condition of the Clergy," including the inadequate provision for the clergy, its present effects and ultimate consequences, and the suggestion of remedies in the shape of (1) the duty of the clergy toward one another and (2) the duty of the laity toward the clergy. The subjects of "Licensing Reform" and the "Connection of Church and State" were discussed at the workmen's meetings.

**ARGENTINE REPUBLIC,** a federal republic in South America. Under the Constitution of May 15, 1853, the republic bore the name of the United Provinces of the Rio de la Plata. In 1860 Buenos Ayres came into the federation, when the Constitution was modified and the present name adopted. The Constitution is modeled closely after that of the United States. The executive head of the State is a President, elected for six years by representatives of the 14 provinces. The legislative authority is vested in a Congress consisting of a Senate and a House of Deputies. The Senate has 30 members, 2 specially elected from the capital, and 2 from each of the provinces, chosen by the respective Legislatures. The Senatorial term of office is nine years, and Senators must have an annual income of \$2,000. The House of Deputies consists of 86 members, elected directly by the people for a term of four years. The Vice-President presides over the Senate. One third of the Senate is renewed every three years, and one half of the House every two years. The ses-

sions of Congress are from May to Sept. 30 of every year. The President is commander in chief of the armies, and appoints all civil, military, and judicial officers. Each province has its own legislature, and a governor elected by the people, who is invested with extensive powers, independent of the central executive. In the election of April 10, 1892, Luis Saenz Peña was chosen President, and Z. S. Urriburu Vice-President, and they entered upon their term of office Oct. 12, 1892. The ministry in the beginning of 1893 was constituted as follows: Minister of the Interior, Dr. M. Quintana; Minister of Foreign Affairs, Dr. T. Anchorena; Minister of Finance, Dr. J. J. Romero; Minister of Justice, Public Instruction, and Worship, Dr. C. S. de la Torre; Minister of War and Marine, Gen. B. Victorica.

**Area and Population.**—The area of the Argentine Republic, including the territories and Patagonia, is estimated at 1,125,086 square miles. The population was estimated at the end of 1888, at 3,793,800. In 1891, 73,597 emigrants arrived in the country, of whom 28,266 landed in Buenos Ayres. Of these, 15,511 were Italians, 4,290 Spaniards, 2,915 Frenchmen, and 832 Germans. Buenos Ayres, the Federal capital, had a population of 543,065 on July 31, 1892.

**Finance.**—The budget for 1893 estimated the total revenue at \$91,100,000, of which \$55,000,000 were derived from import duties, \$8,250,000 from export duties, \$4,020,000 from storage, etc., \$4,000,000 from stamps, \$12,150,000 from excise duties, \$3,500,000 from the post-office, and \$4,180,000 from various other sources. The expenditures were estimated at \$75,100,000, of which \$31,100,000 were for the public debt, \$13,830,000 for the Ministry of the Interior, \$980,000 for the Ministry of Foreign Affairs, \$3,905,000 for the Ministry of Finance, \$7,345,000 for Public Instruction, \$11,640,000 for the Ministry of War, and \$6,300,000 for the Ministry of Marine.

The public debt, according to an official report, amounted to \$302,407,748 gold, and \$63,107,950 currency on March 31, 1892. Of this sum, \$204,953,909 gold represent the external debt, \$89,406,641 gold, and \$43,993,089 currency the internal debt, \$8,042,198 gold and \$10,614,861 currency the floating debt, and \$8,500,000 currency minor issue. The property belonging to the National Government is valued at \$703,793,172. The report for 1892 of the British Vice-Consul at Buenos Ayres places the total debt much higher than the official statement, his figures being £105,124,978, or over £25 per inhabitant. The United States consul, in his report for the same year, says it is difficult to know what the figures are, owing to the wide discrepancy between the statements of the officials.

**The Army and Navy.**—The regular army consists of 1,590 officers, and 6,498 men. The militia numbers 236,000 men.

The navy consists of 1 sea-going armor-clad, 2 ironclad monitors, 2 deck-protected cruisers, 7 gunboats, 2 transports, 7 dispatch boats, 1 torpedo school ship, 4 steel torpedo boats, and 4 spar torpedo boats. In July, 1892, was launched at Elswick, England, the "Nueve de Julio," a steel cruiser, 350 feet long, of 16½ feet draught, a displacement of 3,500 tons, 14,500 horse-

power, and a speed of 22½ knots. Her armament consists of 4 6-inch and 8 4½-inch breechloading rifles, 12 3-pounder, and 12 1-pounder rapid-firing guns, 2 machine guns, and 5 torpedo tubes. The navy is manned by 1,530 officers and men.

**Commerce.**—The total value of the imports of merchandise in 1891 was \$67,165,807 in gold, and the total exports amounted to \$96,703,325. The imports of textiles and apparel amounted to \$17,176,059; food substances, \$8,223,265; iron and manufactures thereof, \$4,508,825; drink and alcohol, \$3,687,195; wood and manufactures thereof, \$2,359,567; railroad, telegraph, and other material, \$17,869,199; coal, coke, oil, etc., \$4,139,441; chemicals, \$2,414,608; pottery, glass, etc., \$1,202,290. Of the exports, animals and animal products were valued at \$58,484,484; agricultural produce, \$21,267,314; manufactured products, \$9,754,664; forest produce, \$2,145,510; minerals, \$1,287,594. The following table shows the value of the trade with different countries in 1891:

COUNTRIES.	Imports.	Exports to
Great Britain.....	\$28,317,302	\$14,797,740
France.....	7,925,041	23,681,722
Belgium.....	6,475,951	16,644,689
Germany.....	6,204,889	11,484,228
Brazil.....	1,498,259	9,087,432
United States.....	3,446,691	4,195,966
Italy.....	4,205,165	3,246,980
Uruguay.....	2,549,225	4,502,845
Chili.....	15,804	4,372,343
Spain.....	1,567,975	1,288,359
Paraguay.....	1,340,012	450,471

The first six months of 1892 showed an increase over the same period in 1891 of \$4,500,000 in imports, and \$4,000,000 in exports, indicating a gradual recovery from the crisis of 1890-'91.

**Navigation.**—During 1891 were entered at the ports of the Argentine Republic 3,496 sailing vessels, of 697,517 tons, and 7,369 steamers, of 4,577,575 tons, and were cleared 2,643 sailing vessels, of 62,108 tons, and 6,547 steamers, of 4,052,759 tons.

**Communications.**—The total length of railroads open for traffic in 1892 was 7,676 miles. Concessions were granted for 3,170 miles more, of which a part is under construction.

The length of telegraph lines in 1891 was 20,415 miles, of which 11,250 miles belong to the Government, 8,050 miles to railroad companies, and 1,115 miles to cable companies. The postal correspondence of the country has increased in five years over 300 per cent., and as to the amount per inhabitant it stands high even in comparison with European countries.

**Boundary Treaty with Chili.**—A protocol providing for the settlement of the difference between the two countries regarding the international boundary was negotiated with Chili at Santiago by Dr. Villarosa, acting as a special commissioner. It was signed on May 2, 1893, and ratified in September. By its terms Chili is to claim no territory east of the Andes, and the Argentine Republic abandons its claim to a port on the Pacific coast.

**Jewish Colony.**—Pursuant to Baron Hirsch's scheme for founding colonies of Russian Jews in the republic, large tracts of land were purchased at a very low price with the depreciated currency, and a colony has been founded about nine

miles from Palacios station, on the Buenos Ayres and Rosario Railroad. The colony, which has been named Moises Ville, received its first settlers early in 1891, the party consisting entirely of Russian Jews, and numbering 220 people, including women and children. In this tract there are 180 lots, of 100 hectares, divided into concessions of 25 hectares. Of 2,850 Jews, principally from Russia, who arrived during the year, 462 have been settled in this colony. The concessions are allotted on six years' time to purchase at the price of about \$350. Interest at 5 per cent. will be charged after the first crop has been raised and marketed. Food, implements, cattle, seed, etc., are allotted to the colonists on the same terms as the land. The affairs of the colony are administered by a committee of four. About 90 adobe dwellings, with thatched roofs and earthen floors, have been built. The language is Russian and German, though many of the colonists speak Spanish, and nearly all understand it. They preserve their traditional habits, and their rabbi has much influence over them. Some have proved unfit for the work and have been returned to Europe, others taking their places. A synagogue, schools, and various other improvements are projected.

**Revolutionary Movements.**—The administration of President Luis Saenz Peña has been a troubled one from the beginning. Nominated by a coalition between that wing of the National party which adhered to Gen. Roca, as against the wing headed by Dr. Roque Saenz Peña, and that portion of the Union Civica led by Gen. Mitre, as against the Radical wing led by Dr. Alem, Dr. Luis Saenz Peña was elected through a violent suppression of the Radical vote, caused by the arrest and imprisonment of the Radical leaders, under a state of siege decreed by the Pelligrini Government on the eve of the election. The Radicals, thus disfranchised, looked to revolutionary methods for redress, and began to lay plans for revolts in the different provinces, their apparent object being to secure control of the provincial governments and force President Saenz Peña to resign. They did not contemplate an overthrow of the republic or the secession of any province therefrom. From the manner of his elevation to the office it was expected that Dr. Saenz Peña would govern with a coalition of the Roca and Mitre parties; but it was observed, soon after his inauguration, in October, 1892, that the new President, presumably influenced by his son, Dr. Roque Saenz Peña, showed a disposition to ignore Gen. Roca and his friends and to govern with the Mitre party and the adherents of Roque Saenz Peña, and a war of political intrigue was thus begun. A revolution was started in Santiago del Estro, where followers of Gen. Roca were turned out and adherents of Roque Saenz Peña installed in their places. This was a direct attack upon Gen. Roca. He was a member of the national Senate, had been President of the republic, and was probably capable of commanding more influence than any other man in the country. His support would have been a tower of strength to the Executive, but thenceforth he held himself aloof from the Administration. Differences arose in the Cabinet within two months after



Saenz Peña entered office, and a dissolution was narrowly averted in December, 1892. Meantime an insurrection against the provincial government broke out in the province of Corrientes, and the President dispatched Señor Avellaneda as a special envoy to restore peace. Early in January, 1893, a difference arose in the Cabinet respecting this action and the general policy of the Government in intervening without the express authority of Congress in the internal affairs of the provinces. On Jan. 9 it was announced that the insurgents had taken the city of Caseros and made an attack, 5,000 strong, upon the army of the Governor of Corrientes at Santa Lucia, and the Government on the following day dispatched 2 gunboats with troops and artillery to be placed at the service of the special envoy. Thus supported, Señor Avellaneda stopped the fighting at Santa Lucia, took command of the provincial forces, and succeeded in a short time in effecting disarmament on both sides. This disarmament, however, did not restore quiet in the province. Personal encounters, robbery, sacking, and other acts of violence were of daily occurrence. At this time Dr. Alem, the chief of the Radical leaders, who had been seized and imprisoned pending the presidential election, publicly announced that the sympathy of the Radical party was with the revolution, and a numerously signed *pronunciamiento* was issued from Corrientes, urging the citizens of Buenos Ayres to join in the insurrection. On Jan. 22 a mass meeting of 5,000 citizens of Buenos Ayres passed resolutions condemning the intervention of the President and Cabinet in Corrientes. On Feb. 8 Dr. Wenceslao Escalante, President of the National Mortgage Bank, decided to accept the Ministry of the Interior, which had been made vacant several weeks before by the resignation of Dr. Quintana. Dr. Escalante coupled his acceptance with the condition that the Federal forces should be withdrawn from Corrientes, leaving affairs there to be dealt with by the provincial authority. Early in February several thousand colonists of the province of Santa Fé took up arms in protest against the imposition of a new wheat tax, and the governor sent troops and artillery to quell the movement. Upon rumors that a revolution was about to begin in Buenos Ayres, President Saenz Peña called out the military and held them in readiness to suppress the threatened outbreak, and on Feb. 3 a decree was signed, mobilizing the National Guard and forming fresh lists. On March 23 Dr. de la Torre resigned the Ministry of Justice, and Dr. Amancio Alcorta accepted the portfolio. Early in April a revolt in the province of Catamarca began to assume serious proportions, the insurgents having captured the railroads. On April 30 Dr. Anchorena resigned the Ministry of Foreign Affairs because of the approval by his colleagues of the alteration of the boundary protocol with Chili. On the opening of Congress, May 13, the President transmitted his annual message to that body. It was fairly cheerful in its allusions to internal affairs, and represented the financial condition of the country as improving. But ministerial crises began almost immediately, and on June 7 the entire Cabinet resigned, the President having sent communica-

tions to the different ministers intimating that he desired their retirement, as he had decided upon a change of policy.

**New Ministries.**—On June 8 a new Cabinet was formed as follows: Minister of the Interior, Dr. Wenceslao Escalante; Minister of Foreign Affairs, Miguel Cane; Minister of Finance, Dr. Avellaneda; Minister of Justice, Public Instruction, and Worship, Dr. Amancio Alcorta; Minister of War, Gen. Viejobueno. Escalante and Alcorta retained the portfolios held by them in the old Cabinet. Dr. Avellaneda had acted as special envoy in Corrientes. It was a fusion Cabinet, by which the President hoped to gain the confidence of all parties. It failed, however, to accomplish this object. Gen. Roca and Gen. Mitre both publicly expressed their dissatisfaction, while the Radicals were not in the least placated. The new ministry enjoyed but a brief existence. Within a week Dr. Escalante resigned the Ministry of the Interior, owing to the opposition raised by his reply in Congress to an interpellation regarding the insurrection in Catamarca, and his action precipitated a crisis which led to the breaking up of the Cabinet on June 26. A new Cabinet was formed at once, but finding it impossible to carry on the Government of the country, the members offered their resignations to the President, July 1. The President summoned Gens. Roca and Mitre and Dr. Pellegrini, his immediate predecessor in the presidential office, to advise regarding the situation. No agreement was reached, as the councilors could not agree, and the crisis continued until July 3, when the whole ministry sent in its resignation. Then the President, finding it impossible to form a Cabinet of members belonging to the moderate parties, as a last resort offered the Government to the Radicals. This offer the Radicals promptly declined, and Aristobulo del Valle, one of the Radical leaders in the Union Civica, when it overthrew the Celman Government in 1890, was intrusted with the formation of a new Cabinet. On July 6 the result was announced as follows: Minister of the Interior, Lucio Lopez; Minister of Foreign Affairs, Valentin Virasoro; Minister of Finance, Marano Demaria; Minister of Justice, Public Instruction, and Worship, Enrique Quintana; Minister of War, Aristobulo del Valle. It was essentially a Radical Cabinet. The Nationalists, however, had a majority in Congress, and most of the provincial governments were controlled by them. The time had come for the long-contemplated Radical revolution to begin in earnest. On July 20 serious fighting occurred in the province of San Luis, the insurgents attacking the city of San Luis, and capturing the governor and ministry. On the following morning a similar movement was begun in the province of Buenos Ayres, where fighting began simultaneously in 20 different towns, and in the province of Santa Fé, where severe fighting occurred in the city of Rosario, and railroad tracks were torn up and telegraph lines cut. On the same day a meeting of Radicals was held in the city of Buenos Ayres, and Dr. Alem issued a manifesto declaring that the time had come to reconquer the rights and liberties of the people. The Federal Government requested Congress to declare a state of siege in

the provinces of San Luis, Santa Fé, and Buenos Ayres. Dr. Costa, Governor of Buenos Ayres, informed the Government that he needed no Federal support, but the Governor of Santa Fé begged that assistance be sent to him at once. On Aug. 1 Congress rejected the proposal for Federal intervention in the insurrectionary provinces, and Señor del Valle, in a speech from the steps of the Government building, told the people that Congress did not represent the country, and that the Government was resolved to enforce respect for the liberties of the people. The ministry had previously issued a decree ordering "the disarmament of the irregular forces of Dr. Costa, Governor of Buenos Ayres," and this decree the Minister of War was now intrusted to carry out. On Aug. 2 Gen. Roca resigned his seat in the Senate, of which he was president, and announced his intention of retiring to private life. Meantime events were moving rapidly with the revolutionists. Insurrection broke out in the provinces of Salta and Tucuman, fighting was renewed in the province of Corrientes, and the government of San Luis was in the hands of the insurgents. In the province of Santa Fé the governor resigned, the vice-governor, who continued to resist, was captured and shot, and a provisional government was proclaimed by the Radicals. In the province of Buenos Ayres, which was regarded as the decisive battle ground of the revolution, most of the towns were taken without much bloodshed, and the conflict centered around La Plata, the capital city of the province, which the Radicals had invested with an army 8,000 strong. Dr. Costa, the provincial governor, resigned and fled, leaving a farewell message to the Legislature, in which he charged the Federal Government with abetting the revolution and impeding his efforts to restore order. He also denounced Señor del Valle as a dictator and President Saenz Peña as a foolish old man. The Radicals entered La Plata, and, having proclaimed a provisional government, appealed for a truce pending the decision of the national Congress on the question of intervention. Such was the condition of affairs when on Aug. 8 Señor del Valle, with 2 gunboats and 3,000 Federal troops, entered the port of Ensenada, 6 miles from La Plata. Here he effected the disarmament of both the Radical and the Provincial forces. Proceeding thence to La Plata at the head of the national troops, Señor del Valle took over the provisional government, ordered the disarmament of the contending factions, and appointed Dr. Carlos Tejedor, a former Governor of Buenos Ayres, as national arbitrator to restore order in the province. The Radicals claimed recognition for the Government established by them at La Plata; but this was opposed by Congress, and the Cabinet being divided upon the question, a ministerial crisis was precipitated. Señor del Valle, Minister of War, and Señor Demaria, Minister of Finance, resigned ostensibly on account of differences with the national Congress; but actually they were forced out by a combination of the friends of Gens. Mitre and Roca, and their action led to the collapse of the Cabinet. A new Cabinet was formed Aug. 13 as follows: Minister of the Interior, Dr. Manuel Quintana; Minister of Foreign Affairs, Valentin

Virasoro; Minister of Finance, Dr. José A. Terry; Minister of Justice, etc., Eduardo Costa; Minister of War, Gen. Luis Campos. The new ministers were for the most part well known and experienced politicians, and members of the National party or the Union Civica. Señor Virasoro held the portfolio of Foreign Affairs in the preceding Cabinet, Dr. Quintana was Minister of the Interior in the first Cabinet of President Saenz Peña, Señor Costa was Attorney-General and Minister of Foreign Affairs under President Pellegrini, Dr. Terry was a lawyer and Deputy and a director of one of the principal banks in Buenos Ayres, who had not held executive office before, and Gen. Costa had been chief of staff.

**A State of Siege Proclaimed.**—Fighting was renewed at La Plata after the announcement of the new ministry, and continued in all the insurrectionary provinces. On Aug. 15, the Federal Congress, which up to that time had refused to intervene in provincial matters, resolved upon the proclamation of a state of siege throughout the republic, and in favor of Federal intervention in the provinces of Santa Fé and San Luis. The resolute action of the Government did much to restore public confidence. National troops took possession of all the public buildings in La Plata, and the officers of the provisional government set up by the Radicals abandoned the place; Dr. Tejedor, the Government arbitrator in Buenos Ayres, suspended all the legislative, executive, and judicial authorities; several officers of the garrison at La Plata were arrested by order of the Minister of War; and arbitrators with powers similar to those of Dr. Tejedor were sent with troops to San Luis, Santa Fé, and Corrientes to restore order in provinces. But although temporary quiet was restored, the Radicals did not abandon their revolutionary plans. Desultory fighting continued in several of the provinces, and a revolt against the newly elected Governor, Delarosa, occurred in the province of Tucuman, the rebels capturing and occupying the capital city and overturning the Government. Ex-President Carlos Pellegrini, as Federal arbitrator, was sent with a body of troops to quell the rising. Revolts occurred in the provinces of Cordoba and San Juan, and in Santa Fé the rebels captured Rosario, the second city in size and importance in the republic. On Sept. 20 the national troops in Cordoba, Tucuman, and Corrientes were in the mutiny, and it was found that Col. Espina had succeeded in exciting a revolt in the navy and was in possession of two gunboats and the old ironclad "Andes." The President and ministry passed the night at the Government House and a considerable number of Radical leaders and several officers were arrested and taken aboard an ironclad. It was also determined to mobilize the entire National Guard.

**Gen. Roca in Command.**—By Sept. 25 it had become evident that the whole country was convulsed by insurrectionary movements, and that the severest measures of repression would have to be used. The Government invested Gen. Roca with the command of all the troops, and prominent Radicals were ordered to be arrested and imprisoned, wherever found. The Govern-



ment charged Dr. Alem, as a member of the Senate, with suborning the army, and asked Congress to authorize immediate measures against him. Upon assuming command Gen. Roca ordered a vigorous campaign against the insurgents in all the provinces. The jails were soon filled with the Radical leaders. There was no further mutiny among the troops, and the great body of the navy remained loyal to the National Government. The revolting vessels were recaptured. Col. Espina, who was taken prisoner, was tried by court-martial and sentenced to be shot. The force, under Dr. Pellegrini, recaptured Tucuman, and disarmed the forces there, which made but little resistance. The rebels in Santa Fé were defeated after two days of fighting, and the city of Rosario, the headquarters of the revolution, was recaptured on Oct. 1 by Gen. Roca. Dr. Alem was found in Rosario, and, the Senate having ordered his arrest, he was taken to jail with a large number of less prominent leaders of the revolution. On Oct. 3 the Minister of Foreign Affairs advised the Argentine minister to the United States of the surrender of Rosario, and added: "The whole province is now pacified, and the entire country is perfectly quiet. Under these circumstances a great movement of conservative opinion has prevailed, by which the proceedings of the National Government have received the approbation of the people and the army and navy. These have demonstrated their discipline, loyalty, and strength in support of the Constitution and public order."

**ARIZONA**, a Territory of the United States, organized Feb. 24, 1863; area, 113,020 square miles. The population, according to each decennial census, was 9,658 in 1870; 40,440 in 1880; and 59,620 in 1890. Capital, Phenix.

**Government.**—The following were the Territorial officers during the year: Governor, Nathan O. Murphy, Republican, succeeded in April by Lewis C. Hughes, Democrat; Secretary, N. A. Morford, succeeded in June by Charles M. Bruce; Treasurer, William Christy, succeeded in April by James A. Fleming; Auditor, Thomas Hughes, succeeded in May by Howard C. Boone; Attorney-General, William Herring, succeeded in April by Francis J. Heney; Superintendent of Public Instruction, George W. Cheyney, succeeded by F. J. Netherton; Railroad Commissioners, H. B. Lighthizer, E. B. Gage, G. W. Beecher, J. S. O'Brien, succeeded by J. J. O'Brien, Charles Leach, George M. Gage, Reese M. Ling; Chief Justice of the Supreme Court, Henry C. Gooding, succeeded in May by A. C. Baker; Associate Justices, Richard E. Sloan, succeeded in April by Owen T. Rouse, Edward W. Wells, succeeded in April by J. J. Hawkins, Joseph H. Kibbey.

**Finances.**—The following is a statement of the Territorial debt, bonded and floating, exclusive of interest, on Jan. 1, 1893: Old bonds outstanding that can not be funded, \$392,000; new 5-per-cent. bonds issued for the redemption of bonds of 1883, \$202,785; new 5-per-cent. bonds issued for the redemption of floating debt incurred prior to Jan. 1, 1891, \$92,330; floating debt incurred since Jan. 1, 1891, less cash on hand, \$101,400; total debt, \$788,515. Under the recent act of Congress providing for refunding the whole county debt and a portion of the Ter-

ritorial debt, new 5-per-cent. bonds have been issued to the amount of \$1,227,000, of which \$931,885 represents the county debt and \$295,115 the Territorial liability. Although the act of Congress was approved June 25, 1890, the bonds were not finally sold until August, 1892, and the proceeds from their sale were not available until December of the same year, since which time the Treasurer and Auditor have been at work complying with the provisions of the act and adjusting the Territorial finances.

During 1891 and 1892 the Territorial expenditures exceeded the receipts by \$78,013.53. A tax rate of 50 cents on each \$100 of valuation for general fund purposes is needed to conduct the Government on a cash basis, but the present rate established by law is only 35 cents.

**Legislative Session.**—The seventeenth Legislative Assembly convened at Phenix on Feb. 13, and adjourned on April 13. For the purpose of encouraging storage of water for irrigation an act was passed giving the owners of storage reservoirs the right to make use of the natural channels of streams in the Territory for conducting the waters stored in such reservoirs to the place or places where they desire to use them, and the further right to divert such waters from such natural channels at such places as may be most convenient. By another act any person, company, or corporation was authorized to appropriate any of the unappropriated waters or the surplus or flood waters in the Territory for delivery to consumers and for rental, milling, irrigation, mechanical, domestic, stock, or any other beneficial purpose, and to that end was authorized to construct reservoirs, dams, flumes, canals, ditches, and other necessary ways. The first appropriator of water under this act shall always have the better right thereto.

A Territorial reform school for juvenile offenders was established in the county of Cocino. A fund for the erection of buildings is to be obtained from the proceeds of a special tax of one half mill to be levied in each of the years 1893 and 1894. A similar tax of two fifths of a mill is to be levied in each of these years for a normal-school building.

Other acts of the session were as follow:

To regulate and prohibit the carrying of deadly weapons concealed.

Authorizing the boards of supervisors of the several counties to pay bounties for the destruction of lynxes, wild cats, lovas, timber wolves, bears, panthers, and mountain lions.

Requiring witnesses in criminal cases to enter into written recognizances to appear and testify at the trial of the cause.

To provide for keeping barbed-wire fences along the highways in repair.

To punish cruelty to animals.

Requiring owners and operators of irrigating canals to remove from the banks of their canals all cockle-burs and sunflowers growing thereon.

To regulate the practice of dentistry.

Establishing a Territorial museum for the collection and preservation of the archaeological resources and of specimens of the minerals, flora, and fauna of the Territory.

Providing for the inspection and regulating the slaughtering of animals for sale in the Territory.

Establishing a Territorial library.

Providing for the publication of a second volume of reports of decisions of the Territorial Supreme Court.

Enacting a general law for the incorporation of cities, towns, and villages having a population of 500 persons or more.

Revising the law relative to the assessment and collection of taxes.

Providing for annual encampments of the Territorial militia, and perfecting the laws governing the militia.

**Valuations.**—The total assessed valuation of property in the Territory for 1893 was \$28,486,183, an increase of \$563,021 over the valuation of 1891. Included in the assessment are the following items: 3,463,507 acres of land, \$5,198,515.35; improvements thereon, \$1,604,014; city and town lots, \$2,986,591.40; improvements thereon, \$2,642,682.40; 401,812 cattle, \$3,742,936.65; 421,797 sheep, \$847,463.48; 44,342 horses, \$1,072,378.89; 1,807 mules, \$51,050; 1,325 asses, \$13,589.50; 4,005 goats, \$5,553; 6,071 hogs, \$19,286.65; 1,087 miles of railroad, \$5,969,781.26; all other property, £4,332,340.42.

**Education.**—During 1892 there were 275 teachers in the public schools of the Territory, employed on an average six and a half months, at an average salary of \$79.77. The number of children of school age in the Territory was 15,463, of whom 9,997 were enrolled on the school lists. The total amount paid in salaries was \$140,712.21, and the total expenditure for school purposes was \$205,810. In the 214 school districts the total value of school property was \$329,419.49. Among the private schools conducted by religious societies are several Catholic academies and parochial schools. Higher education is represented by the Territorial University, which was opened at Tucson in October, 1891. The value of its grounds, buildings, and equipment is \$90,665. The institution is under the control of a board of regents appointed by the Governor, the Secretary of the Territory and the Superintendent of Public Instruction being *ex-officio* members of the board. Its endowment consists of two separate funds: First, the territorial tax of about \$4,500, to pay interest on bonds pledged to the university, annually levied, available for building and general purposes; second, the college appropriation from the national Congress, increasing annually from \$15,000 to \$19,000 for the year 1893-'94, with provisions for a continued yearly increase of \$1,000 until it becomes \$25,000 annually, restricted to use for salaries and equipment. The enactment establishing the university provides that it shall consist of five departments: First, literature, science, and arts; second, theory and practice and elementary instruction; third, agriculture; fourth, normal instruction; fifth, mineralogy and the school of mines. With adequate provision for instruction in science and literature and in the branches required for thorough training in business methods, as well as in art, this university devotes particular attention to agriculture and mining, the two great industries of Arizona.

**Cattle-raising.**—The completion of two transcontinental railways through northern and southern Arizona in 1880 and 1881 suddenly opened a vast grazing region of unsurpassed excellence, and the opportunity was seized by eager capitalists, both at home and abroad, to invest in the new El Dorado. Thousands of

cattle immediately subsequent to the completion of these lines were imported into the Territory from Mexico and from Utah and Texas. For some years, with virgin pastures, the three and four year old steers were turned off from the ranges in large numbers every autumn soon after the rainy season, and disposed of in the local markets and in California as prime beef, bringing profitable prices, and the business greatly prospered. But as the herds increased the grass supply diminished throughout the Territory to such an extent that it was impossible to mature prime beef on the open ranges, and the cattle owners were forced, at great pecuniary sacrifices in most instances, to sell their steers as feeders to buyers from California, Montana, and Kansas.

The steers from two to five years old, as recently as the spring of 1893, were purchased by thousands and shipped to these States at considerable profit to the middleman, and are there matured for market.

While no accurate data are at hand, it is estimated that over 200,000 head were shipped from Arizona to California, Nevada, Montana, Kansas, Nebraska, and Texas during the year ending June 30, 1893. Severe drought during the last two seasons served to hasten these shipments and greatly add to the number of cattle sent away. But such has been the shrinkage in the value of certain classes of cattle that the price offered for them did not permit their owners to incur the financial risk of relieving their ranges to the extent that was desirable to escape disaster, even though the railroads penetrating the Territory made special rates "for starving cattle." As indicating the loss in this business, it may be noted that the number of cattle assessed in the Territory decreased from 644,209 in 1892 to 491,812 in 1893, and the valuation fell from \$5,047,207 to \$3,742,936.

**Irrigation.**—Probably not more than 10,000 acres are successfully cultivated in the Territory without the aid of irrigation, and these are to be found in the northern part in valleys of high altitude. The extent to which irrigation has been developed and land reclaimed is shown by the following figures:

COUNTIES.	Miles of canals.	Acres served.
Maricopa.....	346	270,000
Yuma.....	123	105,000
Graham.....	202	72,000
Pima.....	55	12,500
Apache.....	125	14,000
Total.....	851	573,500

Of the 346 miles of canals in Maricopa County, 38 miles were constructed during 1892, furnishing 60,000 acres with water. With these canals there are also about 2,000 miles of laterals used for the distribution of the water on the land irrigated. In Yuma County, 24,000 acres of the 105,000 under irrigation were reclaimed during the same year.

**Mining.**—During the past seventeen years Arizona has produced gold, silver, and copper to the value of \$94,293,648. Mining was fairly begun in 1876. In that year \$336,564 worth of silver bullion was produced. The industry rapidly developed, until in 1881 the silver bul-



lion shipped by Wells-Fargo Express Company amounted to \$6,278,893, and the total product of gold, silver, and copper for the following year reached £9,298,267, the highest point ever attained. A rapid decline in the price of silver during the past three years has resulted in closing nearly all the silver mines, reducing the output for last year to \$287,426, while the value of the total product of metals (including copper in ores) shipped for treatment was \$6,782,607. The reduction in the silver output has been in a measure made up by the increased production of copper.

Of the copper companies in the Territory five gave an output for the year of 38,712,507 pounds. During 1893 there has been a marked movement in prospecting and mining for gold, with such favorable results that the total mineral product for the year will probably reach \$6,000,000.

**Forests and Lumber.**—The chief timber region of the Territory is in the northern and central portion of Arizona, and covers an area of about 2,750 square miles. The high mountain ranges of the south and eastern portions of the Territory are also very liberally timbered. Pine wood is generally found at altitudes of 5,000 to 10,000 feet. Below this line the timber is juniper, live oak, mesquite, and palo verde. The two last named supply the fuel of the Territory. It is estimated that the total quantity of pine timber fit for commercial purposes is 10,000,000,000 feet. Nearly all of this is located in the northern and central portions of Arizona, and will be of little service to the southern section until rail communications are completed. At present the lumber for this section is supplied by California and Oregon, at prices varying from \$30 to \$60 per 1,000 feet, the high price being due to cost of transportation. The value of merchantable lumber in the pine forests of the north, where the output ranges from 10,000,000 to 12,000,000 feet annually, runs from \$12 to \$15 a 1,000 feet.

**Church Statistics.**—The strength of the various church organizations in the Territory is as follows:

Methodist Episcopal: Missions, 12; preaching places, 23; preachers, 15; membership, 554; Sunday schools, 20; pupils, 1,098; value of church property, \$45,200.

Methodist Church, South: Churches, 6; preachers, 13; membership, 374; value of church property, \$20,500; Mexican missions, 2; membership, 63; church property, \$3,200.

Presbyterian: Churches, 5; ministers, 8; adherents, 500; enrolled communicants, 280; value of church property, including Indian training school, \$30,000.

Baptist: Churches, 9; preachers, 9; membership, 550; value of church property, \$2,000.

Episcopal: Churches, 5; membership, 320; value of church property, \$18,000.

Catholic: Churches, 9; chapels, 13; resident priests, 9, and a presiding bishop. The number of adherents of this Church is nearly as large as those of all other churches combined. There are two commodious hospitals under the care of the Catholic sisters, who have also charge of two orphan asylums. There is a number of other charitable institutions under the direction of this Church.

Mormons: Churches, 16; members, 8,910, including Sunday-school children. It is estimated that of the members 3,813 are on the Sunday-school roll.

**Petrified Forest.**—In Apache County, in the eastern portion of central Arizona, about 20 miles from Holbrook, a town on the Atlantic and Pacific Railroad is Arizona's petrified forest. The area it occupies is covered by the land grant of the Atlantic and Pacific Railroad, every alternate section of which is reserved by the Government. It is estimated that there are about 10,000 acres in this forest, which consists of huge logs, in some cases six feet in diameter. The ground is nearly all covered by trunks and limbs of petrified trees of every size and color, quantities of which have been shipped to various parts of the world and converted to ornamental uses. Recently persons have been wantonly destroying many of these logs with giant powder, blowing them open in order to obtain crystals that are found in the center.

**Silver Convention.**—A convention of the silver leagues of the Territory was held at Phenix in the latter part of May, at which the silver problem was discussed and resolutions were adopted favoring the free coinage of silver at the ratio of 16 to 1.

**ARKANSAS**, a Southern State, admitted to the Union June 15, 1836; area, 53,850 square miles. The population, according to each decennial census since admission, was 97,574 in 1840; 209,897 in 1850; 435,450 in 1860; 484,471 in 1870; 802,525 in 1880; and 1,128,179 in 1890. Capital, Little Rock.

**Government.**—The following were the State officers during the year: Governor, William M. Fishback, Democrat; Secretary of State, H. B. Armistead; Auditor, C. B. Mills; Treasurer, Richard B. Morrow; Attorney-General, James P. Clarke; Superintendent of Public Instruction, Josiah H. Shinn; Commissioner of Mines, Manufactures, and Agriculture, George M. Chapline, appointed Dec. 13, 1892, to fill the vacancy caused by the death of John D. Adams on Dec. 7, 1892; State Land Commissioner, Charles B. Myers; Chief Justice of the Supreme Court, Sterling R. Cockrill, who resigned in April, and was succeeded by H. G. Bunn, appointed by the Governor May 1; Associate Justices, Burrill B. Battle, Simon P. Hughes, W. W. Mansfield, and Wilson E. Hemingway, who resigned on March 13, and was succeeded by Richard H. Powell, appointed by the Governor May 10.

**Finances.**—The following figures are taken from the latest report of the State Auditor: General revenue fund, balance on Oct. 1, 1890, \$427,571.30; total receipts for the two years succeeding, \$1,109,693.81; total expenditures, \$1,349,524.18; balance on Oct. 1, 1892, \$187,740.93. Common school fund—balance on Oct. 1, 1890, \$263,183.54; total receipts for the two years, \$668,587.07; total expenditures, \$907,774.78; balance on Oct. 1, 1892, \$23,995.83. Permanent school fund—balance on Oct. 1, 1890, \$274,201.82; total receipts for the two years, \$5,253.10; total payments, \$989.46; balance on Oct. 1, 1892, \$278,465.46. Sinking fund—balance on Oct. 1, 1892, \$2,935,282.75; total receipts for the two years, \$1,355,753.22; total payments, \$3,028,306.08; balance on Oct. 1, 1892, \$1,262,729.89. Special sinking fund—balance on Oct. 1, 1890, \$445,775.13; total receipts for the two years, \$258,521.87; total payments, \$690,158.27; balance on Oct. 1, 1892, \$14,138.73. The total

receipts of all funds in the State treasury, including the balances of Oct. 1, 1890, were \$8,589,934.76; the total disbursements were \$6,354,133.27, and the total balances on Oct. 1, 1892, \$2,235,801.49. The bonded State debt on Oct. 1, 1892, as reported by the Auditor, consisted of principal, \$1,931,100; overdue interest, \$2,978,332.50; total, \$4,909,432.50.

After the discovery, in 1891, of the defalcation of ex-Treasurer Woodruff, a rigid investigation was made into the financial operations of the State prior to and during his term, and a surprising condition of affairs has been thereby revealed. In a message to the General Assembly on Feb. 2, 1893, Gov. Fishback states the facts discovered in the following language:

1. The returning board, which investigated the condition of our State treasury more than a year ago, published on Sept. 30, 1891, the humiliating statement that, so far as the books of the Auditor and Treasurer were concerned, it is impossible to learn from them, in their present condition, whether Woodruff's shortage be only about \$55,000, or more than \$138,000. This is true, and, whatever the explanation, it is inexorably disgraceful because it is true.

2. There has recently been offered for payment to the State Treasurer \$3,000 of coupons, which, according to the records, are stolen property. They belong to the State, and are out of her possession, and, as far as any records show, may have been lying in hiding for twenty years past, while many thousands of dollars of others are unaccounted for.

3. There is, according to the Simms report, \$92,530 of interest-bearing scrip, known as Page scrip, missing from the vaults of the treasury, and there may be \$40,000, \$50,000, or even \$100,000 of other fraudulent or stolen evidence of debt out somewhere in the markets of the world still lying in wait for some dishonest treasurer to redeem them; nobody and no record discloses how much, or where.

4. The bond register shows \$11,000 of bonds, which have been redeemed but are missing from the vaults of the treasury. Whether canceled and burned, or again out in the markets of the world, it is impossible for the books or register to tell.

5. The irregularities and complication of the bond register and bookkeeping in the offices of Auditor and Treasurer, originating as early as 1869, preclude the possibility of knowing how much fraudulent or stolen evidences of debt of various kinds are against the State, covertly biding their time, when they will be slipped in and redeemed unawares, just as has been attempted twice within the past few months. This condition of things constitutes a constant menace of robbery of the taxpayers of the State.

**Valuations.**—The latest tabulated statement of the assessed valuation of property in the State covers the years 1890 and 1891. For 1890 the valuation of real estate was \$109,417,158, and of personal property, \$65,320,597; for 1891 real estate was valued at \$113,645,924, and personal estate at \$63,983,050. Included in the valuation of 1890 were the following items: Town and city lots, \$25,463,479; other land, \$71,399,352; 209,445 horses, \$8,995,314; 132,736 mules and asses, \$7,587,304; 1,007,058 cattle, \$6,445,710; 233,081 sheep, \$246,344; 1,330,343 hogs, \$1,562,139. For 1891 the valuation of town and city lots was \$27,785,185; of other land, \$72,976,204; of 208,670 horses assessed, \$8,555,115; of 134,083 mules and asses, \$7,465,338; of 999,030 cattle, \$6,068,413; of 238,779 sheep, \$248,479; of 1,243,488 hogs, \$1,411,076. The rate of taxation for State purposes remains unchanged.

**Legislative Session.**—The regular biennial session of the General Assembly began on Jan. 9, and ended on April 8. An important result of its labors was the passage of an act completely changing the policy of the State toward its convicts. This act places the control of the State Penitentiary in the hands of a board of managers, consisting of the Governor, Secretary of State, and Attorney-General, which is authorized to procure from the present lessees of State convicts a cancellation of their contract at any time before its expiration, provided the terms of cancellation are equitable to the State and do not require any payment to the lessees. The board may also purchase, from the funds at its disposal, any lands, buildings, machinery, live stock, and tools necessary for the use and operation of the Penitentiary, to the end that the largest number of convicts that can be accommodated and made self-supporting may be confined therein. Until the General Assembly shall have made suitable provision for confining all the convicts within the walls, the board is directed to employ the excess at labor outside, either under contract or under the State-account system, as it may deem best; and if it has funds, it may purchase or lease and equip a farm or farms, at which those convicts not suitable for contract labor, and not self-supporting within the walls, may be employed. The system of labor shall be the State-account system, or the contract system, or partly one and partly the other, as the managers shall deem best; but no contract shall be let for any convict labor, if equally remunerative employment can be furnished by the State and worked on State account. No contract shall be made by which the control of the convicts shall pass from the State or its officers; and the State shall never be deprived of the right to direct how its convicts shall be lodged, fed, clothed, guarded, worked, and treated; and the management and discipline of them shall in all cases remain under control of the State and officers employed and paid by the State. The board shall establish within the walls of the Penitentiary such industries as they may deem best, but there shall be such industries established, among others, as will furnish the charitable institutions of the State with articles necessary for such institutions. The officers of such institutions are required to purchase of the Penitentiary articles so manufactured whenever they are in need of such articles, paying therefor the market price. The board is further authorized, if it believes that the venture will be profitable, to open and operate on the State-account system a coal mine on any of the coal lands belonging to the State, the labor to be performed solely by convicts. From such mine all the coal needed for the several State departments and charitable institutions shall be supplied at the market price, the remaining output being sold in open market. No convict shall be worked in any coal mine until he has been examined by the Penitentiary physician and pronounced physically able to perform the labor, and in no case shall any person under eighteen years be so employed. The board may also employ convicts in cutting timber on and clearing and fencing timber lands belonging to the State, the timber so cut being sold for the benefit of the State, and such lands when cleared may be



farmed by the convicts. A tract of land having granite or other building stone therein may be bought and convicts employed in quarrying on the State account. The board shall have full control of all details of management of the Penitentiary, and, in addition to the income now accruing from convict labor, shall have at their disposal the sum of \$30,000 to carry out the provisions of the act. Numerous provisions are made for more humane treatment of convicts. By another act, convicts are made competent witnesses to testify as to the treatment of their fellow-prisoners, the quality of their food, and the sanitary condition of the Penitentiary.

For the protection of miners a law was passed regulating minutely the construction and use of mine equipments, and providing for a State system of mine inspection under the control of a State mine inspector appointed by the Governor.

Exportation of fish and game from the State was forbidden until after April 12, 1901.

A peculiar enactment respecting the settlement of estates provides that when all the heirs and distributees of a deceased intestate are of full age, it shall be lawful for them to sue for and collect all demands and property of the intestate, and to manage and control the estate, without any letter of administration being granted, in all cases where the creditors of such estate consent, or where the heirs or distributees have paid all valid debts and no contingent liabilities are outstanding.

A board of World's Fair directors was created, and the sum of \$15,000 was appropriated for their use, provided the voluntary association known as the Arkansas World's Fair Association should make a gift to the State of the building which it had erected in Chicago out of funds subscribed by its members. This sum was to be borrowed from the Direct Tax fund in the State treasury, and such part thereof is to be repaid by the State as shall be needed to pay all claims presented against this fund during the time specified for presenting such claims.

The sum of \$20,000 was appropriated for the preparation and publication of a new digest of the public statutes of the State, including the acts of the present year.

A new law was passed regulating the taxation of sleeping- and dining-car companies, express companies, and telegraph companies.

An amendment to the State Constitution was proposed giving to the county courts, together with a majority of the justices of the peace of each county, authority to levy a tax not exceeding 3 mills on the dollar, the proceeds of which may be used in the respective counties for making and repairing public roads, building court-houses, jails, bridges, and other internal improvements.

Other acts of the session were as follow :

Making it unlawful to catch, kill, or injure the bird known as prairie chicken for the term of five years from the passage of the act.

Providing that no mortgage or other instrument shall be a lien or incumbrance of any kind on any crop to be planted, unless the crop be planted within twelve months after the execution thereof, but this shall not apply to crops already planted when the instrument is executed.

Allowing surety companies to become sureties on official bonds.

To prevent the killing of fish by the use of dynamite or other explosive material.

To establish one board of trustees for the management of all the charitable institutions of the State.

Making the payment of a poll tax a prerequisite for voting.

To provide for the dissolution of corporations.

To prevent the importation and sale of unwholesome articles of food.

To prevent preferences among the creditors of insolvent corporations.

Establishing that part of the St. Francis basin within the State as a levee district, and incorporating a board of levee directors therefor.

Amending in certain details the law providing pensions for Confederate soldiers.

Requiring the method of reading and designating the survey of lands in the State by sections, parts of sections, townships, and ranges to be taught in the common schools.

Compelling railroad companies to run at least one passenger train each way over their roads in the State on every day, and to make stops at every station where they sell tickets, except at flag stations, where they must stop if signaled.

To cure defective acknowledgments of deeds.

To define who are and who are not fellow-servants.

Providing that when two or more persons are indicted in the same indictment either may testify for or against the other defendant or defendants.

**Education.**—The following public-school statistics for the years ending June 30, 1891, and June 30, 1892, are reported by the State Superintendent of Public Instruction :

ITEMS.	1891.	1892.
Children of school age, white.....	306,890	307,781
Children of school age, colored....	112,176	114,471
Number enrolled, white.....	178,289	187,261
Number enrolled, colored.....	68,880	64,191
Average attendance, both races...	128,625	140,445
Teachers employed, male.....	3,557	3,990
Teachers employed, female.....	1,888	1,651
Average monthly salary, male....	\$35 12	\$36 27
Average monthly salary, female..	\$32 18	\$32 80
New schoolhouses erected.....	298	172
Value of new schoolhouses.....	\$73,342 38	\$97,347 49
Total value of school property....	.....	\$1,765,881 00
Total revenue for schools.....	\$1,087,286 85	\$1,096,269 51
Total payments for schools.....	\$1,076,815 34	\$1,151,652 91
Wages paid teachers.....	\$907,141 59	\$987,150 97
Number of schools taught.....	4,251	4,725
Average length of school year....	76 days.	74 days.

The public-school revenue is derived, first, from a State tax of 2 mills on the dollar levied on all taxable property, the proceeds of which are paid into the State treasury and apportioned therefrom to the several counties; second, from a poll tax of one dollar, which is collected and disbursed by the county authorities; third, from such local taxes on property, not exceeding 5 mills on the dollar, as each school district may see fit to levy for its own use. The amounts derived from these taxes in 1891 were as follow: State tax, \$321,545.39; poll tax, \$154,728.40; local tax, \$600,102.40. For 1892 the revenue from the State tax was \$341,621.38; from the poll tax, \$167,419.81; from the local tax, \$571,923.02. These amounts were insufficient to maintain the schools during a length of time necessary for efficient work.

**Charities.**—At the State Lunatic Asylum there were 410 patients on Nov. 30, 1890; during the year following 116 new patients were admitted and 101 discharged, leaving 425 on Nov. 30, 1891. During the year ending Nov. 30, 1892, 105 new patients were admitted and 97 dis-

charged, leaving 432 remaining at the close of the year, of whom 361 were of the white and 71 of the colored race. Early in 1893 the new buildings, for which the General Assembly of 1891 appropriated \$85,000 as a construction fund, were completed, and accommodations were thereby furnished for 300 additional patients.

At the School for the Blind there were about 200 pupils on Jan. 1, 1893. For the two years preceding the average attendance was 146 pupils, and the cost of maintaining the institution \$74,236.43. At the Deaf-Mute Institute 138 pupils were in attendance on Jan. 1, 1893.

**Penitentiary.**—At the State Penitentiary there were 716 convicts on Jan. 1, 1892; 380 others were received during the year, and 10 who had previously escaped were recaptured, making the total number in the institution during the year 1,106. Of these, 266 were released by pardon, commutation, or expiration of sentence, 37 died, and 51 escaped, leaving 752 in prison on Jan. 1, 1893, of whom 207 were of the white race, 550 were negroes, and 5 Indians. At that time only 268 were confined within the Penitentiary walls, the remainder being employed by the lessees in various parts of the State. Three hundred and eleven were engaged in farming, 98 in repairing railroads, 15 in shipping wood, and 60 in brickmaking. The receipts from the lessees for the year ending in May, 1892, were \$32,128.48.

**Militia.**—Through the efforts of Gov. Eagle during his term a State militia was organized, consisting of 11 companies of infantry, 1 of cavalry, and 1 of artillery. The infantry companies have been organized into a regiment, are well armed and equipped, and are under fair discipline. The cavalry company is also ready for active service, and the artillery has been provided with two guns and the necessary equipment. The arms, camp equipage, and figures for these companies have been supplied from an appropriation made by the General Government. During August, 1892, an encampment of these organizations, which lasted one week, was held in the arsenal grounds, Little Rock.

**The Woodruff Defalcation.**—In the suit brought by the State against the bondsmen of ex-State Treasurer Woodruff a report was made in November, 1892, by the special master, Thomas H. Simms, appointed by the court to investigate the facts, in which he found the balance due the State from the late Treasurer to be \$43,857.75. This sum is in addition to the admitted cash deficiency of \$63,740.57, which the bondsmen voluntarily restored to the State soon after the discovery of the ex-Treasurer's irregularities. The master also charged that the ex-Treasurer, in attempting to cover up his shortage, had been guilty of obtaining orders from the State Debt Board for the issuance of scrip under false pretenses, and that he had also embezzled certain scrip belonging to the State. On the strength of the facts found by the master, the ex-Treasurer was indicted by the Grand Jury of Pulaski County on Dec. 17, 1892, for three different offenses. His trial did not occur till October, 1893, when a disagreement of the jury resulted, and the case was continued to the next term of the court, when a new trial will be held.

**Cotton-Growers' Convention.**—A convention of delegates from 29 counties in the State met at Little Rock on March 10, and, after discussing the subject of cotton culture, adopted resolutions that included the following:

That we, the representatives of the cotton-producing counties in the State of Arkansas, in convention assembled, recommend that this convention do proceed to organize as a permanent organization, to be known as the "Cotton-Growers' and Merchants' Association."

That we recommend that there be local organizations of this association organized in every cotton-growing county, and that the said local organizations shall, when possible, co-operate with any farmers' organization now existing.

That we recommend a reduction in the acreage of cotton for the year 1893 to such an extent that by a corresponding increase of the acreage in grains, grasses, and cereals sufficient produce might be raised in the country to feed the men and animals necessary for the cultivation of cotton and the independence of the farmer or planter.

That extraordinary effort be made to especially produce an abundance of corn, meat, hay, peas, oats, and other necessities for the planters' use.

That we appoint a sufficient number of delegates to the Interstate Cotton-Growers' Convention to represent Arkansas in this matter, and to take action looking toward a hearty co-operation of all the cotton-growing States for the end of reducing the cotton acreage to an extent equal and not in excess of the demand, so as to keep the price of cotton to a figure at which a profit may be realized.

**ASSOCIATIONS FOR THE ADVANCEMENT OF SCIENCE.** **American.**—The forty-second meeting of the American Association was held in Madison, Wis., Aug. 17-22, 1893. The officers of the meeting were: President, William Harkness, of Washington, D. C.; Vice-Presidents of sections: A, Charles L. Doolittle, South



WILLIAM HARKNESS.

Bethlehem, Pa.; B, Edward L. Nichols, Ithaca, N. Y.; C, Edward Hart, Easton, Pa.; D, Stillman W. Robinson, Columbus, Ohio; E, Charles D. Walcott, Washington, D. C.; F, Henry F. Osborn, New York city; G, Charles E. Bessey, Lincoln, Neb.; H, J. Owen Dorsey, Tacoma Park, Md.; I, William H. Brewer, New Haven, Conn. Permanent Secretary, Frederick W. Put-



nam, Cambridge (office Salem), Mass. General Secretary, Thomas H. Norton, Cincinnati, Ohio. Secretary of the Council, Herman L. Fairchild, Rochester, N. Y. Secretaries of the Sections: A, Clarence A. Waldo, Newcastle, Ind., in place of Andrew W. Phillips, who was not present; B, W. Le Conte Stevens, Troy, N. Y.; C, Henry N. Stokes, Chicago, Ill., in place of John U. Nef, who was not present; D, David S. Jacobus, Hoboken, N. J.; E, William H. Hobbs, Madison, Wis., in place of Robert T. Hill, who was not present; F, Leland O. Howard, Washington, D. C.; G, Beverly T. Galloway, Washington, D. C., in place of Frederick V. Coville, who was not present; H, Warren K. Moorehead, Xenia, Ohio; I, Nellie S. Kedzie, Manhattan, Kan. Treasurer, William Lilly, Maueh Chunk, Pa.

**Opening Proceedings.**—The preliminary meeting of the council with which the meeting begins was held in the Park Hotel on Aug. 16, when, besides other details, business pertaining to local arrangements, etc., was decided upon. About 80 new members were elected. The first general session with which the public meetings begin was held in Library Hall of the University of Wisconsin, which institution had placed its buildings at the disposal of the visiting scientists, at 10 A. M., on August 17. As is the custom, President Joseph Le Conte called the meeting to order and promptly introduced his successor, Prof. William Harkness, as the presiding officer. In taking the chair, Prof. Harkness made a brief address, in which he spoke of the aims and objects of the association, comparing them to those of the French Academy and of the British Association for the Advancement of Science. The former labored for the promotion of science by conferring honors and medals upon scientists, while the latter acted by stimulating independent research and rewarding such work by pecuniary prizes. The object of the American Association was similar to the latter, and if it had not yet attained the standard of its British prototype, it certainly was in a fair way of reaching it before long. Another object of the American Association was the bringing together of all workers in science—men and women—into closer relations with each other. At the close of these brief remarks the Rev. J. W. Cochran offered prayer, and then brief addresses of welcome were delivered by Mayor John Corscort, representing the civic authorities of Madison, and by Gen. Lucius Fairchild, chairman of the local committee of arrangements. President Charles K. Adams, of the University of Wisconsin, extended a hearty welcome to the scientists in behalf of the university. The annual report of the association was then presented by the permanent secretary, Prof. Frederick W. Putnam, who announced the deaths of 32 members during the past year. Among these was John S. Newberry, a past president of the association, head of the department of geology at Columbia College School of Mines; Prof. Eben N. Horsford, of Cambridge, Mass., an original member of the association; Dr. Henry Wheatland, of Salem, Mass., founder of the Essex Institute in that place; Martha J. Lamb, of New York city, editor of the "Magazine of American History"; and Dr. Philo R. Hoy, of Racine, Wis.

The receipts of the association during the past year amounted to \$8,233, and the expenditures \$6,510, leaving a balance of \$1,715. The association has a research fund, the interest of which is expended in the encouragement of scientific research. The fund now amounts to \$5,840, and it is increasing every year.

**Address of the Retiring President.**—The Association met in the Assembly Chamber of the Capitol, on the evening of May 17, to hear the retiring address of President Joseph Le Conte. Owing to the absence of Gov. Peck, the Attorney-General, J. L. O'Connor, welcomed the association in a few well-chosen words, and then gave way to Prof. Le Conte, who discussed "The Present Status of Science as to the Origin of Mountain Ranges." It was customary, he said, for the president in his annual address to give a *résumé* of the progress of science for the expiring year. But the field of science was so great that he felt obliged to confine his paper to one subject. Then, taking up the theme of his address, he defined a mountain as the result of a single earth effort, occupying a short or a very long time, while a mountain range was the result of a succession of earth throes. The thickness of the strata of mountains varies, but it is always great. In the Appalachians the Palæozoic is 40,000 feet thick, the Mesozoic of the Alps is 50,000 feet, and the Cretaceous of California is 20,000 feet. The sediments of the Appalachians thin out to the west to only 1,000 or 2,000 feet, so that mountains may be considered as lines of exceptionally thick sediments. They are, at the same time, lines of exceptionally coarse sediments. Foldings and faults are also characteristic of these features of the earth, the folds being single or many, and the faults being sometimes of enormous extent. Faults of 20,000 feet occur in the Western region. The component materials of mountains are fragments of rock, coarse gravels, and sands, and their huge mass rises in folded structure above the general surface of the globe. Sometimes, as in the Uintah mountains, there is but a single enormous fold; and again there is fold upon fold; and yet again there is occasionally great complexity, the strata being thrust under and over in a vast fanlike form. There are also sinclines and anticlines, which are often greatly appressed, as in the Appalachian range, where 19 have been counted in a distance of 65 miles. Mountain strata are not equally affected by cleavage, some seeming to be very solid, while in the case of others the whole mountain appears to be cleavable from top to bottom. The earth wave sometimes breaks with surprising abruptness, and again it slopes away very gently.

Many theories have been offered in explanation of these phenomena. Bare facts are not science. Facts must be grouped and systematized. But as this work goes on, it is liable to grow daring and speculative, until it is necessary to demand a careful discrimination between what may be styled formal and causal theories. It is agreed that mountains were originated by a process of horizontal mashing and vertical uplifting of the earth's crust. But what caused this mashing and uplifting? A true formal theory must advance gradually. Mountains are born of sea-margin deposits. We find by ob-

servation that existing offshore deposits are coarse at the top, shading down to fine by the same law as that marked in the structure of mountains. But the enormous mountainous deposits would have been possible only where there was a corresponding subsidence of sea bottom. The earth sinks by loading, and rises by unloading. Of this the Colorado plateau furnishes an illustration. It was originally 20,000 feet high, but 12,000 feet have been removed by erosion, which has caused the remaining 8,000 feet to rise above the general level. It may be regarded as now proved that the cosmic behavior of the earth is that of a rigid solid. A solid globe of glass six feet in diameter will change shape by the pressure of its own weight. The earth does the same. But as the earth is not homogeneous, its radial contraction will be unequal, and hence there will be ridges. The contraction theory assumes that the earth was once an incandescent ball, now cooling; and this cooling compels yielding along its lines of weakness. This is known abroad as the "American theory," and was originated by Prof. Le Conte. He also outlined other theories of mountain origin, and pointed out their defects, declaring, however, his entire willingness to give up his theory whenever any better one had been presented.

**Proceedings of the Sections.**—The association is divided into eight sections, each of which is presided over by an officer having the rank of vice-president of the association. Subsequent to the opening proceedings each section meets by itself and effects its organization by electing a fellow to represent it in the council, a sectional committee of three fellows, a fellow or member to the nominating committee, and a committee of three members or fellows to nominate officers of the section for the next meeting. As soon as this organization is effected the secretary of the section reports to the general secretary, who then provides him with a list of papers that, having been considered suitable by the council, may be read and discussed before the section. On the first day the proceedings are usually confined to organization and the delivery of the inaugural or vice-presidential address.

**Sections.**—A. *Mathematics and Astronomy.*—This section was presided over by Charles L. Doolittle, of South Bethlehem, Pa., who chose as the subject of his address "Variations of Latitude." He said: "All astronomy," says Laplace, 'depends upon the invariability of the earth's axis of rotation upon the terrestrial spheroid and upon the uniformity of their rotation.' He adds that, 'since the epoch when the application of the telescope to astronomical instruments gave the means of observing terrestrial latitudes with precision, no variations in such latitudes have been found which could not be attributed to errors of observation; which proves that since this epoch the axis of rotation has remained very near the same point on the terrestrial surface.' The question still persists whether it represents more than a first approximation to the truth. Various authorities were cited to show the correctness of this view; but as the geological evidence is clear that at one time the poles were temperate and the temperate zone a field of ice, the question is still an open one. A very plausible explanation of these things is by the assump-

tion that the earth's axis had in times past wandered from its former place. Hence the problem that the practical astronomer is asked to solve is that of determining whether progressive changes in the position of the pole are now taking place. Concerning these the most logical course at present is to suspend judgment. With regard to periodic changes, on the other hand, we can speak with more confidence. Considerable progress has been made in the investigations along this line, chiefly by such authorities as Küstner, Newcomb, and Chandler. The latter especially has made notable contributions in his valuable papers printed in the 'Astronomical Journal.' These and other researches which were discussed clearly demonstrate the fact of specific periodic variations of latitude. For further improvement in our knowledge of this subject we must look to continued observations at a number of points carried on for this express purpose, and so conducted as to eliminate all systematic errors. A plan is under consideration for establishing four permanent latitude stations on the same parallel of latitude at intervals of 90 degrees in longitude as nearly as may be. These will presumably be equipped with identical instruments of the most approved form, and the same stars employed at all of them. It is possible that within a very few years we shall see some such system in full and successful operation." The following-named papers were read and discussed before the section:

"A Construction for the Imaginary Points and Branches of Algebraic Loci," by Frank H. Loud; "Upon the Latitude Variation Tide," by Alexander S. Christie; "The Screw as a Unit in a Grassmannian System of the Sixth Order," by Edward W. Hyde; "Latitude Determination at Bethlehem, 1892-'93," by Charles L. Doolittle; "A Determination of the Constant of Aberration by a Modified Form of the Loewy Method," by George C. Comstock; "Applications of the Generalized Logarithmic Theorem," by Alexander Macfarlane; "On the Inscription of Regular Polygons," by L. E. Dickson; "On the Possibility of the Algebraic Solution of the Gen-equation of the Fifth Degree," by Mansfield Merriman; and "Space," by Samuel S. Laws.

B. *Physics.*—The presiding officer of this section was Prof. Edward L. Nichols, who holds the chair of Physics in Cornell University, Ithaca. The topic which he discussed was "The Phenomena of the Time Infinitesimal."

Prof. Nichols pointed out the importance in physics of the study of phenomena occupying short intervals of time, particularly of the first minute intervals following abrupt changes of the conditions of equilibrium, and also of the successive time elements, which go to make up a cycle in the case of periodic changes. He reviewed at some length the most significant researches already completed in the field, and traced in detail the development of the "method of instantaneous contacts," which has been so fruitful in the experimental study of alternating current phenomena, claiming that their complexity had obliged the modern electrician to be both a mathematician and a physicist. In much the same way a generation ago the new and difficult phenomena of cable telegraphy served to train the men who stand as pioneers and chieftains in electrical science. The special adaptability of photography to the investigation of



short-time phenomena was dwelt upon, and the results obtained by the application of the photographic method were presented. This address Prof. Nichols illustrated by photographs, in one of which he showed a bullet in flight, photographed in an interval so brief that the missile seemed at rest. In another picture the bullet was shown in the act of shattering a pane of glass with all the incidental perturbation of the surrounding air.

The following-named papers were read and discussed before this section:

"Application of Interferential Methods to Measurements of Expansion of Long Bars," by Edward W. Morley and William A. Rogers; "A Preliminary Study of the Constants of the Morley Interferential Comparator" and "On the Effect of Evaporation upon the Relative Dimensions of Bars of Metal partially submerged in Water," by William A. Rogers; "On Physical Addition or Composition," by Alexander Macfarlane; "Some Rapid Changes of Potential studied by Means of a Curve-Writing Voltmeter," by George S. Moler; "Some Applications of Electric Heating in Physical Laboratory Practice," by Edward L. Nichols; "Note on the Use of a Rotating Disk in Photometry," by Ervin S. Ferry; "Irregularities in Alternate Current Curves," by Frederick Bedell, K. B. Miller, and W. F. Wagner; "Experiments with an Alternate Current Condenser," by Frederick Bedell; "On the Elasticity of Metals" and "Fatigue in the Elasticity of Stretching," by Joseph O. Thompson; "The Elastic Strength of Solid, Liquid, and Gaseous Dielectrics," by Alexander Macfarlane and G. W. Pierce; "Elastic Properties of Glass," by William S. Franklin and L. B. Spinney; "On So-called Negative Lightning" (with lantern illustrations), by W. LeConte Stevens; "An Automatic Toepler Pump," by Edward W. Morley; "Note on the Surface Tension of Liquids" (with lantern illustrations), by Ernest F. Nichols; "The Effect of Temperature and of Electric Driving on the Period of Tuning Forks," by John S. Shearer; "On the Continuous Spectrum of the Alkalies," by Benjamin W. Snow; "Electrolytic Polarization," by John Daniel; and "An Apparatus for the Generation of Oxygen and Hydrogen by Electrolysis," by Edward L. Nichols and George S. Moler.

*C. Chemistry.*—The vice-president in charge of the section was Prof. Edward Hart, who fills the chair of Chemistry at Lafayette College, Easton, Pa. His address was entitled "Twenty-five Years' Progress in Analytical Chemistry." "One of the marked changes in analytical methods which the lapse of years has brought about is in the time necessary for their performance. In 1868 analyses were made, almost without exception, by persons usually employed in teaching. Only here and there in the larger cities an adventurous pioneer, depending altogether for support upon fees received for doing analytical work, had established himself. Nowadays careful analysis is the foundation stone of nearly all our larger industries, and the number of determinations made has increased a millionfold." Then taking up his subject more in detail, he referred to the steps through which the analysis of iron had been developed. Determinations of silicon, that formerly required a day, were now made in fifteen minutes. The number of efficient chemists had largely increased. In 1868, in the Lehigh valley, there were not more than three competent analysts, while to-day there were more than fifty. Methods of mineral analyses and the improvements made in them were discussed quite fully. A greater knowledge of the

chemical nature of the metals had created new uses for them. These were mentioned. Improvements in chemical apparatus were cited, and the torsion balance of Dr. Alfred Springer, of Cincinnati, indicated as one of American invention. This led to a mention of improved chemical reagents. The value of electrolytic methods in analytical chemistry, and the developments in this direction, were discussed. Volumetrical analysis and spectrum analysis received their share of treatment in the advances made, and these were briefly pointed out. In closing, he called attention to the fact that the chemists in this country had contributed no little proportion to the advancement made, and begged that this be not forgotten when the subject was considered. Those who advanced the practical part were worthy of praise equally with those who devoted themselves to the theory. "Because they do not devote their lives to a study of the behavior of orthochloroparapropyl benzene with sulfonitro-protocatechnic acid therefore we should not hold their work worthy of contempt."

The following-named papers were read and discussed before this section:

"On the Atomic Weight of Oxygen," by Edward W. Morley; "The Acetyl and Benzoyl Derivatives of the Pentoses," by Winthrop E. Stone; "The Electrolytic Oxidation of Glycerol," by Winthrop E. Stone and H. N. McCoy; "The Constitution of Paraldehyde and Metaldehyde," by William R. Orndorff and John White; "The Action of Sodium on Acetone," by Paul C. Freer; "Some Experiments on Sampling by Quartation," by Porter W. Shimer and S. K. Rief-snyder; "Solubility of Lead Oxide in the Normal Tartrates and other Normal Organic Salts, with Observations on the Rotary Power of the Solutions thus Obtained," by Louis Kahlenberg and Homer W. Miller; "The Analysis of Lubricating Oils containing 'Blown' Rape-seed and 'Blown' Cotton-seed Oils," by Thomas B. Stillman; "On the Nitrites of some Amines" and "Natural Gas from New Lisbon, Ohio," by William A. Noyes; "Narceine, a New Formula and New Derivatives" and "The Structural Formula for Narceine and its Synthesis from Narcotine Pseudo-Narceine," by George B. Frankforter; "A Tempered Steel Meteorite," by Edward Goldsmith; "On the Occurrence and Distribution of Nitrogen in Deep Artesian Wells of the Mississippi Basin" and "The Action of Gaseous Hydrochloric Acid and Oxygen on the Platinum Metals," by Erastus G. Smith; "The Electro-Deposition of Iridium: a Method of Maintaining the Uniform Composition of an Electroplating Bath without the use of an Anode," by William L. Dudley; "The Advantages of Extended Examinations of River Waters," by E. H. S. Bailey and Edward C. Franklin; "On the Systematic Errors affecting all the Atomic Weights of Stars" and "On a Review of Atommechanics," by Gustavus Hinrichs; and "An Unusual Form of Calcium Glycerate," by Launcelot W. Andrews.

*D. Mechanical Science and Engineering.*—The president of this section was Prof. Stillman W. Robinson, of the University of Ohio, who delivered an address on "Recent Advances in Mechanical Science."

Three facts support the proposition for systematic training in the sciences underlying the profession of the engineer, viz.: 1. The important present and future bearing of engineering practice upon the welfare of the country.

2. The comprehensiveness of the training, embracing the fundamental principle of all the mechanical arts and manufactures.



3. The extended influence of a sound engineering practice. The teachers of engineering are thus in the highest degree accountable for the proper utilization of the forces and materials of Nature's laboratories. Before the existence of schools of engineering, progress in the corresponding works and industries was comparatively slow. The works requiring the engineer formerly were large buildings and road bridges, where abundant material and rule of thumb took the place of science. Less than one hundred years ago the first civil engineering schools were established, and but a few till within fifty years. Later came the schools for mechanical engineering, and still more recently those for electrical engineering. As a rule, demand for these schools preceded them. Note the profusion of works of engineering which have appeared since, such as large bridges, buildings, machines. No doubt all human progress was hampered by the dearth of engineering science as existing one hundred years ago. Admitting the importance of engineering schools there is yet considerable confusion of ideas in what should be embraced in those schools, and standard courses representing the united judgment of the engineering teachers of the country would be hailed with satisfaction; not that all will adopt any one standard in entirety, but that all may have standards with which to compare in order to the attainment of the highest ends in teaching, and on the part of the engineering professions.

"Test of Plant of the Hygeia Ice Company of New York City," by Messrs. Hupfel, Griswold, and Kennedy; "Experimental Determination of the Quickness of Action of a Shaft Governor," "Tests of Automatic Fire Sprinklers" and "An Accurate Method of Measuring Heavy Liquid Pressure," by David S. Jacobus; "On the Changes in the Dimensions of Metals which may be due to Changes in Molecular Structure Depending on their Age," by William A. Rogers; "Improved Form of Transmission Dynamometer," by Stillman W. Robinson; "Economical Compression in a Steam Engine," by J. Burkitt Webb; and "A Mechanical Index," by C. Wellman Parks.

*E. Geology and Geography.*—This section was presided over by Charles D. Walcott, who is palæontologist of the United States Geological Survey with special charge of the palæozoic division of invertebrate palæontology. He chose as the subject of his address "The Geologic Time as Indicated by the Sedimentary Rocks of North America." Dr. Walcott quoted the opinions of eminent geologists as to the age of the earth. Alexander Winchell held that the present rock formation lasted 3,000,000 years. W J McGee put the figure as high as 680,000,000 years, while Charles Darwin estimated it to be 200,000,000 years. The general conclusion of all geologists was that the globe is of vast antiquity, compared with which man's age is insignificant. Maps showing the appearance of the North American continent at different epochs were produced, and he gave the conclusions arrived at after the investigation of the rock formations in Nevada, where the observations were conducted on an area of rock of nearly 40,000 square miles and having a thickness of 21,000 feet. Of this mass of rock 6,000 feet in thickness is limestone and 1,500 feet sandstone and shells. It required 1,200,000 years, the lecturer said, to deposit the sands and shells, and 16,500,000 years for the

formation of the limestone deposit, this being based on the present rate of deposit of limestone in the ocean. With this as unit of geological measurement the total time required for the formation of the North American continent was about 45,140,000 years, which, added to the unknown time required for the formation of the crystalline rocks, about 10,000,000 years, would make over 56,000,000 in all. Geologic time, according to Dr. Walcott, must be measured by tens of millions of years, although some have taken hundreds of millions of years into consideration in their calculations, while others, the physicists particularly, have refused to accept such long periods.

The following-named papers were then read and discussed before the section:

"Gravels of Glacier Bay, Alaska" (with lantern illustrations), by Henry F. Reid; "Use of the name 'Catskill,'" by John J. Stevenson; "Section Across the Coastal Plain Region in Southern North Carolina," by Joseph A. Holmes; "Notes on Further Observations of Temperature in the Deep Well at Wheeling, W. Va.," by William Hallowell; "Recent Investigations in the Cretaceous Formation on Long Island, N. Y.," and "Northward Extension of the Yellow Gravel in New Jersey, Staten Island, Long Island, and Eastward," by Arthur Hollick; "Character of Folds in the Marquette Iron District," by Charles R. Van Hise; "The Fossil Sharks of Ohio," by Edward W. Claypole; "Hillsdale County Geology," by Horatio P. Parmelee; "Exhibition of Trilobites showing Antennæ and Legs," by Charles D. Walcott; "Remarks on the Genus *Arthropycus* Hall," "On the Value of Pseudo-algæ as Geological Guides," and "Studies in Problematic Organisms. The Genus *Puccoides*," by Joseph F. James; "Some Questions Respecting Glacial Phenomena About Madison," by William Hollick; "Amount of Glacial Erosion in the Finger Lake Region of New York," by David F. Lincoln; "Ice-sheet on Newtonville Sandplain," by Frederic P. Gulliver; "Additional Facts bearing on the Question of the Unity of the Glacial Period," by G. Frederick Wright; "Changes of Drainage in Rock River Basin in Illinois," by Frank Leverett; "Graphic Comparison of Post-Columbia and Post-Lafayette Erosion," by W J McGee; "An Illustration of the Effect of Stagnant Ice in Sussex County, N. J.," and "A Phase of Superficial Drift," by Rollin D. Salisbury; "Tertiary and Quaternary Stream Erosion of North America," by Warren Upham; and "The Emergence of Springs," by Thomas C. Hopkins.

*F. Zoölogy.*—The presiding officer of this section was Prof. Henry F. Osborn, of Columbia College, who chose as the subject of his address "The Rise of the Mammalia." In discussing this topic, he dwelt especially upon the methods employed by palæontologists, and upon the broad generalizations that had been made by students of fossil mammals. Among these was the generalization of Marsh, that all early types of mammalia had small brain cavities. Cope has shown by the growth of the feet that all early types had five toes upon both the fore and hind feet, and that the foot rested upon the sole. He had also shown that while the primitive types possessed cone-shaped teeth, the more differentiated they became the more complex the teeth were. An interesting statement in regard to the dental formulas of various orders was given. Without going into details, it may be said that the speaker argued for the three great groups of mammals—monotremes, marsupials, and placentals—a common origin far back of Jurassic times, for

the three were then plainly differentiated. These classes arose from a promammalian type, which was, in its turn, an offshoot from a still simpler form, a second offshoot from which developed into the reptilian type of life. The horse he considered as originating on the North American continent, and he pointed out the interesting fact that the disappearance of many of the huge forms of mammals that once peopled our western plains seemed coincident with the introduction of grasses.

The following-named papers were then read and discussed before the section:

"Notes on *Aspidiotus Perniciosus*," "Erastria Scitula, a Valuable Insect to Introduce into America," and "Sphida, a Myth," by Charles V. Riley; "Seat of Life in the House-fly," by John B. Smith; "The Respiratory Mechanism in the Lamprey," by Simon H. Gage; "The Correlation of Structure and Host-habit in the Encyrtinae," by Leland O. Howard; "The Mammals of the Upper Cretaceous," by Henry F. Osborn; "The Production of Races and Varieties of Bacteria in Mixed Cultures" and "A New Sporozoön in the Intestinal Villi of Cattle," by Theobald Smith; "The Insect Guests of the Florida Land Tortoise," by Henry G. Hubbard; "A Comparative Study of the Lung with Special Reference to the Communication of one Air-sac with Another," by William S. Miller; and "Some New Revelations Regarding Color Sense in the Human Retina" and "On a New Apparatus for measuring the Strength of Color-sense," by John H. Pillsbury.

**G. Botany.**—The presiding officer of this section was Prof. Charles E. Bessey, who fills the chair of Botany and Horticulture in the University of Nebraska, and is well known as the author of numerous text-books on botany. His address had to do with "Evolution and Classification." He pointed out the anomalous fact that while botanists have long recognized that the present scheme of classification was defective, they still adhered to it. Theoretically discarding it, practically they used it. He showed that there may be degradation as well as advancement in evolution, and that what seemed the lowest forms of dicotyledons from their floral structure were not necessarily primitive types. He therefore interpolated the apetalous orders of the ordinary classifications among the polypetalæ as degraded types of polypetalous flowers. He outlined what seemed to him to be a natural classification, considering the ranunculacæ as the most primitive flowers. The greatest deviation, therefore, from this type was the highest in organization. He believed that with but little modification the sequence of orders in our modern text-books could be used to express the natural relationships of plants. Of course, such a scheme as a lineal arrangement was out of the question. He, in common with many others, recognized the composite as the most highly organized of the dicotyledons, and the orchideæ were placed at the head of the monocotyledons.

The following-named papers were read and discussed before the section:

"Photography as an Instrument for recording the Microscopic Characters of Micro-organisms in Artificial Cultures," "Comparative Study of the Structure and Junction of the Sporangia of Ferns in the Dispersion of Spores," and "Symbiosis in the Roots of *Ophioglossal*," by George F. Atkinson; "Observations on a Rust affecting the Leaves of the Jersey or Scrub Pine" and "Results of some Recent Work

on Rust of Wheat," by Beverly T. Galloway; "Prophylla of Gramineæ," by William J. Beal; "A New Injection Needle for the Study of Lower Plants," by J. Christian Bay; "On the Food of Green Plants," by Charles R. Barnes; "The Solandi Printing applied to Botanical Work" and "The Shrinkage of Leaves in Drying," by Byron D. Halsted; "Further Observations on the Fermentation Tube with Special Reference to Anaerobiosis, Reduction, and Gas Production," by Theobald Smith; "Two New and Destructive Diseases of Cucurbits," by Erwin F. Smith; "Preliminary Statement concerning Botanical Laboratories and Instruction in American Universities and Colleges," by Conway MacMillan; "On the Quantitative Analysis of the Colors of Flowers and Foliage," by John H. Pillsbury; "The Minute Structure and Development of the Motile Organ in the Leaf of the Red Bud," by S. G. Wright; "Distribution of the Gramineæ in the United States," by Samuel M. Tracy; "Present Aspects of the Nomenclature Question" and "A Consideration of a Species based on the Theory of Evolution," by Nathaniel L. Britton; "A Revision of the Genus *Physcomitrium*" and "*Ulota Americana* Mitten and *Orthotrichum Americanum*, Beauv.," by Elizabeth G. Britton; "Deviation in Development due to the Use of Unripe Seeds," by John C. Arthur; "The Principal Diseases of Citrous Fruits now being studied at Eustis, Fla.," and "*Cephaluros Mycoidea* and *Phyllosiphon* sp., Two Parasitic Algae New to North America," by W. T. Swingle; "An Analysis of the Conditions affecting the Distribution of Plants," by Frederick V. Coville; "Lichens of the Black Hills," by Thomas A. Williams; "The Bibliography of American Botanical Literature," by J. Christian Bay; "Notes on the Development of *Marattia Douglasii*," by Douglass H. Campbell; "The Fructification of *Juniperus*," by John G. Jack; "The Roots of Orchids," by M. B. Thomas; "A Sclerotium Disease of Plants," by P. H. Rolfs; "Preliminary Notes on some Chromogenic Bacteria of the Ames Flora," "Notes on *Rhizelia Pyrata*," "Crossing of Cucurbits," and "A Case of Poisoning by the Wild Parsnip, *Cicuta Maculata*," by L. H. Pammel.

**H. Anthropology.**—The presiding officer of this section was J. Owen Dorsey, of Tacoma Park, Md., who was connected for many years with the Bureau of Ethnology, Washington, D. C. The subject of his address was "The Biloxi Indians of Louisiana." The name Biloxi, he said, was probably a corruption of the name which the Biloxi Indians gave themselves, which is Lakes, or Lakesa, and means the first people. The Biloxis were known to have lived in 1669 at Biloxi Bay, Miss. In 1763 they moved to Louisiana, and of the whole tribe there are only about 17 individuals now alive. Descent is in the female line, the child belonging to the mother's family and not to the father's. Among the Biloxis were three divisions, one being known as the Deer branch, the other as Grizzly Bear branch, and the third as the Alligator branch. The relationship of the members of the first branch to the deer was characterized by the fact that they did not eat deer meat and looked upon that animal as sacred. The same was the case with the grizzly bear and the alligator.

Among their curious superstitions are the following:

A Biloxi can not marry his wife's brother's daughter nor his wife's father's sister, but a Biloxi man can marry his deceased wife's sister and a Biloxi woman can marry the brother of a deceased husband. The Biloxis believed that the spirit of a deer revived and went into another body, and that this could be repeated thrice, but that when the fourth deer was



killed the spirit never revived. The Biloxi do not talk about the thunder being in cloudy weather, because that being is very mysterious. Thunder stories can not be told except on a fair day. When the Biloxi see a humming bird they say that a stranger is coming. They say a humming bird always tells the truth. When the fire crackles it is a sign of snow or rain. A mutch hotch picking on a house is a sign of coming death. If a child steps over a grindstone its growth will be stopped. No Biloxi will kill or eat a snipe, because that bird always gathers deer fat, was the sister of the thunder being, and an account of her appears in the myth of the thunder being.

The following-named papers were then read and discussed before the section.

"Songs of Sequence of the Navajos" (illustrated by the phonograph), by Washington Mathews; "The Result of Excavations at the Ancient Argillite Quarries, recently discovered near the Delaware River on Gaddes Run," by H. C. Mercer; "Indian Migrations," by C. Stainland Wake; "The Instinctive Interest of Children in Bear and Wolf Stories," by William H. Brewer; "The Delicacy of the Sense of Taste among Indians," by E. H. S. Bailey; "Caches of the Saginaw Valley," by Harlan I. Smith; "Is the Polysynthesis of Duponceau characteristic of American Indian Languages," by John N. B. Hewitt; "Primitive Woman as a Poet" and "Some Drawings by Kootenay Indians," by Alexander F. Chamberlain; "Psychology at the World's Fair," by Joseph Jastrow; "Some Account of a Purification Ceremony and a Sacred Stone in Use among the Mission Indians of California," "The Indian Stone Adzes," and "Some Facts concerning the Obsidian Blades called Swords, from Northern California," by Horatio N. Rust; "Observations in Regard to the Use of Argillite by Prehistoric People, made by Explorations of Ancient Village Sites in the Delaware Valley," by Ernest Volk; "The Evidence of Glacial Man in America," by G. Frederick Wright; "The Antiquity of Man in America," by W. J. McGee; "The Prehistoric Man of Mexico," by A. S. Herrera; "Buried Deposits of Hornstone Disks," by John F. Snyder; "A Shawnee Town and its Exploration," by William E. Myer; "Remarks upon Sheet-copper Designs from the Hopewell Group, Ohio," by Warren K. Moorehead; "The Ancient Necropolis of Ancon, Peru," by George A. Dorsey; "Another Ancient Source of Jasper Blade Material East of the Middle Alleghanies," by H. C. Mercer; "Remarks on the Mexican Calendar System," by Daniel G. Brinton; "Theory of Primal Shaping Arts," by William H. Holmes; "Indian Names for the Four Winds and Four Quarters," by J. Owen Dorsey; "Notes for an Archaeological Study of La Plata Island, Ecuador" and "A Ceremony of the Quichua Indians of Peru," by George A. Dorsey; "The Sacrifice of the White Dog," by Charles A. Hirschfelder; "The Relation between Mythopeia and Euhemerism," by Merwin M. Snell; and "Revision of Calendar," by Ada M. King.

*I. Economic Science and Statistics.*—This section was presided over by Prof. William H. Brewer, of the Sheffield Scientific School of Yale University, who chose "The Mutual Relations of Science and Stock Breeding" as the subject of his vice-presidential address. The production of crops and the production of animals are the two great branches of agriculture. The application of science to the production of crops have been more conspicuously before the public than have been similar applications to the productions of animals. There could be no comprehensive science of agriculture until there was a science of chemistry, and the modern revolution

in the art and practice of agriculture has come about as the science of chemistry advanced and mechanical invention progressed. The application of scientific methods to the economic breeding of farm animals came much later and followed the publication of Darwin's "Origin of Species." As an art, breeding attained a high standard long ago in the production of some fine examples of particular breeds; but, excepting Arabian horses and certain game fowl, crossing was the universal method practiced in European countries. The modern method of improvement within the breed, keeping the blood pure, has been the outcome of scientific study applied to the economic production of animals. Cases of this breeding within the breed were cited, and its application to such results as the English race horses and farm animals mentioned. These experiments were made prior to Darwin's time, but subsequent to his publications a better understanding of the subject began to prevail, and many of the facts contained in his works were derived from studying this subject. Darwin even joined various pigeon societies, put up his cotes, and became a practical and experimental fancier. The result of all this has been a better knowledge of the laws of heredity and of the causes that promote variation. A science of breeding now underlies the practical art. The gain to science has been correspondingly great, and numerous unsolved problems in biological science find here their material for use. Economical and social science also here find a field for experiment and deduction. Science will therefore be the gainer in the future as in the past.

The following-named papers were then read and discussed before the section:

"Surface Tension of Water and Evaporation with Experiments" and "Energy as a Factor in Nutrition," by Manly Miles; "The Utility of Practical Psychology" and "Geneco-Pathological Chart," by Laura O. Talbott; "Manual Labor at Agricultural Colleges," by William J. Beal; "The Maturing Pacific Railroad Debts," by Richard Colburn; "Relations of Production and Price of Silver and Gold," by Henry Farquhar; and "The Necessity for a Bureau of Record and Reference," by H. F. J. Porter.

**Popular Features of the Proceedings.**—Subsequent to the delivery of the presidential address on the evening of Aug. 17 the usual reception was tendered to the members of the association in the Senate Chamber by the citizens of Madison, and on the evening of Aug. 18 a public lecture complimentary to the citizens was delivered by Prof. Daniel G. Brinton, who spoke on "Early Men." Saturday, Aug. 19, as usual, was set aside for excursions, and the picturesque dells of Wisconsin River were visited by more than 200 of the attending scientists. On the evening of Aug. 21 a reception and lawn fête was given the visitors on the adjoining lawns of President Charles K. Adams, John M. Olin, and George Raymer, from 8 to 11. The scene was made brilliant by an artistic illumination with electric lights. Short trips were made by steamer on the lake, and residents generally along the Mendota shore illuminated their lawns for the occasion. Besides the foregoing, a reception was given to the ladies of the association, on Aug. 19, by Mrs. Charles K. Adams. Other excursions of

special interest were made by separate sections to points where characteristic natural features could be seen. These were usually made under the guidance of some scientist specially familiar with the locality.

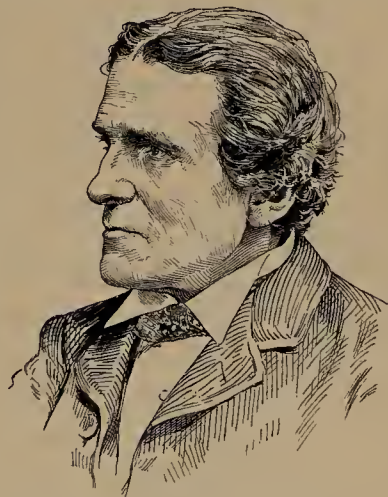
**Affiliated Organizations.**—The American Microscopical Society held meetings on Aug. 14, 15, and 16. Its officers were John D. Cox, of Cincinnati, Ohio, president, and William H. Seaman, of Washington, D. C., secretary. The fifth summer meeting of the Geological Society of America was held on Aug. 15 and 16, and its president was Sir J. William Dawson, of Montreal, Canada, and its secretary Herman L. Fairchild, of Rochester, N. Y. On the same days met also the Society for the Promotion of Agricultural Science, with Isaac P. Roberts, of Ithaca, N. Y., as president, and Leland O. Howard, of Washington, D. C., as secretary; the Association of Economic Entomologists, with S. A. Forbes, of Champaign, Ill., as president, and Harrison Garman, of Lexington, Ky., as secretary; and the Association of State Weather Services, with Henry H. C. Dunwoody as president, and Robert E. Kerkham as secretary. Finally, subsequent to the meeting of the American Association for the Advancement of Science, there was held an International Botanical Congress during three days beginning Aug. 23, at which the International Standing Commission on Nomenclature reported, which was then discussed by the congress. Meetings of the Botanical Club of the association, of which William P. Wilson, of Philadelphia, Pa., was president, and Thomas H. McBride, of Iowa City, secretary, were announced daily from 9 to 10 A. M., from Aug. 18. Also, the Entomological Club announced meetings during the intervals of Section F. Its officers were C. J. S. Bethune, of Port Hope, Ontario, president, and Charles L. Marlatt, of Washington, D. C., secretary.

**Final Sessions.**—The meeting was an unusually small one, and it was found that the World's Fair, instead of attracting a large number of scientists to Madison, proved a detriment. Many had to arrange their visits to the exposition at other times, while others went as far as Chicago on their way to Madison and stayed there. Others reached Madison, but were in a hurry to return. This was particularly evident at the general session, Thursday. The duration of the meeting was therefore curtailed one day, the closing exercises occurring on Aug. 22, instead of Aug. 23 as originally announced. The nominating committee met on Aug. 18, and their selections were duly accepted at the general session on Aug. 21; when also \$100 was appropriated toward paying a year's expenses of some student, to be selected by a committee later, in the biological laboratory of the Wood's Holl (Mass.) Summer School. It was then determined to send a telegram of congratulation to Prof. H. Von Helmholtz, the great German physicist, who had just arrived at Chicago to attend the Electrical Congress. At the final session 37 members were advanced to the grade of fellow, in consideration of their contributions to science.

**Next Meeting.**—Considerable discussion took place concerning the place of meeting for 1894, but it remained undecided. Boston and Worcester, Mass., Providence, R. I., and Brooklyn,

N. Y., were referred to, but the decision was left with the president and the permanent secretary. San Francisco was spoken of as the place for meeting in 1895, and an invitation was received from Nashville for 1896. The following officers were chosen: President, Daniel G. Brinton, Media, Pa. Vice-presidents: A, George C. Comstock, Madison, Wis.; B, William A. Rogers, Waterville, Me.; C, Thomas H. Norton, Cincinnati, Ohio; D, Mansfield Merriman, South Bethlehem, Pa.; E, Samuel Calvin, Iowa City, Iowa; F, Samuel H. Scudder, Cambridge, Mass.; G, Lucien M. Underwood, Greencastle, Ind.; H, Franz Boas, Worcester, Mass.; I, Harry Farquhar, Washington, D. C. Permanent Secretary, Frederick W. Putnam, Cambridge, Mass. General Secretary, Herman L. Fairchild, Rochester, N. Y. Secretary of the Council, James L. Howe, Louisville, Ky. Secretaries: A, Wooster W. Beeman, Ann Arbor, Mich.; B, Benjamin W. Snow, Madison, Wis.; C, S. M. Babcock, Madison, Wis.; D, John H. Kinealy, St. Louis, Mo.; E, William H. Davis, Cambridge, Mass.; F, William Libbey, Princeton, N. J.; G, Charles R. Barnes, Madison, Wis.; H, Alexander F. Chamberlain, Worcester, Mass.; I, Manly Miles, Lansing, Mich. Treasurer, William Lilly, Mauch Chunk, Pa. (re-elected.)

**British.**—The sixty-third annual meeting of the British Association for the Advancement of Science was held in Nottingham during Sept. 13–19. The officers of the association were: President, J. S. Burdon Sanderson. Section Presidents: A, Mathematics and Physics, R. T. Glaze-



JOHN SCOTT BURDON SANDERSON.

brook; B, Chemistry, Prof. J. Emerson Reynolds; C, Geology, J. J. H. Teall; D, Biology, Rev. H. B. Tristram; E, Geography, Henry Seebohm; F, Economic Science and Statistics, Prof. Joseph S. Nicholson; G, Mechanical Science, Jeremiah Head; H, Anthropology, Dr. Robert Munro. General Secretaries, Sir Douglas Galton and Vernon Harcourt. Assistant Secretary, G. Griffith. General Treasurer, Dr. Arthur W. Rücker.

**General Meeting.**—The association began its proceedings with a preliminary meeting of the General Committee on Sept. 13, over which Sir Archibald Geikie, the retiring president, presided. The report of the council was presented.



It included a statement of the election as corresponding members of the following scientists, who were in attendance at the Edinburgh meeting: Dr. Svante Arrhenius, of Stockholm; Prof. Marcel Bertrand, of Paris; Prof. F. Elfving, of Helsingfors; Prof. Leo Errera, of Brussels; Prof. G. Fritsch, of Berlin; President Daniel C. Gilman, of Baltimore; Dr. C. E. Guillaume, of Sevres; Prof. Rosenthal, of Erlangen; and Dr. Maurits Snellen, of Utrecht. The following resolutions were received during the year:

That the council be requested to draw the attention of the Local Government Board to the desirability of the publication of the "Report on the Examination into Deviations from the Normal among 50,000 Children in Various Schools," which has been presented to that board by the British Medical Association; and

That the council be requested to draw the attention of her Majesty's Government to the anthropometric method for the measurement of criminals, which is successfully in operation in France, Austria, and other Continental countries, and which has been found effective in the identification of habitual criminals, and consequently in the prevention and repression of crime.

Both resolutions were acted on favorably. The announcement that an index to the reports of the association for the years 1861 to 1890 had been completed by Mr. Griffith was made. The general treasurer reported that for the first time the association had £62 odd to the good, whereas in the last two years they had been £1,200 to the bad. There was still great need for economy. He could not refrain from a remonstrance on the cost of the printing, which was unnecessarily increased by the number of corrections made in proofs by the authors of papers. In one paper alone the amount thus spent was £25.

Besides other formal business a vote of thanks was passed, acknowledging the services of Sir Archibald Geikie. The first general gathering was held in the evening in Albert Hall, when the retiring president introduced his successor, who then addressed the association on "Biology and its Relations with Other Branches of Science."

**The President's Address.**—In opening his address Prof. Burdon-Sanderson said "that at the last meeting of the British Association in Nottingham Section D assumed for the first time the title which it has since held—that of the section of biology"; hence, taking the word biology as his starting point, he gave an account of its origin and first use, and of the relations which subsist between biology and other branches of natural science. The word biology, now so familiar, was unknown at the beginning of the century. It was first employed by Treviranus, who proposed to himself as a life task the development of a new science, the aim of which should be to study the forms and phenomena of life, its origin, and the conditions and laws of its existence. He commended biology as a study which above all others "nourishes and maintains the taste for simplicity and nobleness; which affords to the intellect ever new material for reflection, and to the imagination an inexhaustible source of attractive images." He defined life as consisting in the reaction of the organism to external influences, and contrasted

the uniformity of vital reactions with the variety of their exciting causes. This definition can still be accepted as true. The first thing we observe about the activities of an organism is that they are of two kinds, according as we consider the action of the whole organism in its relation to the external world or to other organisms, or the action of the parts or organs in relation to each other. This distinction between the internal and external relations of plants and animals has always existed; hence, there have been two kinds of biologists—those who make it their aim to investigate the action of the organism by methods of physics and chemistry, and those who study the place that the organism occupies, and the part which it plays in the economy of nature (called "œcology"). This conception of biology Prof. Burdon-Sanderson then attempted to demonstrate, using illustrations which appealed to him most strongly, and especially such as were in the special division of biology to which he himself belonged.

The origin of life, the first transition from nonliving to living, is a riddle that lies outside of our scope. Organized nature, as it now presents itself, has become what it is by a process of gradual perfection or advancement brought about by the elimination of those organisms which failed to obey the fundamental principle of adaptation. Biology naturally falls into three divisions, and these are even more sharply distinguished by their methods than by their subjects, namely: *physiology*, of which the methods are entirely experimental; *morphology*, the science which deals with the forms and structure of plants and animals, and of which it may be said that the body is the anatomy, the soul, development; and *œcology*, which uses all the knowledge it can obtain from the other two, but chiefly rests on the exploration of the endless varied phenomena of animal and plant life as they manifest themselves under natural conditions. Then, taking up the first of these—physiology—he discussed its origin and scope. Physiology as a science began with Johannes Müller, who taught in Berlin from 1833 to 1857. The development is due to his successors, Brücke, Du Bois-Reymond, Helmholtz, who were his pupils, and Ludwig in Germany, and to Claude Bernard in France, who are "the founders of our science." The specific energies of the organism he discussed very fully, taking his many illustrations from special manifestations of energy in response to light, color, sound, etc., by the lower organisms. Concerning experimental psychology, a region between two methods of investigation of questions which are closely related, much work had recently been accomplished, which he described somewhat in detail. On this subject he said: "Between the two—that is, between sensation and the beginning of action—there is an intervening region which the physiologist has hitherto willingly resigned to psychology, feeling his incompetence to use the only instrument by which it can be explored—that of introspection." The results of experiment psychology tend to show that sensation and allied processes are as truly functions of organism as the contraction of a muscle or as the changes produced in the retinal pigment by light. The behavior of unicellular or-



ganisms with external influences was indicated by illustrations of phototaxis, or the influence of light in directing the movements of free-moving cells. Similarly the action of chemistaxis, or the movements of antherozoids of ferns and mosses guided by impressions derived from chemical sources, as by the allurements of certain chemical substances (sugar, etc.) in solution, was discussed. In conclusion he said:

"The purpose which I have had in view has been to show that there is one principle—that of adaptation—which separates biology from the exact sciences, and that in the vast field of biological inquiry the end we have is not merely, as in natural philosophy, to investigate the relation between a phenomenon and the antecedent and concomitant conditions on which it depends, but to possess this knowledge in constant reference to the interest of the organism. What I have desired to insist on is that organism is a fact which encounters the biologist at every step in his investigations; that in referring it to any general biological principle, such as adaptation, we are only referring it to itself, not explaining it; that no explanation will be attainable until the conditions of its coming into existence can be subjected to experimental investigation so as to correlate them with those of processes in the nonliving world."

*A. Mathematics and Physics.*—The presiding officer of this section was R. T. Glazebrook, F. R. S., who, in opening, expressed his regret at the inability of Prof. Clifton to fill the place of president of the section, which nomination he had accepted from the council. A brief retrospect of the prominent events in the sciences pertaining to the section that had occurred during the year followed, including mention of Barnard's discovery of the fifth satellite of Jupiter at the Lick Observatory. The electrical standards proposed at Edinburgh had been accepted by France, Germany, Austria, and Italy, and had been ratified by the congress held in Chicago. Griffith's redetermination of the mechanical equivalent of heat and Rowland's table of standard wave length were among the investigations completed. Lord Rayleigh's work on the intensity of light reflected from water and mercury at nearly perpendicular incidence, Dewar's experiments on the liquefaction of oxygen and nitrogen on a large scale, were referred to.

Mr. Glazebrook then took up the more special subject of his address and discussed the various optical theories. Starting with the statement that "light is propagated by an undulatory motion through a medium which we call the ether is now an established fact," he discussed the emission theory advanced by Descartes, and the undulatory theory of Hooke; then, passing to the treatment of the subject by Newton, he led the way down through the researches and opinions of Huygens, Young, and Fresnel to the more recent writings of Navier, Poisson, and Cauchy. Finally he took up the views of Lord Kelvin, and spoke of the application of electricity to explain the theory.

"Still such a theory is not mechanical, as we have no satisfactory mechanical theory of the electro-magnetic field. But the theory of the quasi labile ether may be applied, and gives two analogies according as we regard the density of

the medium to be analogous to electrostatic inductive capacity or to magnetic permeability. The former gives results consistent with Maxwell's equations for the electric stresses, but is more difficult to grasp. According to these analogies an electrified conducting sphere is not a body charged with a quantity of something we call electricity, but a surface at which there is a discontinuity in the rotation impressed upon the medium or in the flow across the surface, for in the conductor a viscous resistance to the motion takes the place of rigidity. No permanent strain can be set up. From this standpoint we consider electrical force as one of the manifestations of some action between ether and matter. There are certain means by which we can strain the ether; the friction of two dissimilar materials, the chemical action in a cell are two; and when, adopting this second analogy, this straining is of such a nature as to produce a rotational twist in the ether, the bodies round are said to be electrified; the energy of the system is that which would arise from the presence over their surfaces of attracting and repelling matter, attracting or repelling according to the inverse square law. We falsely assign this energy to such attractions instead of to the strains and stresses in the ether."

Among the important papers presented before this section were: "The Period of Vibration of Disturbances of Electrification of the Earth," by J. F. Fitzgerald; "The Moon's Atmosphere and the Kinetic Theory of Gases," by G. H. Bryan; "Reflection from Corrugated Surfaces" and "Grinding and Polishing of Glass Surfaces," by Lord Rayleigh; "On the Piezo-Electric Property of Quartz" and "On a Piezo-Electric Pile," by Lord Kelvin; "Caustic Curves," by J. Larmor; "Sun Spots and the Solar Envelope," by Rev. F. Howlett; "On Electric Interference Phenomena," by E. H. Barton; "On the Passage of Electric Waves through Layers of Electrolyte," by G. H. Yule; "On the Magnetic Shielding of Two Concentric Spherical Shells," by Arthur W. Rücker; "The Construction of Specula for Reflecting Telescopes," by A. Schafarik; "Physics Teaching in Schools," by W. B. Croft; and "On Standards of Low Electrical Resistance," by J. Viriamu Jones. Besides the foregoing, reports of committees on special topics or of individuals were received and discussed as follows: Report of the Committee on Solar Radiation; report on our Present Knowledge of Electrolysis and Electro-Chemistry; report of the Committee on Earth Tremors; report of the Committee appointed to investigate the Earthquake and Volcanic Phenomena of Japan; and the report of the Electrical Standards Committee. Also the question of "Physics Teaching in Schools" formed the theme for discussion at one of the sessions of this section.

*B. Chemistry.*—This section was presided over by Prof. James Emerson Reynolds, M. D., Sc. D., F. R. S., of the University of Dublin. He called attention to the fact that at the Nottingham meeting of the association in 1866 the president of the chemical section had spoken on the place of "Chemical Science in Medical Education." There was still a need for a fuller chemical education in medicine—along the line of principles rather than knowledge of compounds. In the

review of the progress of chemistry mention was made of the artificial production of the diamond form of carbon; also of the researches of Perkins on electro-magnetic relation; of Rayleigh on the relative density of gases; of Dewar on chemical relations at extremely low temperatures; of Clowes on exact measurements of flame-cap indications afforded by miners' testing lamps; of Horace Brown and Morris on the chemistry and physiology of foliage leaves; but the work accomplished is too important to be lightly treated, hence, to paraphrase an ancient formula, "Are they not written in the books of the chronicles we term 'Jahresberichte,' 'Annales,' or 'Transactions and Abstracts,' according to our nationality?" The need of a means of getting at the vast store of facts laid up in records was discussed, and the statement made that the Chemical Society of London had in view the compilation of a subject-matter index. His own work on the derivatives of thiourea showed the existence of over 600 substances, the knowledge of many of which had been forgotten, testified to the value of such subject indexes. Various physico-chemical problems were referred to, notably the recent discussion between Armstrong and Hartley. The remainder of the address was devoted to "comparative chemistry." The many analogous compounds of the two tetral elements carbon and silicon were pointed out, and the researches of Friedel, Crafts, and Ladenburg discussed. Until recently no well-defined compounds of silicon were known to include nitrogen, but at present many of these have been discovered. The relation borne by silicon in minerals was discussed and the structure of the natural silicates referred to, in which mention was made of the work of Prof. F. W. Clarke, of the United States Geological Survey. In conclusion he indicated the relation existing between silicon, aluminum, and oxygen in mineral compounds as possibly foreshadowing the relation existing between carbon, nitrogen, and hydrogen in living organism at a later stage of the earth's history. "Thus while the sedimentary strata contain remains which come down to us from the very dawn of life on this globe, the rocks from whose partial disintegration the preserving strata resulted contain mineral records which carry us still further back, even to Nature's earliest efforts in building up compounds similar to those suited for the purpose of organic development."

The following papers were presented before the section: "On the Preparation and Properties of Nitride of Iron," by G. J. Fowler; "Specimens of Cyano-Nitride of Titanium obtained from Ferro-Manganese," by T. W. Hogg; "The Iodine Value of Sunlight in the High Alps," by S. Rideal; "The Expansion of Chlorine and Bromine under the Influence of Light," by A. Richardson; "The Present Position of Bacteriology, more especially in its Relation to Chemical Science," by Percy Frankland; "Remarks on the Chemistry of Bacteria," by R. Warington; "Fermentation in Connection with the Feather Industry," by J. T. Wood; "Explosions in Mines with Special Reference to the Dust Theory," by H. B. Dixon; "On the Red Coloration of Phenol," by C. A. Kohn; "On Ethylbutane Tetracarboxylate and its Derivatives," by Bevan Lean; and "Apparatus for Extraction of or

Analysis of Gases dissolved in Water," by Edgar B. Truman. Among the reports presented were the report of the Committee for obtaining an International Standard for the Analysis of Iron and Steel; report of the Committee for Investigating the Action of Light upon Dyed Colors; report of the Committee on the Action of Light on the Hydracids of the Halogens in the Presence of Oxygen; and report of the Committee on Isomeric Naphthalene Derivatives. An interesting feature of the meeting of this section was an exhibition of the complicated and expensive apparatus used by the French chemist Moissan in his successful effort in isolating the element fluorine. The exhibition was made by his chief assistant, M. Meslans.

C. *Geology*.—Mr. J. J. H. Teall, M. A., F. R. S., Secretary of the Geological Society, presided over this section, and his address dealt mainly with the theories relating to the origin of rocks with a leaning toward the uniformitarian view. He said although enormous progress has been made in petrographical sciences during the last hundred years, there has been comparatively little advance so far as broad, general theories relating to the origin of rocks is concerned. He referred to the views of Hutton published in 1788, claiming that igneous action was the cause of the formation of certain rocks, which held their own for many years against the views of the Wernerian school, who argued in favor of aqueous action, but with the lapse of time there has come a tendency "to hark back to a modified form of Wernerism. This tendency can be largely traced to the recognition of evolution as a factor in biology and physical science." There is no *a priori* reason why we should believe that any of the rocks we now see were formed during the earlier stages of planetary evolution. He then considered whether the present state of petrographical science renders uniformity untenable as a working hypothesis, and showed by numerous illustrations the feasibility of uniformity, notably by the statement of the recent discovery of *olenellus* high in the stratified rocks that unconformably overlie the Torridon sandstone has placed its pre-Cambrian age beyond all doubt. Concerning the igneous rocks, he referred to the work by Samuel Allport, who proved the essential identity of ancient and modern volcanic rocks by the application of precise petrographic methods. His conclusions have prevailed, although when presented there was a very general belief that the Tertiary and pre-Tertiary rocks were radically distinct. Mr. Teall also sketched in broad outline the theories of thermal and dynamic metamorphism which are attracting so much attention at the present day. He also indicated as the most promising lines of investigation in this department of geology, crystalline schists and gneisses. In studying the crystalline schists, nothing, perhaps, he said, strikes one more forcibly than the evidence of crystal-building in sold rocks. Chatolite, staurolite, andalusite, garnet, albite, cordierite, micas of various kinds, and many other minerals, have clearly been developed without anything like fusion having taken place. Besides other facts cited he said that it was highly probable that by studying the metamorphic action surrounding plutonic masses, we may gain an insight into



the causes which produced the crystalline schists of sedimentary origin, just as by studying the intrusive masses themselves and noting the tendency to petrographical differentiation, especially at the margins, we may gain an insight into the causes which have produced the gneisses of igneous origin.

Among the papers of special note presented before this section were the following: "On the Petrological Features of the Dissected Volcano of Crandall Basin, Wyoming," by Prof. Joseph P. Iddings, of the University of Chicago, and "On the Genetic Relations of the Basic Eruptive Rocks of Gran," by Prof. W. C. Brögger, of Christiania University, Sweden. Other papers were: "On Structures on Eruptive Bosses which resemble those of Ancient Gneisses," by Sir Archibald Geikie; "On Berthelot's Principle applied to Magmatic Concentration," by A. Harker; "The Igneous Rocks of Barnavave, Carlisle," by W. J. Sollas; "On the Derbyshire Toadstone," by Arnold Bemrose; "On the Geology of Central East Africa," by Walcott Gibson; "Inclosures of Quartz in Lavas of Stromboli and Strombolio," by Johnston Lewis; "On the Glaciation of Asia," by Prince Krapotkin; and "On Some Assumptions in Glacial Geology," by Prof. Bonney. "The Place of Geology in Secondary and in Professional Education" was considered in the section and discussed by several distinguished authorities. During the meeting a joint gathering of Sections C and E, under the presidency of Sir Archibald Geikie, was held in order to discuss the limits between geology and physical geography, and a joint meeting of Sections C and D was held, under the presidency of J. J. H. Teall, to discuss fossil and recent coral reefs.

*D. Biology.*—This section was presided over by Rev. H. Baker Tristram, D. D., LL. D., F. R. S., Canon of Durham, who spoke as an Old World naturalist, whose researches had been not in the laboratory or with the microscope, but on the wide desert, the mountain side, and the isles of the sea. He referred to the fact that this year is the centenary of the death of Gilbert White, who is regarded as the father of field naturalists. Although others had preceded him, he was the first observer to recognize how much may be learned from the life habits of birds. A century and a half ago it had not come to be recognized that distribution is, with morphology and physiology, a most important factor in determining the facts of biology. Two typical examples of oceanic islands were contrasted. In the Sandwich Islands there is scarcely a passerine bird in its indigenous fauna which can be referred to any genus known elsewhere, while in the Canary Islands the process of differentiation is only partially accomplished. Concerning the migrations of birds, much less aid had been contributed by the observations of field geologists than might have been expected. Observation had answered the question, Whither? but a true answer to the Why? had not been obtained. We have arrived at a fair knowledge of the When? of migration; of the How? we have ascertained a little, but very little. Illustrations from Dr. Tristram's own observations were cited on these various points, and he also called attention to the exceptional migrations, not the mere wanderings

of waifs and strays, nor yet the uncertain travels of some species, but the colonizing parties of many gregarious species which generally travel from east to west or from southeast to northwest, after intervals sometimes of many years, or sometimes for two or three years in succession. These peculiarities still remained unexplained, although the sense of direction unconsciously exercised may be submitted as a working hypothesis. Another question which the field naturalist has failed to explain is whether the much-disputed topic of mimicry is protective or aggressive. Various illustrations were cited among birds, and then he referred to similarity, claiming that similarity without mimicry was possible. Cases of similarity in botany were mentioned, and the curious case of the fruit in Japan which absolutely mimics the alpine strawberry in the minutest particulars, in its runners, its blossoms, and fruit, save alone that the fruit is simply dry pith. In closing, he made reference to the severance of the last link with the pre-Darwinian naturalists in the death of Sir Richard Owen. He accumulated facts on the fossil remains that came to his hands till he won the fame of being the greatest comparative anatomist of the age. In his old age Sir Richard had said: "The known is very small compared with the knowable, and we may trust in the Author of All Truth, who, I think, will not let that truth remain forever hidden."

The following were among the more important papers presented before this section: "The Physico-Chemical and Vitalistic Theories of Life," by J. S. Haldane; "Malformation from Prenatal Influence," by Russel Wallace; "The Ætiology and Life History of some Vegetal Galls, and their Inhabitants," by G. B. Rothera; "Seals and Whales seen during a Voyage to the Antarctic," by W. S. Bruce; and "The Wings of the Archæopteryx and other Birds," by C. Herbert Hurst. The physiological department of this section held a single meeting, which was presided over by Prof. J. N. Langley, and several papers read. Notably a "Report on the Physiological Action of the Inhalation of Oxygen in Asphyxia, more especially in Coal Mines." Also a report of the Committee on the Legislative Protection of Wild Birds was read and discussed.

*E. Geography.*—The presidential address in this section was delivered by Henry Seebohm, F. L. S., F. Z. S., Secretary of the Royal Geographical Society. He began by calling attention to the statement that the foundation of all geography is exploration, and that its scientific study requires a knowledge of cartography and of meteorology or climatology. These facts he elaborated by discussing them in special reference to the polar basin. There is only one polar basin, for the distribution of land and water round the south pole is almost the converse of that round the north pole. The history of the exploration of the polar basins is a long and tragic one. In recent years two visits to Greenland are worthy of note: that of Lieut. Peary, who reached 82° north latitude, and added material evidence to show that Greenland is an island, and that of Dr. Nansen, who crossed the continent of Greenland at about 64° north latitude, reaching an altitude of 9,000 feet. Both of these explorers



are already on their way in second attempts to reach the long-hoped-for pole.

Nansen expects to achieve his aim by following certain currents. One of the most important physical features of this polar basin is its gigantic river systems. The Yenisei drains an area of one half that drained by the Amazon. The Yukon and Mackenzie are also enormous rivers. The latter flows for more than 1,000 miles, with a width of one mile. The glaciers are likewise large, those of southern Alaska being among the greatest in the world. Along the shores of the Arctic Ocean is a fringe of bare country, sometimes steep and rocky, abruptly descending in more or less sharp cliffs and sites of precipices to the sea, but more often sloping gently down in mud banks and sand hills representing the accumulated spoils of countless ages of annual floods. In Norway this belt is called the Fjeld, in Russia the Tundra, and in America Barren Grounds. It gradually stretches back through bogs and swamp land until the forests are reached. Its flora consists chiefly of the lower orders of plants, and the fauna consists largely of birds. The geology of the polar basin needs more study, and students of the glacial epochs in the more temperate climates may acquire much information from the appearance of the arctic regions. The succession of seasons in these high latitudes deserves mention. The approach of winter is slow, the flowers fade and the birds migrate, but with the summer it is different. It comes quickly. The sun shines and the ice breaks; then of a sudden the birds are there and vegetation comes. There is no spring, but a hot summer that begins toward the end of May. The rapidity of the change is due to the melting of the snow under the frozen crust.

Twenty-seven papers were read and discussed before this section, among which were the following: "A Journey across Australia," by Guy Boothby; "The Islands of Chiloe," by Mrs. Lilly Grove; "The Native Tribes of the Congo Basin," by Herbert Ward; "The Physical Geography of the Sea between Scotland and the Faroe Islands," by H. N. Dickson; "The Physical Geography of the Clyde Sea Area" and "A Bathymetrical Survey of the English Lakes," by H. R. Mill; "Notes of an Antarctic Voyage," by W. S. Bruce; "On the Bengal Duars," by Edward Deawood; "On Recent Exploration in Tibet," by E. Delmar Morgan; and "Uganda and its People," by Captain Williams. Also reports of the Committee on Scottish Place-Names, and Committee on African Climatology, were read. An interesting feature of the meetings of this section was the discussion concerning the sending of a purely scientific expedition to antarctic waters. Mr. W. S. Bruce announced that he was prepared to spend a year with an assistant who had volunteered to accompany him on South Georgia or on Graham's Land, if he could be landed there, and to undertake systematic scientific work during that time if his passage money and maintenance were paid for. The proposition was received with enthusiasm, and a subscription list promptly started for that purpose.

F. *Economic Science and Statistics*.—The presiding officer of this section was Prof. Joseph S. Nicholson, D. Sc., who fills the chair of Political Economy in the University of Edinburgh.

He said: The so-called orthodox or classical political economy so far from being dead is in full vigor, and that there is every sign of a marked reaction in favor of its principles and methods. The method practically adopted by Adam Smith and Ricardo, and reduced to scientific form by Mill and Cairnes, and quite recently by Dr. Keynes, must still be regarded as fundamental. Facts are the fossils of the historian, and while impression may be good art, it is bad science; hence care must be taken to restrict political economy to its proper limits without wandering off into speculation. The method of the so-called orthodox English economists has only been modified and supplemented, not revolutionized and supplanted by the mathematical methods of recent writers. According to the traditional English view, it is not the business of the economist to decide all the disputes that may arise even regarding fundamental questions in ethics, religion, fine art, education, public law, administration—to decide, in a word, the first duty of man and the last duty of governments. His sphere is much more limited, and the limits have been indicated with tolerable precision by the classical English economists. In technical language, political economy is the economy of utility. From the old inquiry "How nations are made wealthy," to the new inquiry "How nations are made happy," it seems a natural and easy transition. For the essence of wealth is to possess utility, to satisfy desires, to create happiness. Accordingly it seems plausible to maintain that the economist ought to discover by his calculus of utility those principles of production and distribution that will lead to most happiness. In closing, he said: "Political economy has a vast literature, and students will not find all the good concentrated in the last marginal increment. The old must be mastered before the new can be appreciated. A portion of truth just rediscovered for the hundredth time is not of such value as a body of doctrines that have been developed for more than a century by economists of repute. Vaster than the literature of political economy is the economic experience of nations. The first duty of the legislator is to take account of the natural forces with which he must contend, and the classical economists have made a survey and estimate of these forces which, based as it is on the facts of human nature and the experience of nations, it would be willful folly to overlook."

The following-named papers were read and discussed before the section: "Poor Law and Old Age," by Rev. J. Frome Wilkinson; "Nottingham Lace and Fashion," by J. S. Nicholson; and "Progress of the Newspaper Press, and the Need of a Consolidation and Reform of the Laws affecting Newspapers," by J. A. Strahan. Discussion on the subjects of "Agricultural Depression" and the "Currency Problem" occupied much of the time at two sittings.

G. *Mechanical Science*.—This section was presided over by Jeremiah Head, F. C. S., past president of the Institute of Mechanical Engineers.

Mechanical science, he said, had been built up entirely upon observation and experiment, and the natural laws which had been induced therefrom by man. After illustrating this fact by citing instances from the animal kingdom, Mr.

Head proceeded to consider how far man was in his natural condition, and had become by aid of mechanical science able to compete successfully with other and specially endowed animals, each in his own sphere of action. Without mechanical aids a man could walk from 3 to 4 miles an hour, but with a cycle he could go 27·1 miles an hour. Many interesting illustrations contrasting the accomplishments of man with similar accomplishments by animals and birds were given. In bringing his address to a close he considered what man had done and what he might be able to do in aerial navigation by aid of contrivances which, as in the case of railway locomotives and ocean steamers, were propelled by a power other than his own body, and, in conclusion, referred to the consequences that might result from the eventual exhaustion of fuel supply. Mechanical appliances involving the consumption of fuel had for a century at least been multiplying with alarming rapidity. Terrible waste of these natural stores of fuel was daily going on in almost every department of work. Once exhausted, they could never be replaced. They had been drawn upon to some extent for 1,000 years, and largely for more than a century. Authorities say that another thousand years will exhaust all the more accessible supplies. However, assume that our sources of fuel are not exhausted in 5,000 years. What then? As far as we can foretell, our only motive powers will then be wind and water and animals, and our only motive mode of transit sailing and rowing, driving, cycling, riding, and walking. It has been estimated that in not less than 5,000,000 and not more than 10,000,000 years the sun will have become too cold to support life of any kind in this planet. Between the 5,000 years when fuel will certainly be exhausted and the 5,000,000 years when all life is probably to have been extinguished there is still 4,995,000 years, when, according to our present appearance, man will have to give up his hard-earned victories over matter and animals, and the latter will again surpass him each in his own element, because he has no fuel.

Among the papers read and discussed before this section were the following: "The Automatic Balance of Reciprocating Mechanism," by Worly Beaumont; "The Utilization of Waste-Water Power by Electricity," by Albion T. Snell; "An Automatic Gun Separator," by William S. Lockhart; "On Ventilating Fans," by Mr. Walker; "Relative Cost of Conductors with Different Systems of Electrical Power Transmission" by Gilbert Kapp; "Warming and Ventilating," by Frank Ashwell; "Watchmaking by Machinery," by T. P. Hewett; "Electrical Conductors," by E. Payne; and "Flashing Lights for Marine Purposes," by O. T. Olson. Likewise descriptions of various improved machinery were given, notably new forms for lace and hosiery manufacture. Reports of the Committees on Graphic Methods and on Dryness of Steam in Boiler Trials were read and discussed. Concerning the revival of watchmaking in England, "Nature" says: "A large factory has been built and the most improved appliances introduced. These, of course, are largely American in origin, but it is satisfactory to know that the beautiful machine tools, such as are used by the Waltham and Elgin Watch Companies, can now be made in England,

and are equal to the productions of the United States." Examples of these machines were exhibited by T. P. Hewett in his paper read before the section.

H. *Anthropology*.—The presiding officer of this section was Dr. Robert Munro, F.R.S.E., of Edinburgh.

Anthropology embraces all the materials bearing on the origin and history of man, but as the materials are so comprehensive and diversified, it is customary to separate anthropology into two divisions, according as the accumulated information relates to the structure and functions of a man's body—called anthropology—and according as the materials relate to the works he has produced—called archaeology. Then, taking up the special topics of the address, Dr. Munro proceeded to consider, first, the mechanical and physical advantages of the erect position; second, the differentiation of the limbs into hands and feet; and, third, the relation between the more perfect condition of these organs and the development of the brain. The human foot was admirably adapted to be both a pillar for supporting the weight of the body and a lever for mechanically impelling it forward. Concerning the hand, it was the most complete and perfect mechanical organ Nature had yet produced. The position of this perfect piece of mechanism gave to man a superiority in attack and defense over all other animals. Hence, there was in man a combination of structures and functions, sufficiently unique in its entirety to place him in a category by himself. The brain, the undoubted organ of the mind, gave to man's life functions their most remarkable character. The act of unconscious sensation invariably took place through the instrumentality of a few nerve cells, whose functional activity required to be renovated in precisely the same way as the muscular force expended in walking. It had been shown that the homology that characterized the structural elements of the bodies of animals extended also to the component parts of their respective brains. We should therefore naturally expect an increase of brain substance in every case in which the functional activity of a specific organ was extended. Man's brain and his intelligence were certainly correlated to each other, but to maintain that the amount of intelligence was directly proportional to the size of the brain was to strain the laws of legitimate inference. In drawing any conclusion of such a nature from the bulk of the brain substance there were modifying influences which could not be disregarded, such as the amount of cranial circulation and the quality of the brain cells. The highest products of intellectuality were nothing more than the transformation of previously existing energy, and it was the power to utilize it that alone found its special organic equivalent in the brain. The development of the large brain of man corresponded with that of his characteristic attributes, more especially with those consequent on the attainment of his upright position.

The following-named papers were read and discussed by the section: "The Ethnographic Aspect of Dancing," by Mrs. Lilly Grove; "Anthropometric Work in Large Schools," by Bertram C. A. Windle; "On the Origin and Development of Early Christian Art in Great Britain



and Ireland," by Romilly Allen; "Ancient Metal Implements from Egypt, and the Discoveries of Dr. Flinders Petrie and Mr. Bliss at Tel-el-Hevi," by J. H. Gladstone; "Morphological Characters of the Abyssinians," by J. G. Garson; "Ethnographical Notes relating to the Congo Tribes," by Herbert Ward; "Head Form of the Dards and of the Siah Post Kafirs," by John Beddoe; "Manners and Customs of the Primitive Indians of America," by Miss J. M. Welch; "Australian Natives," by Miss J. A. Fowler; "On the Structure of Lake Dwellings," by Robert Munro; "The Prehistoric Evolution of Theories of Punishment, Revenge, and Atonement," by G. Hartwell Jones; and "The Mad Head," by Crochley Clapham. Besides the foregoing, reports of various section committees were received and acted on. These included report of the Anthropometric Laboratory Committee, report of the Physical Deviations Committee, report of the committee to make an ethnological survey of the United Kingdom, report of the Abyssinian Committee, report of the Uniformity in Spelling Committee, and report of the North-western Tribes of Canada Committee.

**Popular Features of the Meeting.**—On the evening of Sept. 15 a popular lecture on "Flame" was delivered by Prof. Arthur Smithells, of Leeds, and on the following evening one on "Spontaneous Combustion" was delivered by Prof. Vivian Lewes, while on the evening of Sept. 18 Prof. Victor Horsley lectured on "The Discovery of the Physiology of the Nervous System." Other entertainments included a reception by Sir John Turner at Mapperley, one by the Mayor in Castle Museum building, a garden party by Lord Middleton at Wollaton Hall, and on Saturday, Sept. 16, excursions were provided for to Sherwood Forest, Haddon Hall, Buxton, Burleigh, Southwell, Minster, Lincoln, Belvoir Castle, and Donnington Park. On Association Sunday many of the local pulpits were occupied by the distinguished scientists at the meeting, including the Bishop of Southwell, Rev. Robert Hartley, Rev. Dr. Bonney, and others. At the close of the meeting extended excursions were provided for those who cared to indulge in them. An innovation in the shape of a special performance of "Pharaoh," by Wilson Barrett and his company, to which the members of the association were invited by the local committee, was one of the events of the meeting. A novel but valuable feature of the meeting was the collection of apparatus and exhibits in the physical and chemical departments of the University College. Manufacturing firms sent their newest apparatus, and private owners lent many objects of scientific interest.

**Attendance and Grants.**—The attendance was considerably less than that reached at the Edinburgh meeting; only 1,661 members were enrolled as present, and the receipts were but £1,653. As the grants for research are dependent upon this collection, they were correspondingly less than those of last year, and as approved by the General Committee amounted to £705, distributed as follow: Electrical standards, £25; meteorological photographs, £10; mathematical tables, £15; solar radiation, £15; national physical laboratory, £5; wave-length tables, £10; iron and steel analysis, £15; action of light on

died colors, £5; erratic blocks, £15; fossil phyllopoda, £5; geological photographs, £10; shell-bearing deposits at Clara, etc., £20; eurypterids of the Pentland Hills, £5; sections of Honesfield slate, £25; earth tremors, £50; exploration of Calf Hole Cave, £5; Naples zoological station, £100; Plymouth zoological station, £15; zoölogy of Sandwich Islands, £100; zoölogy of Irish Sea, £40; structure of mammalian heart, £10; climatology of tropical Africa, £10; observations in South Georgia, £50; exploration in Arabia, £30; economic training, £10; anthropometric statistics, £5; ethnography of United Kingdom, £10; the Glastonbury village, £40; anthropometry in schools, £5; mental and physical condition of children, £20; and corresponding societies, £25.

**Next Meeting.**—As decided last year, the Association will meet in 1894 on Aug. 8, in Oxford. For 1895 invitations were received from Toronto, Canada, Bournemouth, and Ipswich, which were duly discussed, and a final decision was reached for Ipswich. The application from Toronto was favorably regarded, and its acceptance in the near future is extremely probable. The Marquis of Salisbury was nominated as president for the Oxford meeting, and among the claims mentioned in his favor for that place were the facts that he was "a true man of science, a member of the council of the Royal Society, and Chancellor of the University of Oxford." The General Committee reappointed Sir Douglas Galton and Vernon Harcourt general secretaries, G. Griffith assistant secretary, and Dr. A. W. Rücker general treasurer.

**Australasian.**—The fifth annual meeting of the Australasian Association for the Advancement of Science was held in Adelaide, South Australia, during the week beginning on Sept. 25, 1892. The officers were as follow: President, Ralph Tate. Section Presidents: A, Astronomy, Mathematics, Physics, H. C. Russell; B, Chemistry, C. N. Hake; Geology and Mineralogy, Sir James Hector; D, Biology, C. W. De Vis; E, Geography, A. C. Macdonald; F, Ethnology and Anthropology, Rev. S. Ella; G, Economic Science and Agriculture, H. C. L. Anderson; H, Engineering and Architecture, J. R. Scott; I, Sanitary Science and Hygiene, A. Mault; J, Mental Science and Education, Henry Laurie. Permanent Secretary, Archibald Liversidge. General Treasurer, H. C. Russell.

**Opening Session.**—The first business meeting was held on Sept. 26, at the University of Adelaide, when the arrangements effected by the local committee were accepted; also, new officers were elected and preliminary arrangements made for the next meeting, to be held in Brisbane. It was further agreed that in 1896 the meeting should be held in Sydney, New South Wales. Various other matters pertaining to the management of the association were discussed and acted on. The first general session was held in the town hall, on the evening of Sept. 26, when Sir James Hector, a past president (1891), called the meeting to order, and on behalf of Sir Robert Hamilton, president of the previous meeting, who was not present, inducted as his successor Prof. Ralph Tate. An address of welcome from the Mayor was then received and acknowledged, after which the inaugural address of the new president was delivered.

*President's Address.*—Choosing as his subject “A Century of Geological Progress,” Prof. Tate observed that he had “read a hundred volumes” to produce the modest pamphlet of his address.



RALPH TATE.

The history of the progress of geology in Australia is intimately associated with that of its geographical discovery, and of its advancement in scientific culture; hence it followed that for the first three or four decades of this century the geological knowledge was almost entirely derived from maritime surveys. In more recent years this information had been supplemented by inland exploration, followed in time by the systematic geological surveys in New South Wales and Victoria. Having thus outlined his address, Prof. Tate then began the treatment of the subject more in detail, referring at the outset to the geological and other scientific researches of Vancouver, who in 1791 discovered King George's sound; then, carrying his hearers step by step past the discovery of gold, in 1851, in New South Wales, followed by that of richer deposits in Victoria during the same year, down to the foundations of the universities in Melbourne and Sydney, and describing the various surveys of the colonies, he culminated with mention of the publication of the geological map of Australia in 1887. The glacial periods were discussed, and the information—most of which is quite recent—bearing on this interesting topic presented in detail. The imperfection of the geological record, and the utter impossibility of reconciling the order of succession in the Australian stratified deposits with those of other countries, were clearly pointed out by the speaker. The various circumstances tending to retard the progress of geological science in Australia were mentioned, and the pernicious practice of sending palæontological data abroad for study, in lieu of keeping them at home, deplored. As to the antiquity of continental Australia, the speaker contended that much of the evidence on which the views of this subject de-

pended was illogical. The physical characters of the interior of the continent were rehearsed, and he closed with a plea for chemical geology and microscopic petrology. Geologists had been too much occupied with the golden harvests of palæontology and stratigraphy, and consequently had ignored the less attractive studies.

*A. Astronomy, Mathematics, and Physics.*—This section was presided over by H. C. Russell, Government Astronomer of New South Wales, who delivered an address on “Astronomical Photography,” in which he paid pleasant compliments to the work of the elder Draper and to the more recent labors of the American astronomers, Bond, Pickering, and Hale. Among the papers presented before this section were the following: “Meteorological Work in Australia,” by Sir Charles Todd; “The Construction of Pendulum Apparatus for Differential Observations of Gravity,” by E. F. J. Love; “Tides of South Australia,” by R. W. Chapman and Capt. Inglis; “On the Earthquake Intensity in Australia” and “The Origin of the Earthquake of Jan. 27, 1892,” by G. Hogben; “The Application of Mathematics to Actuarial Science,” by J. J. Stuckey; “Some Difficulties in making Exact Observations in Astronomy,” by W. E. Cooke; “Construction and Use of an Azimuth Diagram,” by Capt. Weir; “The Effect of the Length of a Solenoid on the Form of its Equipotential Surfaces,” by C. C. Farr; “On the Thermo-Electric Diagram,” by W. H. Steele; “Stokes Theorem” and “From Numbers to Quaternions,” by G. Fleuri; also the report of the Seismological Committee was read, and finally a resolution passed “that this section desires to express a hope that the Government of Tasmania may be able at an early date to establish the proposed Leake Observatory at Hobart.”

*B. Chemistry.*—The presiding officer of this section was C. N. Hake, Inspector of Explosives to the Government of Victoria, who spoke on “Recent Progress in Manufacture of Explosives.” He reviewed the recent high explosives, and especially the English “cordite.” Among the papers read before this section were the following: “The Production of Gold Nuggets and the Mode of Occurrence of Gold in Veins,” by A. Liversidge; “Hyponitrites,” by D. H. Jackson; “The Use of Ethyl Nitrite for the Preparation of the Hyponitrites,” by D. Avery; “On the Reduction of Nitric Oxide by Sodium Amalgam in the Presence of Alcohol,” by G. W. Macdonald; “Osmotic Pressure,” by Orme Masson; “On the Experimental Investigations of Osmotic Pressure,” by Orme Masson and J. B. Kirkland; “Notes on Determinations of Sugar in Samples of Musts of Victorian Wines,” by W. Percy Wilkinson; “Wet Treatment for Copper and Gold in Australia,” by G. Sutherland; “The Determination of Nitrates in Certain Waters,” by E. H. Rennie; and “Certain Modifications in the Electrolytic Method of determining Copper in its Ores,” by T. C. Cloud.

*C. Geology and Mineralogy.*—Sir James Hector, Director of the Geological Survey of New Zealand, was the presiding officer of this section, who delivered a lecture on “The Progress of Geology in the Southern Hemisphere during the Past Year,” confining himself, however, chiefly



to the recent discoveries and revelations in New Zealand. Among the papers presented before this section were the following: "Notes on the MacDonnell Range," by H. Y. L. Brown; "Certain Plant Bearing-Beds of Victoria," by G. B. Pritchard and T. S. Hall; "On Certain Foraminiferal Rock" and "A Complete List of the Fossil Foraminifera of Australia," by Walter Howchin; "The Distribution of the Graphitolidæ in the Rocks of Castlemaine," by T. S. Hall; "The Application of Photography to Geological Surveys," by J. H. Harvey; "Glacial Deposits of Bacchus Marsh, Victoria," by George Sweet and Charles Brittlebank; "The Evidences of Recent Glaciation in New South Wales," by G. J. Statham; "Notes on the Volcanic Action in Eastern Australia," by T. W. E. David; "The Igneous Rocks of Southwestern Australia," by J. Dennant; "Systematic Application of Photographs as an Aid for making Geological Surveys," by E. P. Bishop; also reports from the investigation committee on evidence of glacial action in Australia during the Tertiary and post-Tertiary eras were presented.

D. *Biology*.—This section was presided over by C. W. De Vis, Curator of the Brisbane Museum, who spoke on the subject of "Life." His address was full, and treated of heredity, the study of biology, and biological laboratories. The following papers were read and discussed before the section: "The Geographical Distribution of Queensland Lichens," by J. Shirley; "The Flora of the Lower Glenelg River," by E. P. Eckert; "Botanical Nomenclature with Special Reference to Fungi," by D. MacAlpine; "The Biological Results of the Elder Exploration," by Ralph Tate; "Further Notes on the Land Planarians of Tasmania and South Australia," by Arthur Dendy; "Eggs of the Australian Breeders of the Plovers, Snipes, etc.," by A. J. Campbell; "Photomicrography as a Means of Illustrating Natural Objects," by W. B. Poole; "Vernacular List of Birds," by Col. Legge and A. J. Campbell; "Plea for a Rational Popular Nomenclature of Australian Plants," by M. Holtze; "Fauna Regions of Australia," by C. J. Hedley; "Necessity of ascertaining the Distribution of Australian Fauna," by Thomas Blackburn; and report of the committee appointed to report on the protection of native fauna.

E. *Geography*.—The presiding officer of this section was A. C. Macdonald, Secretary of the Victorian Branch of the Royal Geographical Society of Australasia, who delivered an address on "The Advance in Geographical Research and the Geographical Distribution of Man in his Progress toward Civilization." Among the papers presented before this section were the following: "On the Physiography and the Geographical Divisions of the Islands of the Fijian Group," by J. P. Thompson; "On the Physiography of South Gippsland, Victoria," by J. Stirling; "South Australian Nomenclature," by C. H. Harris; "The Advocacy of another Attempt to Find Traces of Dr. Leichardt," by F. Von Mueller; "The Results of the Elder Exploring Expedition to Central Australia," by J. W. Jones; and "Notes and Reminiscences of the First Crossing of the Australian Continent," by W. P. Auld.

F. *Ethnology and Anthropology*.—The Rev. S. Ella, of New South Wales, was the presiding officer of this section, and addressed the section on

"The Origin of the Polynesian Races. The following papers were read before the section: "On the Habits, Customs, Ceremonies, etc., of the Aborigines on the Diamantina, Herbert, and Eleanor Rivers in East Central Australia," by Francis H. Wells; "The Smoke Signals of the Australian Aborigines," by A. T. Margarey; "On the Survival of the Unfittest," by H. K. Rusden; "South Australian Physique and Mortality," by J. H. D. Davidson; "The So-called Wild Blacks at Poplitah," by A. F. Cudmore; "The Omeo and Monaro Aborigines, with a Description of the Stone Implements of the Latter Tribe," by R. Helms; and "The Stone Implements of the Aboriginal Tribes of the Seaboard of South Australia," by Walter Howchin.

G. *Economic Science and Agriculture*.—The presiding officer of this section was H. C. L. Anderson, formerly Director of Agriculture in New South Wales, who presented as his address a discourse on "The State of Agriculture and Agricultural Education in New South Wales." Among the papers read before this section were the following: "Experiments on Wind Pressure," by W. C. Kernot; "Practice of Road Making in South Australia," by C. T. Hargrave; "A Standard Pressure Gauge," by C. W. Smith; "The Laying Out of Towns," by J. H. Packard; "The Punishment of Criminals," by Justice Bunday; "The Physical Properties of the Ingredients of the Soil in Relation to Productivity," by J. G. O. Tepper; "Agricultural Wealth," by W. Smithers-Gadd; "Current Popular Fallacies on Taxation," by R. M. Johnson; "The Proper Method of Levying a Land Tax," by C. W. Adams; and "Deforestation in South Australia: Its Causes and Probable Results," by Walter Gill.

H. *Engineering and Architecture*.—This section was presided over by J. R. Scott, Lecturer in Charge of the School of Engineering, Canterbury College, Christchurch, New Zealand, whose address dealt with "The Direction of Engineering Progress." The following papers were presented before the section: "Transition Curves for Railways and Tramways," by S. Smeaton; "The Camera as an Accessory Instrument to the Surveyor," by C. Hope Harris; "End-Loading of Sheep Trucks," by J. C. B. Moncrieff; "Turbines," by Bernhard A. Smith; "An Architecture Racy of the Soil," by M. F. Cavanagh; "A Means of Distributing Oil on the Surface of the Sea," by T. Turnbull; "Water-Tube Boilers," by J. T. Noble Anderson; and "A New Form of Telemeter," by G. Knibbs.

I. *Sanitary Science and Hygiene*.—The meetings of this section were presided over by A. Mault, Secretary of the Central Board of Health, Tasmania, who chose "Urban Sanitation" as the subject of his presidential address. Among the papers presented were the following: "Artisan Dwellings," by Dr. Gault; "Construction of Hospital Wards" and "On the Axial Lines of Hospital Wards," by John Sulman; "Hospitals as a Means of teaching and spreading Sanitary Laws and Hygiene," by Miss Noble; "The Construction of Hospitals," by C. G. Owen Smith; "The Character of the South Australian Water Supply, embracing Analyses of Characteristic Potable Waters and their Bacteriological

Examination," by G. A. Goyder; "Reasons for connecting the High Death Rate of Adelaide and the Increasing Unhealthfulness of the Suburbs with Sewers and Sewer Gases, with Some Suggestions for further Investigation of the Subject," by Miss Martin; "The Disposal of Town Refuse," by J. Hardy; and "Spiroptera associated with Tuberculosis in Cattle," by Dr. Barnard and A. Park.

*J. Mental Science and Education.*—The presiding officer of this section was Henry Laurie, who holds the chair of Mental and Moral Philosophy at the University of Melbourne. His address was on "The Recent Progress and Present Position of Mental Science." The following papers were read before this section: "The Australasian Home-Reading Union," by Mrs. Wolstenholme; "The Federation of Australian Universities," by Rev. Canon Poole; "The Value of Technical Education to Artisans in the Building Trades," by Hillson Beasley; "The Education of Australian Girls," by Mrs. Kelsey; "Public Instruction and Public Defense," by John Shirley; "Some Predilections in Decorative and Pictorial," by Harry P. Gill; "Psychophysical Experiments," by E. F. J. Love; "The Training of Secondary Teachers," by P. Ansell Robin; "Ocular Education in Public Schools and its Bearing in Society," by A. E. Mueller; "Methods of Teaching in Use in the Primary Public Schools, South Australia," by M. M. Maughan; "A Plea for Practical Education," by W. Catton Grasby; and "The Simplification of Difficulties in the Relations between the Tonic Sol Fa, and Old Notations," by W. A. Jones.

*Entertainments.*—During the meeting the following evening lectures were given: On Sept. 25, "Prehistoric Man," by Dr. E. C. Stirling, of the University of Adelaide; and on Sept. 27, "Diprotodon and its Times," by C. W. De Vis, of the Brisbane Museum. Other entertainments included a garden party, given on the afternoon of Sept. 26 by the Earl of Kintore, the governor of the colony; a *conversazione*, given on Friday evening, Sept. 29, by the chief justice of the colony; a picnic, given on Sept. 30 by C. Willcox, Mayor of Adelaide in the National Park, which was then for the first time opened to the public; and an excursion, also on Sept. 30, to Hallett's Cove, especially interesting as exhibiting evidences of glacial action, thereby demonstrating the existence formerly of glaciers in Australia. At the close of the meeting a special trip, lasting several days, was made to the river Murray, in order to examine the gorge of that river and its fossiliferous cliffs; also to study the remarkable inliers of the archæan rocks near Mannum.

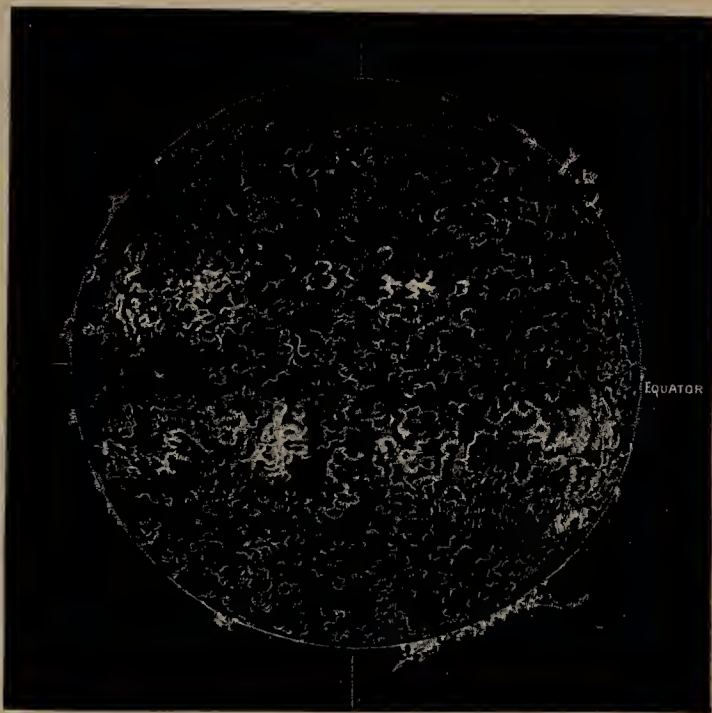
*Next Meeting.*—The sixth meeting of the association will be held in Brisbane, Queensland, during January, 1895, for which session

the Hon. A. C. Gregory was elected president; also, as local secretaries, J. Shirley and C. W. De Vis, and as local treasurer, A. Norton, were chosen.

### ASTRONOMY, PROGRESS OF, IN 1893.

The astronomical discoveries of 1893, while on a par with those of former years in general, fail to equal those that distinguished 1892, which for a decade at least have not been surpassed.

*The Sun.*—Much information regarding the physical constitution of the sun has recently been obtained by Prof. George E. Hale, at Kenwood Observatory, Chicago, by means of the spectroheliograph. He has succeeded in photographing the ultra-violet spectrum of both the chromo-



PROMINENCES AND FACULÆ ON THE SUN, APRIL 16, 1893.

sphere and the prominences. With a tangential slit placed at varying distances from the limb, the negative plate shows the reversal of many lines in the chromospheric spectrum. The instrument, as briefly as can be stated, consists of a powerful diffraction spectroscope, the collimator and viewing telescopes having object glasses of  $3\frac{1}{4}$  inches in diameter, the grating being ruled to 14,438 lines to the inch. In front of the photographic plate a second slit is so placed that the light of one line only in the spectrum, that of the fourth order, is allowed to fall on the plate. The plate and slit are moved simultaneously, and as the slit of the collimator passes across the image of the sun, the plate moves behind the second slit at the same rate, so that a complete image of the sun is seen on the particular line selected, the H and K lines being those most generally employed. By the use of a diaphragm to shut off the image of the sun, and by giving the plate and slit a slower motion, he photographs the whole of the prominences around the sun's limb, which process, by Prof. Hale's method, requires only two



minutes of time, while formerly an hour was necessary. He has also photographed the faculæ over the entire disk of the sun, instead of, as previously, near its limb.

The K line, which is dark in the solar spectrum, is always bright in the faculæ, so that a photograph of the entire sun may be taken by the K light alone; he having secured such a one with spots, faculæ, chromosphere, and prominences all beautifully shown on one plate, and this not a composite photograph, but a monochromatic picture of the sun given by K light only.

Prof. Hale's achievement in this direction has excited unusual interest among astronomers, and is certainly a great advance in solar physics.

We are now nearing the middle of the maximum period of sun spots. For scarcely a day during months past has the sun presented a spotless disk. The rare phenomenon of an equatorial sun spot has been observed, indicative, so considered, of the near approach to maximum of solar activity. See illustration on preceding page, from "Astronomy and Astro-Physics."

**The Moon.**—The moon will never cease to be an object of telescopic study. Evidence of change long entertained by some astronomers, and strenuously disputed by others, seems to be gradually strengthening, and that the moon is not an absolutely dead world may yet become an article of faith with lunar observers. Photography is constantly bringing to light features hitherto unmapped. Enlargement of the negatives of the Lick Observatory reveals the before unknown existence of a crater in the Mare Nubium between the southern end of the great "fault," known as the straight wall, and the northwestern side of Pilatus, in size twice as large as any other crater in its vicinity. Still its detection in this manner is not conclusive of change, as, being in a very unattractive neighborhood, it might easily have been overlooked. About a half mile eastward the negative reveals a delicate cleft, in shape resembling the Greek letter Zeta ( $\zeta$ ). Prof. Weinek estimates its length to be 5 miles, and its breadth  $2\frac{1}{2}$  miles.

Prof. W. H. Pickering, who from his mountain observatory at Arequipa, Peru, has made careful study of the moon, has discovered in the region of Plato reasonably good evidence of actual physical change having taken place within recent times. On the floor of Plato, the spot numbered 2, which heretofore has constantly attained in the scale of visibility no higher than 14, now ranks as 5; and No. 25 (No. 40 of Pickering's map), formerly considered as a bright point, is now a crater. He says: "It is perhaps only a coincidence, but it may be noted that the 3 craters which seem to have notably increased in size—viz., 2, 40, and 47—are all situated very near the edge of the floor, while the 3 which now seem less prominent than formerly—4, 31, and 7—are situated far apart and near the center."

Prof. Pickering says that No. 4 has never been seen by him as a crater; but Mr. A. S. Williams saw it as a crater as late as October, 1888. Measurements by Prof. Pickering with a magnifying power of 700 on No. 1 gave its diameter as 5,000 feet, and of Nos. 17 and 3 as 4,000 feet. The depth of No. 1, as determined by the length of the shadow cast inside the crater, was found to be 530 feet, assuming the bottom to be flat.

In the same manner the depths of Nos. 17 and 3 were ascertained to be 400 feet each.

**Jupiter.**—From his mountain observatory, with its unequaled atmosphere, Prof. Pickering has with great thoroughness studied the planet Jupiter and his satellites. The best results were secured with a magnifying power of 450 diameters on the 13-inch refractor. Under the most favorable atmospheric conditions for seeing, it appeared that the surface of the planet consisted of a uniform white mass of cloud, and that over this, stretched from pole to pole, lay a thin, gauzy veil of unequal density of a brown material not unlike our cirrus clouds. Where it accumulated in dense masses the belts are seen, while the thinner portions formed the spaces between them. Occasionally a round or elliptical hole of 1" to 2" in diameter was seen in this layer. These holes are the well-known white spots observed even with small telescopes.

The great red spot which, like a floating island having a motion of its own, for a dozen or more years has been, next to the belts, the most striking feature of the planet, was extremely faint, and seen only with great difficulty.

**Jupiter's Satellites.**—In October, 1892, Prof. Pickering, at Arequipa, Peru, began a series of rigid observations of the four principal satellites of Jupiter, and found the disk of the first satellite not circular but egg-shaped. It was unmistakably thus with powers of 700, 1,000, and 2,000. Numerous experiments were tried to discover whether the elongation was not an optical illusion. The next evening he was surprised to view it perfectly round, but later it again assumed an oval form. His assistant, Mr. Douglas, also saw it thus, and several other persons confirmed the observations, which indicated that the satellite, instead of being an oblate spheroid like Jupiter and the other primary planets, was a prolate spheroid whose rotation is accomplished in thirteen hours and three minutes, and which every six hours and thirty minutes became perfectly circular, remaining thus for half an hour, and the remainder of the time appearing more or less elliptical. Its direction of rotation, Prof. Pickering thinks, is retrograde.

The other satellites also, though not found spherical, yet instead of revolving end over end, as does the first satellite, were lengthened at right angles to their orbits, like the revolution of a watch if whirling suspended by its chain.

The third satellite presented an elliptical phase twice during each orbital revolution, at an interval of thirty-four hours after each conjunction with the planet. When this satellite is on the eastern side of its orbit, and presents an elliptical disk, the inclination of the major axis to the orbital plane is clearly shown. On this satellite a peculiar marking has been seen, which at first was thought to be a belt, but further observation indicated for it a more complicated structure, it usually appearing forked, with the prongs at an angle of 30° to 60°. The fork turned sometimes to the right and sometimes to the left, and sometimes a double fork was observed like the letter X turned sidewise. To determine the genuineness of this phenomenon of the belt, the eyepiece was changed, the micrometer and telescope turned, the head of the observer held at different angles, and the two

eyes alternately used, but it was seen the same under all these conditions. On seven nights when the satellite was between them and Jupiter a whitish spot was seen near the south pole, and on two nights when the satellite was beyond the planet, and shortly after passing superior conjunction, the north pole appeared slightly the brighter. From these and other circumstances he infers that it rotates on its axis synchronously with its revolution around the planet, as does our own moon.

Phenomena similar though far less conspicuous were observed on the other satellites, but the dark color of the fourth failed to show tracings so delicate. Several times a white spot was seen near the north pole, and once near the south pole. On fourteen different dates its disk was seen shortened, and it was found to be circular on eleven nights.

For full details of these remarkable observations and their discussion the reader is referred to the March, May, and June numbers of "Astronomy and Astro-Physics," published at Northfield, Minn.

Jupiter's fifth satellite, which is a minute body accompanying the giant planet, has been seen at several observatories, and its existence confirmed beyond doubt. At the publication of our last annual volume but few observations had been made, and, not strangely, some of the data as there given are slightly erroneous. From observations of eastern elongations made by Dr. Barnard, the discoverer, and continued to Oct. 21, 1892, the corrected periodic time is  $11^h 57^m 20^s$ . Hourly motion in its orbit,  $30'' 11'$ . The distance of the satellite from the center of Jupiter at eastern elongation is  $48.094''$ , which corresponds to a distance of 112,510 miles. Western elongations give a distance about  $1''$  less than the eastern, showing that its orbit is elliptical. It is assumed to be of the thirteenth magnitude. As under the most favorable conditions the mammoth telescope of the Lick Observatory fails to reveal its shadow while it is crossing the planet's disk, it is inferred that the satellite is not over 100 miles in diameter.

**Comets.**—Since Sept. 20, 1892, five comets have been discovered, and one, an expected periodic, has returned to perihelion, as follows:

Comet *f*, 1892 (Holmes).—Taking into consideration the sudden apparition of this comet, its many fluctuations in brightness, and its subsequent change from a comet to a nebulous star, it ranks as the most extraordinary one mentioned in history. So suddenly did it appear, that many astronomers thought it not a comet but the resultant *débris* from the collision of two asteroids. When first discovered its limbs were as sharply defined as those of the planet Jupiter, and as the size rapidly expanded it was for a while supposed to be approaching the earth, when in reality it was rapidly receding from both the sun and the earth. On Nov. 6 the discoverer made its diameter  $5'$ ; on the 14th,  $9'$ ; on the 17th,  $12'$ ; and on the 26th its diameter had increased to  $20'$ , a gain in volume equal to sixty-four times. Such increase of volume in a comet receding from the earth is entirely unaccountable. By about the middle of December it had grown too faint to be seen save with large telescopes, and it continued to decrease until it ap-

peared as a small, faint planetary nebula. On Jan. 16 it had changed to a nebulous star of the 8.5 magnitude, surrounded with nebulosity about  $10''$  in diameter. This marvelous transformation from a diffused nebula to a nebulous star must have occurred at some unknown time between Jan. 14 and 16. Dr. Barnard says he saw the change progress from hour to hour. In a  $3\frac{1}{2}$ -inch telescope the comet could not be distinguished from a bright eighth-magnitude star. As the Biela star shower (occurring once in seven years) was soon expected, and as the comet at discovery was near its radiant, it was, with much reason, supposed to be the long-lost comet of Biela, which since 1852 had escaped observation.

The elements of Holmes's comet, as computed by M. Schulhof, are: Time of perihelion passage, 1892, June 13.2379, Paris mean time; longitude of perihelion,  $345^\circ 53' 12.2''$ ; longitude of node,  $331^\circ 42' 12.1''$ ; inclination,  $20^\circ 47' 22.9''$ ; perihelion distance, 2,139; daily motion,  $513.548''$ ; period, 6,906 years. These elements bear a close resemblance to those of La Hire of 1678, and also to those of De Vico of 1844.

Comet *g*, 1892 (Brooks).—On the morning of Nov. 19 Mr. W. R. Brooks discovered a comet in right ascension  $12^h 56^m 40^s$ ; declination north  $12^\circ 59'$ . This comet possessed no marked characteristics and has been quite easy to observe. Its orbit is a parabola, and consequently this was its first and last visit to our system. The following parabolic elements have been computed for it:

Time of perihelion passage, 1893, Jan. 6.5355, Paris mean time; node to perihelion,  $85^\circ 15' 05.4''$ ; longitude of node,  $185^\circ 39' 05.6''$ ; inclination,  $143^\circ 52' 16.4''$ ; log. perihelion distance, 0.077328.

Comet *a*, 1893 (Finlay).—This is a periodic comet of short period, discovered in 1886, at the Cape of Good Hope, by Mr. Finlay, whose name it bears. On this its first predicted return it was detected by Finlay himself on May 17 from a finding ephemeris calculated from its elements in 1886. It was found almost exactly in the computed place for that day.

The present elements, which differ but little from those of 1886, which latter are inserted for comparison, are as follow: Longitude of perihelion, in 1886,  $7^\circ 34' 29.23''$ ; in 1893,  $7^\circ 41' 34.1''$ ; Longitude of node, in 1886,  $52^\circ 28' 54.06''$ ; in 1893,  $52^\circ 27' 42.7''$ . Inclination, in 1886,  $3^\circ 1' 41.18''$ ; in 1893,  $3^\circ 2' 2.1''$ . Mean daily motion in 1886,  $533.6901''$ ; in 1893,  $535.8046''$ .

Comet *b*, 1893 (Rordame).—This was discovered with the naked eye by Mr. Alfred Rordame, of Salt Lake City, Utah, on the evening of July 8. It had when first detected a tail  $10^\circ$  or  $15^\circ$  in length, and was nearing both perihelion and perigee. The appended parabolic elements have been computed for it by Prof. Boss, but as further observations extending over a longer orbital arc were necessary, they may need slight revision:

Time of perihelion passage, 1893, July 7.2830, Greenwich mean time; node to perihelion,  $47^\circ 8' 1''$ ; longitude of node,  $337^\circ 19' 35''$ ; inclination,  $159^\circ 57' 50''$ ; log. perihelion distance, 9.82905.

On July 19 the comet was photographed by M. F. Quenisset, of France, an independent discoverer, with an exposure of forty minutes.



The negative shows a double tail, one, about a degree in length, pointing east, the other, of half a degree, turned toward the north.

Comet *c*, 1893 (Brooks).—On the morning of Oct. 17, Prof. W. R. Brooks, Director of Smith Observatory, Geneva, N. Y., discovered a fairly bright comet in right ascension  $12^h 21^m$ ; declination north  $12^\circ 55'$ ; having a short tail and moving slowly northeasterly. Its discovery position is quite close to that of his comet (*g*) of 1892.

Time of perihelion passage, 1893, Sept. 20<sup>h</sup>55<sup>m</sup>2, Berlin mean time; longitude of node,  $175^\circ 19'3''$ ; node to perihelion,  $350^\circ 40'2''$ ; inclination,  $130^\circ 13'7''$ ; log. perihelion distance, 9.91968.

These elements resemble those of comet 1864 I.

*Barnard's Photographic Comet*.—The hastily calculated elements of this body, as published last year from observations of three one-day intervals, are, as might be expected, slightly in error. The following are by Prof. Krueger, of Kiel, Germany, who, from observations of Oct. 16, 20, and 25, has obtained elliptic elements that indicate a period of 10.4 years:

Perihelion passage, Oct. 20.5, Berlin mean time; mean anomaly,  $355^\circ 27'9''$ ; node to perihelion,  $167^\circ 41'9''$ ; longitude of node,  $204^\circ 38'9''$ ; inclination,  $32^\circ 11'9''$ ; angle of eccentricity,  $43^\circ 38'6''$ ; perihelion distance, 1.9904; daily motion,  $341.680''$ .

These elements bear too strong a resemblance to those of Wolf's comet of 1891 to be regarded as accidental.

**New Star in Auriga.**—No pains have been spared to make the spectroscopic study of this new star, discovered on Feb. 1, 1892, by Rev. F. D. Anderson, of Edinburgh, Scotland, as complete as possible. Almost every spectroscopist in the world has busied himself with its spectrum, and from all came the same story of a brilliant array of bright lines. While this feature of its spectrum was not unexpected, one altogether unique was simultaneously observed at several observatories, viz., the bright lines were attended by dark companion lines on their more refrangible sides. Three of these lines attracted much attention everywhere because of their intimate connection with the suspected physical constitution of the star, and are, first, the bright line near *b*, the less refrangible edge of the hydrocarbon band; second, the line near the chief nebular line wave length 5,006; and, third, that one near the pair of chromospheric lines wave lengths 4,923 and 4,921.

On Feb. 22 Dr. Huggins discovered a complete series of bright lines in the ultra-violet identical with those found by Prof. Hale in the solar chromosphere, but each with its dark companion line, as if the outburst of the light of the star were caused by a vast chromospheric disturbance. Then arose the question whether the wideness of the lines was attributable to a single or multiple origin. The two strong lines at F and G were certainly divided by a faint, dark line near the center of each. Measurements of the separation of the F line of hydrogen gave, with reference to the earth, a velocity of recession of 230 miles a second and a velocity of approach of 320 miles a second to the dark lines.

The star has exhibited several fluctuations of brightness, having declined on April 22 to the sixteenth magnitude, while on Aug. 19 it had

attained to the tenth magnitude, its spectrum then being that of a planetary nebula. From March 13, when it was of the eighth magnitude, to April 26, when it had faded to the sixteenth magnitude, its decrease was perfectly uniform, and it was assumed that it would thus gradually decline into invisibility even with the Lick telescope, when suddenly it brightened, as above stated, to a nebula with a nucleus of about the tenth magnitude, as observed by Barnard. The catalogue name of the star is T Auriga, but it is generally mentioned as the *nova* in Auriga. Strictly speaking, it ought not to be classed as a variable but rather as a temporary star. Interest attaches to the statement that on Dec. 10, 1892, the *nova* was photographically three magnitudes fainter than visually.

Nova Auriga is the sixth temporary star that has appeared during the past forty-four years. The list follows:

On April 28, 1848, near Eta Ophiuchi; May 21, 1860, between Alpha and Beta Scorpionis; May 12, 1866, near Epsilon Corona Borealis; Nov. 24, 1876, near Rho Cygni; Aug. 31 (?), 1885, in center of the great Andromeda nebula; Jan. 31, 1892, near Chi Auriga.

The Auriga *nova* will always be memorable as the first temporary star to be subjected to thorough spectroscopic examination. The doubling of the spectral lines was a fact of vast significance, showing conclusively that two bodies moving in opposite directions were concerned in the production of the compound spectrum. The velocities above mentioned are unprecedentedly great, but their real motions may have been, and probably were, greater, inasmuch as the spectroscopist takes no cognizance of lateral motion, and it is highly improbable that they were moving exactly in the line of sight.

Though we are greatly indebted to the spectroscopist for its revealings regarding this "new star," yet it has failed to make known whether all temporary stars attain their sudden brilliance from the same cause—a question which the next one will doubtless settle.

**Algol System.**—By means of the elaborate discussion of nearly 700 observed minima of Algol (Beta Persei), Dr. Chandler has propounded a highly interesting theory, explanatory of some of the inequalities observed in this variable star. From these discussions he has resolved these inequalities into two principal components, one with a period of about 141 years and a co-efficient of 173.3 minutes, the other with a period of 37.7 years and a co-efficient of 18 minutes. He ascribes these effects to differences in the times of light transmissions from the various parts of a large orbit described by Algol and its close dark companion around another dark and more distant star. This orbit, which is sensibly circular, lies in a plane inclined about twenty degrees to our line of sight, completing a revolution in 131 years, at a distance equal to that of the planet Uranus from the sun, or nearly 1,800,000,000 miles. To the extent of 149 minutes (the time required for light to pass across its foreshortened radius) are the eclipses of Algol alternately accelerated or retarded, as the star approaches toward or recedes from the earth. The star is timed to reach that point of its orbit nearest the earth within 6 or 7 years, when a maxi-

mum of acceleration should occur, after which the intervals between the eclipses should begin to lengthen until the passage of the ascending node in about 1934.

Though only the principal star has ever been seen, Algol is supposed to be a triple star. Dr. Chandler has hope of the actual telescopic discovery of the distant component, even if it is only slightly luminous. Its position angle is about  $32^\circ$ , and its distance about  $2''$ .

**Position of Solar Apex.**—A new determination of the direction of the sun's motion has been made by Prof. J. G. Porter, Director of the Cincinnati Observatory, who has availed himself of the proper motions of 1,340 stars, published in No. 12 of the "Trausactions" of that observatory. He divided the stars into four groups, according to the amount of their annual proper motion, and secured four determinations, based on the following data:

Group I, 576 stars with proper motion less than  $0.3''$ ; Group II, 563 stars with proper motion between  $0.3''$  and  $0.6''$ ; Group III, 142 stars with proper motion between  $0.6''$  and  $1.2''$ ; Group IV, 70 stars with proper motion greater than  $1.2''$ .

He finds the direction of the sun's motion, and, of course, that of all the circumsolar bodies, to be toward:

	Right ascension.	Declination.	Annual motion.
Group I.....	$281.9^\circ$	$+58.7^\circ$	0.16
Group II.....	$230.7^\circ$	$+40.1^\circ$	0.30
Group III.....	$285.2^\circ$	$+34.0^\circ$	0.55
Group IV.....	$277.0^\circ$	$+34.9^\circ$	1.66

Prof. Vogel has published results based on the measured velocities of 51 stars in the line of sight, but the deduced position of the point toward which the sun is moving is not in very satisfactory accord with other investigations. He makes the co-ordinates of the apex in right ascension  $206.1^\circ$ ; declination north  $45.9^\circ$ ; and a velocity of  $10.9$  English miles a second. Prof. Porter's position is about  $3^\circ$  northeast of Alpha Lyra, while that of Prof. Vogel is in Boötes, about  $4^\circ$  southeast of Eta Ursæ Majoris. The place assigned to it by Sir William Herschel is in Hercules, about midway between those of the preceding observers. Prof. Boss, of the Dudley Observatory, at Albany, has computed its position, using a different set of stars, and locates it in Cygnus, longitude  $289^\circ$ ; declination north  $51^\circ$ . If, however, the neighboring stars, such as the bright stars of Ursa Major and of Orion, be combined into groups, the position of the apex is still farther from that generally assigned to it, viz.: Right ascension  $159.7^\circ$ ; declination north  $50^\circ$ , or in Ursa Major; velocity per second,  $8.11$  miles. L. Struve places the apex in  $266.7^\circ$ ; declination  $+31^\circ$ , or in Hercules; velocity,  $7.69$  miles.

Where results are so discordant we can not be certain regarding that point of the heavens toward which the sun is moving. But, discrepant as the computed positions of the solar apex may be, there is remarkable agreement as to the sun's velocity.

**Light Comparisons.**—Mr. Henry Parkhurst, of Brooklyn, who for the past ten years has made observations of the brightness of 36 aster-

oids with a wedge photometer, says that when the observations are corrected for phase and reduced to unity of distance from both the sun and the earth, the results are remarkably accordant, and he infers that the brightness of the sun has not varied 1 per cent. during the ten years. From these careful studies he thinks the asteroids are better standards for light comparisons than the stars, as most of the latter are subject to variation, while the former are exempt from this uncertainty.

**Variation of Latitude.**—It has long been suspected by astronomers when accurate observations for latitude have been undertaken that this co-ordinate was subject to a slight variation, but even its advocates little dreamed of the periodicity of such change. In 1884-'85, Dr. Seth C. Chandler, of Cambridge, Mass., after more than a year's observations with his almucantar, felt that not only was there possibility of variation of latitude, but also of some law governing it. In following up his thought and the investigations of 1885, he later obtained observations for latitude from Berlin, Prague, Potsdam, Pul-kowa, and the Sandwich Islands, which confirmed his supposition of the change and its law. He has shown positive evidence of a periodic variation of the latitude caused by the rotation of the geographical pole around the astronomical pole in four hundred and twenty-seven days. The deviation is very slight, the two polar centers being only about 27 feet apart.

Dr. Chandler finds that a four hundred and twenty-seven days' period accounts for the contradictory results obtained from the above-named observatories and from those from the Washington and Harvard College observatories.

To make this abstruse subject as plain as possible, suppose at a given time all the observatories of Europe should simultaneously show an increase of latitude, which fact would indicate that the equator had receded from Europe and that the north pole had approached it. If at the same time with this observed increase of latitude in Europe the latitude of observatories on the opposite side of the earth should lessen, then it would be presumably certain that the pole had receded. This is just what Dr. Chandler tried to ascertain. After exhaustive analysis of the reliable observations from all parts of the world he has sufficient evidence to justify the announcement that the pole of the earth does actually revolve around the pole of the heavens.

This fact may result in discrediting the correctness of the assumed values of stellar parallax. Dr. Chandler's papers on the subject may be found in Vols. XI and XII of Gould's "Astronomical Journal," Cambridge, Mass.

**Planetoids.**—Since the discovery of the last asteroid given in the "Annual Cyclopædia" for 1892 the finding of these troublesome bodies has progressed rapidly, 44 having been found. With a few exceptions these were first detected on photographic plates in the form of a short trail caused by their orbital motions during the time of exposure, after which they were observed visually for identification and for position for the computation of the elements of their orbits. This, for various reasons, is attended with so many uncertainties that, until all doubts are removed, they are provisionally named by the



letters of the alphabet before the assignment to them of their catalogue numbers. In consequence of this there must for a time be some uncertainty about the actual number known, which is now 390. The accompanying list is presumably about correct :

Discoverer.	Discoverer.
1892..K..Wolf = 342.	1893..O...Charlois.
1892..L..Wolf = 334.	1893..P...Charlois.
1892..N..Wolf = 343.	1893..Q...Wolf = 104 (Cly-
1892..M..Charlois = 344.	mene).
1892..O...Charlois = 345.	1893..R...Charlois.
1892..P...Charlois = 346.	1893..S...Charlois.
1892..Q...Charlois = 347.	1893..T...Charlois.
1892..R...Charlois = 348. S,	1893..U...Charlois.
discovered by Charlois, was	1893..V...Charlois.
subsequently ascertained to	1893..W...Charlois.
be identical with one dis-	1893..X...Wolf.
covered by Wolf, Nov. 28,	1893..Y...Wolf.
1891.	1893..Z...Charlois.
1892..T...Charlois = 349.	1893..AA...Charlois.
1892..U...Charlois = 350.	1893..AB...Charlois.
1892..V...Wolf = 351.	1893..AC...Charlois.
1893..A...Charlois.	1893..AD...Charlois.
1893..B...Wolf.	1893..AE...Boreilly.
1893..C...Wolf.	1893..AF...Charlois.
1893..D...Charlois.	1893..AG...Charlois.
1893..E...Charlois.	1893..AH...Charlois.
1893..F...Wolf.	1893..AJ...Charlois.
1893..G...Charlois=42 (Isis).	1893..AK...Charlois.
1893..H...Wolf.	1893..AL...Charlois.
1893..J...Charlois.	1893..AM...Charlois.
1893..K...Charlois.	1893..AN...Charlois.
1893..L...Charlois.	Planetoid No. 330, named
1893..M...Charlois.	Ilmatar, is found to be identi-
1893..N...Charlois.	cal with (298) Baptistina.

Since the last report names have been given to the following numbers :

806. Unitas.	327. Columbia.
809. Fratemitas.	328. Gudrun.
813. Chaldaea.	329. Svea.
814. Rosalia.	332. Siri.
816. Goberta.	A, 1892. Badenia.
817. Roxana.	C, 1892. Roberta.
820. Katharina.	G, 1892. Dorothea.
826. Tamara.	T, 1892. Dembowska.

The name Columbia given to No. 332 in last year's list was erroneous. It should have been as above, Siri. To keep watchful care over so numerous a family has become an onerous duty, and the outlook for the future is gloomy. During the month of March, 1893, as many planetoids were found as were discovered in the first fifty years of the present century.

**Eclipse of April 16.**—Comparatively meager reports have been received of the solar eclipse of April 16, 1893. Stations were occupied by astronomers in Chili, the Argentine Republic, Brazil, and Africa, and at most of them the observers were favored with a clear sky, and valuable observations (telescopic, photographic, and spectroscopic) were secured in large numbers. The United States sent out no expedition, but a private one from the Lick Observatory, in charge of J. M. Schaeberle, went to the west coast of Chili, making in a cloudless sky numerous and important observations. During the eclipse many photographs were secured, several being taken during the four and a half minutes of totality. Prof. Schaeberle is the originator of the mechanical theory of the corona which has attracted considerable attention. At departure he left a drawing showing how the corona should appear during totality, but Profs. Pickering, Fowler, and Taylor, who observed the corona, assert that they could not trace the slightest resemblance to the sketch. A comparison of the different photographs taken by Prof. W. H. Pickering, who observed the eclipse from

South America, revealed many interesting and valuable details of the inner corona not brought out when rapid plates were used.

Prof. Fenzi gives a list of 9 prominences whose heights were over 30", one amounting to 103".

Prof. Deslandres discovered 15 new coronal and chromospherical lines.

Mr. Taylor, in Brazil, where totality lasted four minutes forty-two seconds, had during this critical period a clear sky, though for ten minutes both before and after totality the sky was overcast. He secured several photographs of the sun's surroundings which reveal a great amount of detail especially in the lower part of the corona. Some of the streamers extended two diameters at least from the sun's limb, the longest being at the sun's north pole. The longest exposure was of one hundred and fifty seconds, but it failed to reveal any greater extension of the streamers than did those of fifty seconds. The sky-fogging of the plate in long exposures prevents any gain over those of shorter exposures.

**Meteoric Showers.**—In various parts of America a star shower of unusual brilliancy was observed on Nov. 23, 1892. Such a shower was expected, though not until the evening of the 27th, that being the date of the meteoric shower connected with the lost comet of Biela, which shower occurs once in six or seven years, having been first seen in 1872, and again in 1885. When, therefore, it took place four days earlier than the predicted time, the question arose whether those seen were really Biela meteors.

Says Prof. Charles A. Young: "The heliocentric longitude of the descending node of Biela's comet at its last visible appearance in 1852 was about 62°, and was also the longitude of the earth, and was also the same at the times of the meteoric showers of 1872 and 1885. This fact suggests the inquiry whether perturbations since will fairly account for such a recession of the node. It is obvious that if the meteoric swarms encountered by the earth in 1872 and 1885 were really moving in the orbit of Biela's comet, then the swarm encountered on Nov. 23 last, seven years later, must have been an entirely different one, unless, indeed, the perturbations since 1885 can account for a retardation of nearly five months."

On the other hand, Prof. Newton does not think the five months alluded to are at all significant, as he believes the length of the swarm to be 500,000,000 miles along the comet's path, and that the passage of the earth through it in a different place at each encounter, sometimes through its central portion and then again near its ends, will account for the irregularity of its appearance.

The display, while not comparable to that of 1885 as witnessed on the eastern continent, was fine. One observer in New York counted over 200 meteors in forty minutes, the radiant being near Gamma Andromeda. At Princeton, at 8.30 o'clock, an observer counted 6 a minute; at 10 p. m. two observers, standing back to back, saw 104 in five minutes; and at 11 o'clock the same observers, in like manner, counted 100 in four minutes and a half.

**Geminid Shower, 1892, Dec. 12.**—The radiant of this shower is about 4½° east of Castor and Pollux, and appears to be double, the two

showers being quite distinct. The radiant of one is in  $119^{\circ} + 29^{\circ}$ , that of the other in  $109^{\circ} + 34^{\circ}$ . In five hours and a half one observer counted 66 shooting stars, and 12 belonging to a secondary shower in  $117^{\circ} + 30^{\circ}$ . On each of the nights of Dec. 9, 11, and 12 a fine slow-moving Geminid leaving a bright train was observed at three different places, furnishing data for computing their height, with the following result for that of Dec. 9: Height at beginning and ending was 91 and 57 miles respectively. Length of visible path, 75 miles. Velocity per second, 30 miles.

Of bright bolides the usual number has been observed, two of which were photographed, both showing brilliant knots or condensations in their trains.

**Astronomical Prizes.**—The gold medal of the Royal Astronomical Society of England was awarded to Prof. H. C. Vogel for spectroscopic and other astronomical achievements.

The Lalande prize (doubled) was bestowed on Dr. E. E. Barnard for the discovery of the fifth satellite to Jupiter, and on Prof. Max Wolf for his astronomical discoveries.

The Damoiseau prize has been given to M. Radau for his work on lunar inequalities of long period caused by the planets.

The Valz prize was awarded to M. Puiseux for his equatorial "coudé" and other instruments.

M. Tachini has secured the Janssen prize for his solar records.

Two Donohoe bronze comet medals have been received by W. R. Brooks for the discovery of two comets—comet *d* on Aug. 28, 1892, and comet *g* on Nov. 19 of the same year.

Dr. Barnard was given the Donohoe medal for the photographic discovery of comet *e* on Oct. 12, 1892.

Mr. Edwin Holmes, of London, England, was awarded the Donohoe medal for the discovery on Nov. 6, 1892, of comet *f*.

The Donohoe medal will probably be presented to Mr. Alfred Rordame for the discovery of, and for first announcing the naked-eye comet *b* on July 8, 1893.

The rule governing the award of the Donohoe comet medal is, that he who first discovers the comet and immediately announces such discovery to some observatory shall be its recipient. Rordame, as above, found comet *b* on July 8, and at once telegraphed the fact to the Warner Observatory, and was therefore for some time supposed to be entitled to the medal; but late advices indicate that M. Roso de Luna, of Logrosan, Estremadura, Spain, saw the comet on July 4, and on July 6 announced it to the Director of the Madrid Observatory as a new star, so that probably the medal will be bestowed on him.

**The Yerkes Telescope.**—This giant refractor, the object glass of which is 40 inches in diameter, or 4 inches larger than any yet made, is approaching completion, and makes an era in the science of optics. The objective is being ground, figured, and mounted in cell by Alvan G. Clark, of Cambridgeport, Mass. The mounting of the instrument is the work of Warner & Swasey, of Cleveland, Ohio. The appended figures will assist to form a correct idea of the enormous dimensions of some of its parts: The tube of the instrument, made of steel, is  $62\frac{1}{2}$  feet in length exclusive of the eye end. It is divided

into three sections, viz., the eye, the middle, and the object sections. Its object end is 43 inches in diameter, its eye end 38 inches, and the middle 53 inches. The steel of the middle section is one quarter of an inch in thickness, and the entire tube weighs 6 tons. Its polar axis is a rod of hardened steel 15 inches in diameter and 13 feet long, weighing about  $3\frac{1}{2}$  tons. The declination axis, also of hardened steel, is 12 inches in diameter and weighs  $1\frac{1}{2}$  ton.

The pier of cast iron is made in five sections strongly bolted together, each section being 7 feet in height. The bottom section weighs 18 tons, and each of the others  $5\frac{1}{2}$  tons. The weight of the entire pier, which rests on solid masonry, is about 45 tons. From the base of the iron pier to the center of motion is  $43\frac{1}{2}$  feet. When the telescope is pointed to the zenith the object glass will be 72 feet above its base. To avoid the use of an observing chair of such an immense height, the floor will be raised and lowered in a manner similar to that of the Lick Observatory, at Mount Hamilton, Cal. The driving clock to move the telescope westerly, at a rate equal to the apparent motion of the celestial sphere caused by the earth's rotation, will weigh  $1\frac{1}{2}$  ton, and will be controlled magnetically. The observatory that is to receive this telescope will surpass all others in size, and is now in course of erection at Lake Geneva, Wisconsin, 75 miles north of Chicago. It is to be elaborately equipped with the best modern instruments for telescopic, photographic, and spectroscopic investigations. The steel dome, 85 feet in diameter, will be revolved, the shutter opened and closed, and the floor raised and depressed by an electric motor, and hence but little manual labor will be required for their manipulation.

**Catalogues.**—Dr. John M. Thome, Director of the Argentine National Observatory, at Cordoba, has published Vol. XVI of the "Results," in which are given the positions and magnitudes of 179,800 stars, and Vol. XVII, now in a forward state, will contain 160,580. The arrangement of the publication is the same as that of Argelander's *Durchmusterung* of the Northern hemisphere, with the exception that, instead of being referred to the mean equinox of 1830, the positions are brought forward to that of 1875.0. The probable errors of the positions are given as  $0.42'' \pm$  and  $0.23' \pm$ . The average number of stars observed in a square degree is 56.1, while the corresponding number in the Northern catalogue of Argelander is but 15.2. A long list of stars supposed to be variable is appended.

The publication is very valuable, especially for Southern observers.

Dr. S. C. Chandler has issued a second catalogue of variable stars, which, from the painstaking labor involved in its preparation, may be regarded as a complete *résumé* of our present knowledge of variables. The positions are given with great accuracy, and are for A. D. 1900.0. Numbers are prefixed to indicate their colors, very red, red, and reddish. The catalogue is supplemented by a list of 90 stars, the variability of which the author considers plausible. It is published in Vol. XIII, No. 12, of the "Astronomical Journal," to which the reader is referred, where full data accompanied by notes may be found. The catalogue proper is com-



prised of 260 stars, 10 of which are of the Algol type. So far as known, S. Antlia has the shortest period, its light-oscillations being confined within three and a half hours. It was discovered by M. Paul, in 1888.

Prof. S. W. Burnham's nineteenth catalogue of double stars, given out in Nos. 3141 and 3142 of *Astronomische Nachrichten* for Jan. 5, 1893, is, he says, "the result of my micrometrical measures of double stars at Mount Hamilton from January, 1892, to June, when my connection with the Lick Observatory was permanently ended." These measures were made with the 36-inch telescope, and the list embraces 182 stars, the first 8 of which are new. Though not extensive, it is a valuable publication, since it decides many doubtful points.

His micrometrical observations of the new star in Auriga, connecting it with the various companion stars in the field, can be found in "Monthly Notices, of the Royal Astronomical Society" for April, 1892.

His eighteenth catalogue of double stars was sent out in the latter part of the year 1892. The grand total of those discovered by this indefatigable observer, as given in all his catalogues, is 1,274. The lists have been so numerous as to be very inconvenient for reference, and he has therefore brought them all together in one volume, now in press, arranged in the order of right ascension, with a brief history of each pair.

*Draper Catalogue of Stellar Spectra.*—In Vol. XXVIII of the "Annals of the Astronomical Observatory of Harvard College," Prof. E. C. Pickering gives a catalogue of 3,300 photographic plates taken with the Bache telescope. The attempt was made to determine the photographic magnitude of stars by a comparison of the intensity of the photographic images for one particular wave length, but an unexpected difficulty was met, for many stars of the Secchi second type change their photographic intensity at that very point of the spectrum chosen as the standard wave length. A point of great importance developed is the predominance of first-type stars in the Milky Way. Prof. Pickering has arrived at the conclusion that the Milky Way is a distinct cluster of stars to which our sun does not belong. No fewer than 19 stars giving bright-line spectra were discovered in the photographs, all within the Galaxy, and close to the equator. He finds that, as a rule, the photographs lend no support to the idea of variation of stellar spectra, save in those of spectroscopic doubles and of certain variables.

In the "Astronomical Journal," No. 296, Mr. Reed publishes a list of 6 stars proved by photography to be variable; and in No. 299 Mr. Paul S. Yendell gives the maxima and minima of 10 variable stars.

A photometric catalogue has just been issued by Mr. Edwin F. Sawyer, of Cambridge, Mass., which gives the magnitudes of 3,415 stars situated between the equator and 30° south. The average number of observations to each star is 4. During the progress of the work 8 new variables were discovered, nearly all of which were of short period.

The "Astronomical Journal," No. 291, contains a list of 47 variables by N. S. Duner, of Upsala. It is a continuation and conclusion of

the series begun in No. 254. A brief description of each star is given, which adds to its value for those who make variables a specialty.

No. 278 of the "Astronomical Journal" has a record of 91 double stars remeasured by F. P. Leavenworth at the suggestion of Mr. Burnham, who furnished the list, the majority of which were originally discovered by himself. They are mostly interesting pairs.

Prof. Porter, Director of the Cincinnati Observatory, has completed a valuable catalogue of 1,340 stars reduced to the epoch 1900, with the details of the determination of the proper motion of them all.

The Observatory of Glasgow has issued a second catalogue of 2,156 stars, the result of the labors of the late Prof. Robert Grant, for the epoch of 1890. Of 122 of these the proper motion has been determined.

**AUSTRALASIA**, one of the divisions of the globe, containing the principal possessions of Great Britain in the Pacific. The colonies of New South Wales, Victoria, Queensland, South Australia, and Western Australia occupy the entire Australian Continent. Tasmania is an island, 210 miles in length, with an extreme width of 200 miles, lying southwest of Victoria and separated from it by Bass's straits, 160 miles in width. New Zealand, lying about 25° east of Australia, comprises two large islands, known as the North island and the Middle island, and a number of outlying islands of various sizes, of which the largest and most important is Stewart island, sometimes called the South island. In all these colonies the Executive is a Governor appointed by and representing the Crown; and the Governor is assisted in administration by an Executive Council of responsible ministers. Legislation is accomplished by means of an elective Parliament, consisting of two Houses, usually called the Legislative Council and the Legislative Assembly. Fiji consists of a group of over 200 small islands situated about 30° east of the Australian Continent, between 15° and 20° south latitude. It is a Crown colony.

**Area and Population.**—The area of the British Australasian colonies and the population according to the final returns of the census of 1891 are given in the following table:

COLONIES.	Square miles.	Population.
New South Wales .....	310,700	1,132,234
Victoria .....	87,884	1,140,405
Queensland .....	668,497	393,718
South Australia .....	903,690	320,431
Western Australia .....	1,060,000	49,782
Tasmania .....	26,215	146,667
New Zealand .....	104,471	* 626,658
Fiji .....	7,740	121,180
Total .....	3,109,197	3,931,075

\* Exclusive of aborigines.

The Fiji Islands are peopled by colored races, the Europeans numbering only 2,091, while there are 1,092 half-castes, 8,089 East Indians, 2,461 Polynesians, 2,219 natives of Rotuma island, 108,971 Fijians, and 479 others. New South Wales, in 1891, had 5,097 aborigines, besides 3,183 half-castes, making together 0.73 per cent. of the total population, of which 64.03 per cent. consisted of colonials native in New South Wales, 7.52 per cent. of persons born in the

other colonies, 13·18 of English, 6·63 of Irish, 3·25 of Scotch, 0·44 of Welsh immigrants, and 0·59 of other British subjects, while 3·63 per cent. were foreigners, 1·16 per cent. being Chinese. In Victoria, 97 per cent. of the population were British subjects by birth, 63 per cent. having been born in the colony. Of the aborigines only 565 remained, while there were 9,377 Chinese. In South Australia, in 1891, there were 3,134 aborigines living in the settled parts, and 3,848 Chinamen. The aborigines of Queensland are estimated to number 12,000, and there are 8,574 Chinese, mainly employed in the gold mines, and 9,426 Polynesians, besides 1,844 other colored persons included in the total population. The number of the aborigines of Western Australia can not be estimated except in the settled districts, where there were 5,670 in 1891 working for the whites. The native race of Tasmania has died out altogether. The population of New Zealand includes 4,444 Chinese. The Maoris, who are excluded from the total given above, numbered 41,993, of whom 22,861 were males and 19,132 females. Of the rest of the population, 96·72 per cent. were British subjects by birth, of whom 58·61 per cent. were born in New Zealand.

The movement of population in 1891 for the several colonies was as follows :

COLONIES.	Marriages.	Births.	Deaths.	Natural increment.	Immigration.
New South Wales.....	8,457	39,458	13,448	23,788	17,846
Victoria.....	8,780	38,505	18,631	19,874	9,276
Queensland.....	2,905	14,715	5,170	9,545	1,570
South Australia.....	2,315	10,737	4,211	6,526	3,877
Western Australia.....	.....	1,786	869	917	1,571
Tasmania.....	988	4,971	2,234	2,737	6,082
New Zealand.....	3,805	18,273	6,518	11,755	*3,198
Fiji.....	.....	4,197	5,748	.....	.....

\* Net emigration.

**Finances.**—The budgets of revenue and expenditure for each colony, and the public debt of each for the fiscal year 1891 ending June 30 in Victoria, South Australia, and Queensland; Dec. 31 in New Zealand and Fiji; and March 31 in New South Wales, Tasmania, and Western Australia, are shown in the following table :

COLONIES.	Revenue.	Expenditure.	Debt.
New South Wales...	£10,036,185	£10,478,673	£52,498,533
Victoria.....	* 7,728,828	* 8,639,900	* 46,711,237
Queensland.....	* 3,473,716	* 3,625,281	29,457,134
South Australia....	* 2,499,388	* 2,687,133	21,133,300
Western Australia..	497,670	435,622	1,613,594
Tasmania.....	883,198	851,559	7,110,290
New Zealand.....	4,146,231	4,135,543	* 37,677,619
Fiji.....	71,250	67,320	246,689

\* For 1892.

**Commerce.**—The following table shows the foreign and intercolonial trade of the several colonies for 1891 :

COLONIES.	Imports.	Exports.
New South Wales.....	£25,383,397	£25,944,020
Victoria.....	21,711,603	16,006,743
Queensland.....	5,079,004	8,805,387
South Australia.....	9,956,542	10,512,049
Western Australia.....	1,280,093	799,466
Tasmania.....	2,051,964	1,440,418
New Zealand.....	6,503,849	* 9,566,397
Fiji.....	253,049	474,334

The domestic exports of New South Wales were valued at £21,103,816. The export of wool was 340,691,842 pounds, valued at £11,312,980. There were in the colony on Jan. 1, 1892, 61,831,416 sheep, 2,046,347 horned cattle, 459,755 horses, and 253,189 hogs; and there were 117,288 persons engaged in pastoral and agricultural work. The value of minerals mined during the year was: Gold, £550,606; silver, £134,850; silver-lead ore and metal together, £3,619,589; copper, £119,195; tin, £133,963; coal, £1,742,796. It is estimated that 32,508 persons were employed in mining and smelting in 1891. For the year ending March 31, 1892, there was an area of 1,179,621 acres of land under cultivation, and the amounts, in bushels, of the principal crops were as follow: Wheat, 3,963,668; maize, 5,721,706; barley, 93,446; oats, 276,259. The principal fruit grown in the colony is the orange, and the estimated production for the year was 10,417,500 dozen, from 11,370 acres. The duties collected upon imports in 1891 amounted to £2,168,265, which was 8·64 per cent. of their total value.

Victoria's chief exports for 1891 were: Wool, 164,805,907 pounds, valued at £7,165,092; live stock, £457,394; wheat, £909,636; and gold, mostly specie, £2,641,443. The principal imports were: Wool, £3,372,154; live stock, £1,553,727; sugar and molasses, £1,051,838; and iron and steel, £1,046,703. The total customs revenue was £2,503,438, or about 12 per cent. of the total value of imports. The imports were derived from the following sources: United Kingdom, £8,953,599; Australasian colonies, £8,731,080; India, £457,484; Ceylon, £99,200; Canada, £84,083; other British possessions, £445,094; United States, £785,602; other countries, £2,155,463. The exports were divided as follows: To the United Kingdom, £7,993,489; Australasian colonies, £4,926,325; India, £472,682; Ceylon, £58,074; other British possessions, £114,290; United States, £385,691; other countries, £2,056,192. The total number of manufactories, etc., in the colony in March, 1891, was 3,296, employing 58,175 persons. The manufactures are almost entirely for home consumption. The grain yield for 1892 was, in bushels, as follows: Wheat, 13,328,000; oats, 4,562,000; barley, 956,000. The total product of gold for 1891 was 576,400 ounces, valued at £2,305,600.

The chief exports of Queensland in 1891 were: Wool, £3,453,046; gold, £1,955,656; sugar, £632,267; hides and skins, £145,922; tin, £120,705; and preserved meats, £222,761. The leading imports were: Textiles and apparel, £772,034; metal goods, £643,216; liquors, £339,481; provisions, flour, and grain, £1,107,445. The customs receipts in 1891 were £1,201,685, almost one quarter of the total value of the imports. The live stock in 1891 numbered 20,289,633 sheep, 6,192,759 cattle, 399,364 horses, and 122,672 hogs. The leading grain crop is maize, the yield of which in 1891 was 3,077,915 bushels. The output of gold was 576,439 ounces, valued at £2,017,536. Other products are coal, tin, copper, silver, lead, bismuth, antimony, and opals.

South Australia, in 1891, exported wool to the value of £2,166,125; wheat, £1,259,397; flour, £647,075; and copper ore, £53,175. Her principal imports were textiles and drapery goods.



The wheat crop in 1892 amounted to 6,436,488 bushels, and the live stock numbered 7,646,239 sheep, 399,077 cattle, and 188,587 horses. The total value of minerals produced in 1891 was £267,796. In the same year there were 994 manufacturing establishments, employing 15,427 persons.

Western Australia exported, in 1891, wool to the value of £329,365; pearls and pearl shells, £140,527; sandalwood, £37,000; timber, £89,176; skins, £39,248; and gold, £115,182. There are mines of gold, silver, copper, lead, tin, and coal in the colony. Only about 132,000 acres of the land were under cultivation in 1891. In March, 1892, there were 1,962,212 sheep, 133,960 cattle, and 40,812 horses in the colony.

The more important exports of Tasmania for 1891 were as follow: Wool, £418,460; gold, £133,013; tin, £293,170; fruit, green and preserved, £125,886; timber and bark, £107,134; silver and silver ore, £62,138; hops, £19,386. The principal imports were: Textiles, £549,413; art and mechanical productions, £432,293; food stuffs and liquors, £399,020. The duties amounted to £376,130, or over 18 per cent. of the total value of imports. On March 31, 1892, there were in the colony 1,662,801 sheep, 167,666 cattle, 31,262 horses, and 77,375 hogs. There were 47,217 acres of land under wheat, which yielded 930,841 bushels, and 28,242 acres under oats, which yielded 873,113 bushels. The output of silver ore was 4,810 tons, valued at £52,284; of coal, 45,524 tons, valued at £21,123.

New Zealand exported in 1891 colonial produce to the value of £9,400,094, of which the more important articles were: Wool, £4,129,686; frozen meat, £1,194,724; gold, £1,007,172; grain and flour, £715,966; Kauri gum, £437,056; skins, hides, and leather, £259,141; butter and cheese, £236,933; timber, £182,431; tallow, £173,257; preserved meats, £111,133. The leading imports were: Cloths and clothing, £1,673,571; iron and steel goods and machinery, £855,599; sugar, £381,029; paper, printed books, and stationery, £300,613; liquors, £290,159; tea, £159,893; tobacco and cigars, £128,500; bags and sacks, £165,289; fruit, £126,537; oils, £147,064; coal, £120,422. Of the total imports, £4,369,633 came from Great Britain, £1,013,549 from Australian colonies, and £361,795 from the United States. Of the exports, £7,140,381 went to Great Britain, and £515,208 to the United States. In April, 1891, the live stock in the colony numbered 18,227,186 sheep, 831,831 cattle, 211,040 horses, 308,812 hogs, and 1,790,070 head of poultry. There were 63,607 persons engaged in agricultural and pastoral pursuits. In 1890 there were 2,570 manufactories of various kinds. The quantity of wool used by the mills of the colony in 1891 was 2,918,073 pounds.

The chief exports of Fiji in 1891 were: Sugar, 20,470 tons, valued at £227,526; copra, 6,669 tons, valued at £63,039; and bananas, £61,537. There had been a disease among bananas which prevented their bearing as well as usual. The imports increased 22 per cent. over those of the previous year.

**Navigation.**—The number of vessels and the tonnage entered and cleared at the ports of the several colonies in 1891 are shown by the following table:

COLONIES.	ENTERED.		CLEARED.	
	Number.	Tonnage.	Number.	Tonnage.
New South Wales....	3,021	2,821,898	3,100	2,872,388
Victoria.....	2,531	2,333,864	2,560	2,376,245
Queensland.....	607	502,794	463	494,324
South Australia.....	1,140	1,287,649	1,130	1,288,902
Western Australia...	310	533,433	288	512,123
Tasmania.....	785	514,766	793	523,900
New Zealand.....	737	618,515	744	625,807
Fiji.....	101	69,264	....	.....

The number of vessels and the amount of tonnage registered as belonging to the colonies at the end of 1891 were as follow: Victoria, 143 steamers, of 42,710 tons, and 269 sailing vessels, of 44,382 tons; Queensland, 28 ocean steamers, of 19,257 tons, 37 harbor steamers, of 3,102 tons, and 59 river steamers, of 1,856 tons; South Australia, 310 vessels, of 39,739 tons; Tasmania, 232 vessels, of 19,536 tons; New Zealand, 742 vessels, of 71,290 tons; Fiji, 238 vessels, of 3,908 tons. Direct steamship service between Australia and Canada was inaugurated May 18, by the sailing of the steamship "Miwera" from Sydney for Vancouver. The Government of New South Wales voted a subsidy of £10,000 per annum to the line.

**Communications.**—In New South Wales, on June 30, 1892, there were 2,185 miles of Government railroads open for traffic, upon the construction and equipment of which £33,312,608 had been expended. The gross earnings for the year ending at that date were £3,107,266, working expenses, £1,914,252; making the ratio of expenses to receipts 61·6 per cent. At the close of 1891 there were 81 miles of private railroads, costing £424,967. In December, 1891, the telegraphs of the colony had in operation 24,780 miles of wire and 674 stations, costing £767,872. The number of telegrams transmitted during the year was 4,046,251, and the net earnings, including the telephone service, were £198,531. The post-office receipts were £463,076, and the expenditures £445,821. There were 1,385 post-offices, and the amount of matter carried was: Letters, 63,344,900; postal cards, 808,700; newspapers, 42,517,300; packets, etc., 11,068,500. There were issued 488,326 money orders, covering £1,577,744.

On June 30, 1891, Victoria had 2,764 miles of railroad in operation and 143 miles under construction. The total cost was £36,341,626. Receipts for the year amounted to £3,293,567; and expenses £2,310,645, or 70·05 per cent. of the receipts. The number of passengers carried during the year was 72,000,000, and the freight carried amounted to 4,426,000 tons. Including railway telegraphs, the colony had at the end of 1891 about 7,100 miles of telegraph lines, with 13,900 miles of wire. The number of messages during the year was over 3,100,000, and the revenue was £138,969. The post-office carried during the year 62,526,448 letters, 22,729,005 newspapers, and 7,491,316 packets. The receipts, including those of the telegraph service, were £499,327, and the expenditures £674,227.

In Queensland at the end of 1891 there were 2,304 miles of railroads open for traffic and 120 miles under construction. The total cost of the lines in operation was £15,943,019. The receipts during the year were £974,703, and the

working expenses £640,494. There were 9,973 miles of telegraph, with 17,622 miles of wire. The total number of messages was 1,198,842. The receipts were £95,147, and the expenses £116,405. The post-office carried during the year 15,345,842 letters, 12,074,912 newspapers, and 2,491,957 packets. Receipts were £127,443, and expenditures £210,476.

South Australia, at the end of 1891, had 1,812 miles of railroad open for traffic, the cost of construction and equipment of which, up to June 30, 1891, was £11,398,839, being at the rate of £6,842 per mile. The receipts for the year were £1,223,999; working expenses, £617,179, being 50.42 per cent. of the gross earnings. The net earnings yielded 5.332 per cent. on the capital cost. There were 5,640 miles of telegraph and telephone lines, with 12,707 miles of wire. This is inclusive of the line of 2,000 miles from Adelaide to Port Darwin connected with the British Australian cable. The receipts of the department exceed the working expenses and fixed charges. The post-office handled 17,836,092 letters, 8,883,103 newspapers, and 1,314,724 packets.

In Western Australia, at the end of 1891, there were 651 miles of completed railroad, of which about 200 miles belonged to the Government. There were 287 miles under construction and 258 miles under survey. There were in operation 2,021 miles of telegraph, with 3,546 miles of wire, and 680 miles were under construction. The number of messages sent was 224,390, on which the net revenue was £12,643. The post-office handled 4,425,669 letters and postal cards, 2,976,895 newspapers, and 548,453 packets.

Tasmania had 425 miles of railroad in operation at the end of 1891, and 47 miles under construction. The sums expended on the Government railroads up to the end of 1890 amounted to £3,088,882, or £7,746 per mile for the 399 miles then open. The main line now pays working expenses. At the end of 1891 there were 2,082 miles of telegraph lines. The number of overland messages was 593,583, in addition to which the submarine cable connecting with the continent of Australia transmitted 137,187. The revenue of the telegraph and telephone system was £25,946, and the expenditure £24,144. The post-office handled during the year 5,688,634 letters, 5,376,124 newspapers, and 1,305,589 packets. The revenue amounted to £56,464, and the expenditure to £50,277.

The total length of railroads in New Zealand on March 31, 1892, was 2,011 miles, embracing 699 miles of Government railways on the North Island, 1,170 on the Middle Island, and 142 miles of private lines. The total expenditures on the Government lines had then reached £15,497,783. For the year the revenue was £1,115,431, and the working expenses were £706,517. At the end of 1891 there were 5,349 miles of telegraph, with 13,194 miles of wire. The number of messages was 1,968,264, and the total receipts were £117,633. The post-office handled, in 1891, 47,612,864 letters, 2,278,929 postal cards, 18,501,912 newspapers, and 7,170,761 parcels. The revenue was £209,894. The expenditures of the post and telegraph department were £268,343.

**Federation.**—The movement for the federation of the Australasian colonies made little progress during the year. At the session of the

Federal Council, which opened at Hobart on Jan. 26, the colonies of Victoria, Queensland, Western Australia, and Tasmania were represented, and Sir Samuel Griffith was elected president. The discussion turned largely upon the federation of the colonies, as embodied in the Commonwealth bill adopted by the National Australasian Convention held at Sydney in 1891. A resolution was passed to the effect that the council observed with satisfaction the proceedings of the convention of 1891, and trusted that the federal unity of the colonies upon the general basis recommended by that convention would be accomplished. The resolution further declared that in the event of serious delay in the acceptance by the colonies of those recommendations the number of members of the council should be increased. Sir John Forrest, Premier of Western Australia, said the colony he represented was not opposed to federation, although it did not agree with the bill passed by the National Convention. He thought the Council would be more useful if the number of members was increased. Under the leadership of Attorney-General Barton, of New South Wales, one of the most pronounced advocates of federation in Australia, the Legislative Assembly early in the year reaffirmed its adhesion to the general plan of federation laid down by the convention of 1891; but, on account of failing health, Mr. Barton decided to postpone taking up the question in a practical form until the next session. Sir George Dibbs, Premier of New South Wales, expressed himself in favor of federation, although upon different lines from the Intercolonial Convention. On Feb. 7 the Chamber of Commerce of Melbourne adopted a resolution declaring Australasian federation both difficult of realization and remote, and that a customs union would be more easily established and more helpful. On June 22, pursuant to a call issued by Attorney-General Barton, a well-attended meeting was held in Sydney, at which steps were taken for the formation of a central federation league, entirely independent of political influences, with a view of promoting the common aim of Australasian patriotism. It was announced, however, that Sir Henry Parkes and G. H. Reid, the leader of the Opposition, would not join in the scheme, and Sir Thomas McIlwraith, Premier of Queensland, declined to assist, on the ground that it would be best to pursue the course already begun. A federation conference was held in Sydney on July 31, at which many distinguished residents of New South Wales and Victoria were present. Resolutions were adopted favoring federation and the establishment throughout both colonies of branches of the new federation league. On Aug. 1 the New Zealand Government definitely announced its declination to participate in the proposed federation of the Australasian colonies. The assemblies of Victoria and Tasmania agreed to a proposal to petition the Queen to increase from 2 to 5 the number of representatives of each colony in the Australasian Federal Council.

**Banking Crisis.**—Until near the close of 1891 the business of banking in the Australasian colonies had enjoyed a steady and almost uninterrupted prosperity. The growth of population and rapid development of the country had created a large demand for money and for bank-



ing facilities, and the profits of the business had been in the highest degree satisfactory. To meet the large and constantly increasing demands for loans the colonial banks readily secured, by the offer of  $4\frac{1}{2}$  to 5 per cent. interest, vast amounts of English and Scottish capital in the form of fixed deposits, which were really loans that at the option of the depositor might be withdrawn after a certain date. The aggregate of British capital which thus found its way to the Australian banks reached nearly \$200,000,000. These funds the banks lent at handsome rates of interest upon lands, mines, and fixed properties all over the colonies, and most of them did not hesitate to loan up to, or even above, the full amount of their deposits from all sources. In some of the cities, notably in Melbourne, Victoria, a great boom in real estate took place, and houses were built far in excess of the needs of the population, with money which the banks were at all times ready to lend. Meantime the colonial governments had been indulging in very heavy borrowing; extensive public works were being made at high rates of wages; imports, especially of luxuries, greatly increased, yielding liberal revenues through the customhouses; and the country was enjoying an era of prosperity that was largely fictitious. While this state of things continued values were constantly appreciating, leaving an apparently ample margin in the securities upon which the banks made their most liberal loans. But they were not quick enough in noting the turning of the tide. The Baring crisis in the autumn of 1890, and the distrust which followed it, served to check to some extent the depositing of English money in Australian banks, but those banks took no heed of this note of warning. They continued to loan their borrowed capital, which they were liable to repay at a certain time, against securities upon which they could not possibly realize quickly in a declining market. It had been so easy to get money from England, and the profits of the business were so inviting, that curtailment or retrenchment was in the majority of cases unthought of. These conditions continued until late in 1891, when the failure of the Standard Bank and the Metropolitan Bank in Melbourne, and several other institutions, awoke a feeling of insecurity and distrust which could not be quieted, and failure followed quickly upon failure. These early failures were confined for the most part to those institutions which had fostered the land and house-building speculations, at this time in a state of collapse; but a far more widespread disaster was only averted by a combination of the more solid banks for mutual aid. This action of the banks in March, 1892, marked the end of the first phase of the banking crisis. During the remainder of the year there were but few suspensions, and many of the banks did a profitable business, though it was becoming evident from the sharp competition for business that there were more banks in the colonies than the business of the people required, and this competition led to the running of risks that judicious and conservative bank management would have avoided. In the beginning of 1892 there were 28 banks, with upward of 1,700 branches, doing business in the Australasian colonies. The following table shows the banks doing business at

the end of the year, and, so far as the figures are obtainable, their paid-in capital, and the volume of business of each during the quarter ending Dec. 31, 1892:

BANKS.	Paid-up capital.	Volume of business.
Bank of New South Wales, Sydney...	£1,250,000	£36,576,048
Bank of Australasia.....	1,600,000	25,133,920
Union Bank of Australia, Limited...	1,500,000	28,124,660
Commercial Banking Co., Sydney...	600,000	22,142,698
Australian Joint Stock Bank, Sydney	704,394	17,769,494
Commercial Bank of Australia, Limited, Melbourne.....	1,200,000	18,225,865
National Bank of Australasia, Melbourne.....	1,000,000	15,827,955
Bank of New Zealand.....	900,000	13,121,915
Queensland National Bank, Limited, Brisbane.....	800,000	12,251,858
Bank of Victoria, Limited, Melbourne	600,000	11,738,109
English, Scottish, and Australian Chartered Bank.....	900,000	10,586,350
London Chartered Bank of Australia.	1,000,000	9,842,126
Colonial Bank of Australasia.....	406,250	7,123,982
City of Melbourne Bank, Limited...	500,000	6,495,921
Federal Bank of Australia, Limited, Melbourne.....	400,000	3,825,569
Commercial Bank of Tasmania.....	.....	3,370,782
Colonial Bank of New Zealand, Dunedin.....	400,000	4,037,170
City Bank, Sydney.....	230,000	3,666,357
National Bank of New Zealand, Limited	250,000	2,701,261
Bank of Adelaide, South Australia...	500,000	2,334,059
Royal Bank of Queensland, Limited, Brisbane.....	375,000	1,804,661
Bank of North Queensland.....	250,000	899,715
Royal Bank of Australia, Limited, Melbourne.....	300,000	783,497
National Bank of Tasmania.....	152,040	795,723
Western Australian Bank.....	80,000	1,026,594
Standard Bank of Australia.....	278,000	.....

The volume of banking business in each of the colonies, the figures representing the aggregate of advances, deposits, and bills and notes in circulation, was as follows: Victoria, £94,002,196; New South Wales, £81,244,015; Queensland, £28,539,193; New Zealand, £29,861,047; South Australia, \$15,405,257; Tasmania, £6,965,818; Western Australia, £3,638,336. This was a large volume of business in proportion to the population of the colonies, and was a considerable increase over the business done during the quarter ending June 30 of the same year. There was also an increase in the total deposits received by the banks during 1892 of about £5,000,000 over the previous year; but the increase was confined almost entirely to banks regarded as strictly first-class, the Bank of New South Wales leading with an increase of £1,760,000. But the deterioration in the quality of the business transacted is shown by the decrease in the total profits. For six months in 1892 these amounted to £880,082, as against £1,049,627 for the same period in 1891. This decrease affords striking evidence of the fierce competition for business, and also indicates a lack of careful discrimination as to the character of the business taken.

The second phase of the crisis began early in 1893 with the failure on Jan. 28 of the Federal Bank of Australia, Limited, at Melbourne. This bank was established in 1881, opened an office in London in 1887, and obtained there a large sum of money on deposit. It had never been rated as first-class and had not been able to secure the best class of business, and when at its half-yearly meeting in October, 1892, no dividend was declared, a withdrawal of confidence was shown by the immediate falling off in de-

posits. Still, as it had been given a share of the Victoria Government deposits and business, and was within the association of banks that had agreed to assist and support each other, its failure disturbed public confidence in the other banking institutions of the colony, and there was a cessation in the supplies of money from Great Britain. The nominal capital of the Federal Bank was £2,000,000, of which £800,000 had been subscribed and £400,000 paid up. Its liabilities at the time of suspension were estimated at £2,000,000, about half of which was due to British depositors. Depositors are likely to lose fully half of their principal. The bank had no branches, except at Sydney and Adelaide, and these were not immediately affected by the failure. The failure of the Federal Bank was followed by the collapse of a number of land and investment companies and other similar financial institutions in Victoria and New South Wales, and the revelations of bad management and positive dishonesty following closely thereupon had a tendency to still further increase the popular distrust in all financial institutions. In order to allay this distrust and to restore confidence in the banks, the Victorian associated banks held a meeting on March 13, and passed a resolution "to render financial assistance to each other as occasion may require, on such terms and to such extent as may seem justifiable to each and all of them," and a few days later it was announced that this agreement pledged the associated banks, "in case any of their number should require assistance, to advance any necessary amount against its securities." The next bank to succumb was the Commercial Bank of Australia, Limited, at Melbourne, one of the associated banks, which closed its doors on April 4 on account of a continued drain on its resources. The Commercial Bank was founded in 1866 with a nominal capital of £500,000, but only half of the shares were originally issued. The capital was afterward increased to £3,000,000, of which £1,200,000 were paid in. The volume of business done by the bank was very large. The balance sheet for Dec. 31, 1892, showed that out of a total liability to the public of £14,694,956, \$12,044,596 was for deposits; while the assets included £12,111,235 for bills receivable and other advances. At its last half-yearly meeting the bank had declared an annual dividend of 12½ per cent., and carried forward £39,131 of profits; but it had also transferred £300,000 from its reserve to a contingent account, to meet prospective losses on business based upon Melbourne real-estate securities. This left a reserve fund of £750,000. On the day of suspension the management asked the associated banks to sign an agreement to give the Commercial whatever financial support it required. The associated banks declined to do this, but offered to advance £1,750,000 against approved securities. The Treasurer of Victoria, who was present at the meeting, said the Government would assist without conditions. Upon the advice of the solicitors of the Commercial Bank the proposition of the associated banks was declined, as it entailed the surrender of the most valuable securities of the Commercial Bank. The bank had 109 branches in the different colonies, and about one half of its deposits belonged to British in-

vestors. The English, Scottish, and Australian Chartered Bank suspended on April 12 on account of the heavy drain following the suspension of the Commercial Bank of Australia, and which had amounted to £200,000 since the beginning of the month. The capital of this bank was £900,000 paid up, and its deposits amounted to upward of £5,000,000, of which £900,000 belonged to British depositors. It had 91 branches in the different colonies, but the bulk of its business was in Victoria. The head office was in London, but the branch at Melbourne was the head office in Australian colonies. At its last half-yearly meeting £200,000 had been placed to a contingent account to provide for possible losses. This bank did not apply for assistance to the associated banks or to the Government. On April 20 the Australian Joint Stock Bank (Sydney) was compelled to suspend payment on account of the persistent withdrawal of deposits. This bank stood third as to the amount of business transacted in New South Wales. Its authorized capital was £1,000,000, of which £704,394 were paid in, and the balance sheet for Dec. 31, 1892, showed £10,840,840 deposits, of which upward of £4,000,000 were English. The reserve fund amounted to £510,000. The bank had 200 branches, and while most of its business was in New South Wales, there were 20 branches in Queensland, and a considerable business was done in that colony. In the period of distrust which followed the failure of this bank, and which all efforts were powerless to allay, there began a general withdrawal of deposits in Australia, and numerous notices of withdrawal were sent from England and Scotland. The London Chartered Bank of Australia, at Melbourne, announced its suspension on April 25. This bank was established in 1852, and its paid-up capital was £1,000,000, with a reserve liability of the same amount.

At the close of 1892 the deposits in the colonies amounted to £3,315,242—£2,295,878 in Victoria, £869,555 in New South Wales, and £149,809 in Queensland—and the total of British deposits was about the same as that of the colonies. The advances at the same date were £6,312,966—£3,554,635 in Victoria, £2,271,898 in New South Wales, and £486,433 in Queensland. The coin and bullion on hand amounted to £696,456. At the time of suspension the total liabilities were upward of £9,000,000. The head office of the bank was in London, and it had 58 branches in Australia. The Standard Bank of Australia suspended on April 28. Its authorized capital was £1,000,000; subscribed capital, £538,450, of which £278,000 were paid in. The amount of London was £273,000, and Australian £600,000. On Dec. 3, 1891, the bank suspended payment, but resumed business May 30, 1892. Its head office was in London, and its Australian office in Melbourne. It had but one branch. After business hours on Saturday, April 29, the directors of the National Bank of Australasia (Melbourne) decided that, in view of the heavy and continuous withdrawal of its deposits and in justice to the general body of its creditors, the bank would be compelled to temporarily suspend payment. During the month, £650,000 had been withdrawn, and receipts of deposits had declined greatly. The National Bank of Austral-



asia was established in 1858. Its subscribed capital was £1,250,000, of which £1,000,000 were paid in. The deposits held by the bank amounted to about £9,000,000, of which only £1,400,000 were British. On Dec. 31, 1892, the total of advances was £8,432,016, and the reserve of coin and bullion in Australia was £1,427,396. According to the directors' report for March 31, the reserve fund stood at £670,000, and a dividend of 10 per cent. was recommended, as against 12½ per cent. for the preceding year and 15 per cent. in previous years. The head office of the bank was at Melbourne, and it had an office in London, and 143 branches in the colonies. Anticipating that the publication on Monday of the news of the suspension of the bank would cause a panic among the depositors in other banks, the Victorian Government, in the hope of averting universal disaster, resolved at a special meeting of the Cabinet on Sunday to proclaim a five-days' bank holiday, beginning Monday, May 1. This action of the Government, under authority conferred by the Banks and Currency act of 1892, was taken without any general consultation with the managers of the banks, and was regarded by some of them, as well as by a large proportion of the business public, as unwise. The holiday was observed by several of the banks and by the clearing-house, but the Bank of Australasia, the Union Bank of Australia, and the Bank of New Zealand, in Melbourne, kept open for business as usual, and their action did much to quiet the general alarm. The suspension of the National Bank of Australasia and the proclaimed holidays following it marked the beginning of the third and final stage of the crisis. It was the stage of panic. The scarcity of currency for business purposes caused a run upon banks whose soundness was beyond question. People provided themselves with cash entirely beyond their needs; large amounts were withdrawn from the banks and put in the vaults of a safe-deposit company; some withdrew gold that was on deposit, and, after putting it in strong boxes, left it in charge of the very banks from which they had withdrawn it. All discrimination ceased, and the raid became general. The Colonial Bank of Australasia suspended on May 5. It was one of the banks in Melbourne that remained closed during the first three of the proclaimed holidays, and when it opened its doors on the 4th there was an immediate run upon it. This bank was established in 1856 as a purely colonial bank—a character it has always maintained, never having opened an office in London or taken British deposits. Its business was confined exclusively to Victoria, wherein it had 70 branches. The nominal capital was £1,000,000, of which £406,250 had been paid in. On Dec. 31 the aggregate of advances, deposits, and bills and notes in circulation was £7,128,932; the total of deposits at that date was £3,324,754, and the total of advances £3,686,462. The coin and bullion reserve amounted to £352,246. At the last meeting, Oct. 20, 1892, a 12-per-cent. dividend was declared. The Bank of Victoria, Limited (Melbourne), announced its suspension on May 9. A run upon it commenced as soon as it reopened after the proclaimed holidays. The bank was founded in 1852, and was a purely Victorian institution, having 67 branches in that colony and

none elsewhere in Australia. Its authorized capital was £2,000,000, £1,200,000 having been subscribed, and £600,000 paid in. The deposits on Dec. 31, 1892, amounted to £7,000,000. At the time of suspension they stood at about £6,700,000, of which £5,500,000 were due in Victoria and £1,200,000 in the United Kingdom. The local deposits were all for twelve months, but those taken in England were for longer periods up to a maximum of four years. By a return made a short time before suspension the advances of the bank were shown to be £6,147,966, and the coin and bullion £943,355. At the half-yearly meeting, Feb. 2, a 10-per-cent. dividend was declared, and £15,000 added to the reserve, making it £250,000. The bank had always held a leading position, and the management had been regarded as conservative. On May 15 the Commercial Banking Company of Sydney suspended payment, owing to persistent withdrawals by panic-stricken depositors, over £1,000,000 gold having been withdrawn since the failure of the Joint Stock Bank. This institution was started in 1834, and had for many years past led all Australian banks as a dividend-paying concern. Since 1876 the dividend has been uniformly 25 per cent. The capital of the company was £600,000, paid up, and the reserve stood at £840,000. According to the return for Dec. 31, 1892, the deposits amounted to £10,959,598, and the advances amounted to £10,907,020. The bank then had coin and bullion to the amount of £1,702,511, and Government securities valued at £885,800. The balance sheet thus showed an excess of assets over liabilities of over £2,500,000. The bank had 137 branches in New South Wales, and 13 in Queensland. On the same day the Queensland National Bank, Limited (Brisbane), and the Bank of North Queensland (Townsville), also announced their suspension. The Queensland National, which alone transacted the Government business of the colony, suspended mainly on account of heavy withdrawals of British deposits. The bank was started in 1872. Its subscribed capital stood at £1,600,000, £800,000 paid in. The balance sheet for Dec. 31 showed £8,526,962 deposits and other liabilities, of which £3,959,683 were due in Queensland, and £128,943 in New South Wales, while the British deposits amounted to about 55 per cent. of the total amount. The cash and bullion, cash balances, money in London, and Government securities amounted to £2,599,308, and the bills receivable, and other debts due the bank, to £8,133,387. At the half-yearly meeting, Jan. 25, a 10-per-cent. per annum dividend was declared, and £16,810 of profits carried forward. The bank had 64 branches. The Bank of North Queensland had a nominal capital of £1,000,000, of which £500,000 were subscribed and £250,000 paid in. On Dec. 31, 1892, it held deposits amounting to £350,000, and its notes in circulation amounted to £25,659, while bills discounted and other debts due the bank amounted to £494,407. A dividend of 5 per cent. was declared for the half year. The bank had a branch in Sydney and 11 branches in Queensland. The City of Melbourne Bank, Limited, suspended on May 16. This bank was an offshoot of the National Bank of Australasia, and was founded in 1873. Its authorized capital was £2,000,000, of

which £1,000,000 had been subscribed and £500,000 paid in. Deposits amounted to about £5,000,000, of which £3,261,000 belonged to Scottish investors. The failure was due to advices cabled from London that none of the Scotch deposits, the larger part of which matured at an early date, would be renewed. The local depositors had stood loyally by the bank, and there had been no run upon it. The bank had but 5 branches, all in Victoria. The Royal Bank of Queensland, Limited, with the head office at Brisbane, suspended on May 17. Its authorized capital was £1,000,000, of which £750,000 had been subscribed and £375,000 paid in. On Dec. 31, 1892, the total liabilities of the bank were £1,359,605, of which sum £434,049 were due to the shareholders and £927,556 to the public, the deposits being £798,949. A half-year dividend of 5 per cent. was declared. The bank had 21 branches. On the same day there was a run on the Savings Bank at Brisbane, but all demands were promptly met, and it soon subsided.

**New Banking Laws.**—At a conference between the ministry of New South Wales and the managers of the banks doing business in Sydney the Government pledged itself to use its power to maintain the credit of the solvent institutions of the colony. A bill was introduced in the Legislative Assembly providing as a permanent enactment that all demand notes of any bank in the colony shall be a first charge on all assets and property of such bank; and as a temporary enactment, to have force for twelve months only, that the Governor in Council may at any time, by proclamation duly published, make the notes of all banks designated in such proclamation legal tender throughout the colony for a limited period not exceeding the tenure of the act. Before making such proclamation the Governor must be satisfied that the assets of each bank to be included therein exceed its liabilities to creditors by at least the sum of the paid-up capital and the reserve profits, and he may require from each such bank adequate security for the payment of all its notes in gold upon presentation after the expiration of the period named in the proclamation. The bill further provides that if any note of any bank covered by the proclamation shall not be paid upon due presentation at the bank's head office in the colony, the Government shall be liable to any *bona fide* holder (not being a bank) at any time within six months after the expiration of the period limited in the proclamation, and the colonial Treasurer shall pay such note in gold upon presentation. The bill was promptly passed, and became law by the Governor's assent on May 3. Immediately after the suspension of the Commercial Banking Company, May 15, a proclamation was issued under the act making the notes of the Bank of New South Wales, the City Bank of Sydney, the Union Bank of Australia, and the Bank of Australasia legal tender within the colony for six months. The Bank of Australasia and the Union Bank of Australia received instructions from their head offices in London instructing them that, while not hostile to the Government plan, they would continue to pay gold to their customers if required. The Government of New Zealand decided to introduce a similar bill for that colony.

On May 23 the Prime Minister of New South Wales introduced a bill which provides that any holder of a current account with any suspended bank in the colony may obtain from the provisional liquidator thereof a certificate of the amount of his current balance, and on presentation of the same at the treasury receive an advance of one half of the amount in treasury notes. The certificate, which forms the security for the advance, is to be indorsed over to the Treasurer, who will be entitled to stand in the place of the original holder of the account; but this does not give the claim the priority of a Crown debt. The Treasurer is to be reimbursed out of the moneys payable to the holder of the current account. The original account holder has the right of redemption at any time within five years, and the currency of the treasury notes is limited to five years. The Treasurer is to withdraw from circulation at the close of every month notes equal to the sums received during the previous month in reimbursement of any advances, and the issue of these notes is not to exceed the £2,000,000 authorized. The Treasurer is also required to publish a monthly statement of the amount of notes outstanding, and of the moneys received in liquidation of the notes in the preceding month. The bill passed the Legislative Assembly on May 25, and the Legislative Council on the following day, and became law by the assent of the Governor. This measure was severely criticised in the United Kingdom, but it gave great satisfaction and much relief in the colony, where there were 57,000 people having current accounts to the amount of about £4,000,000 locked up, some of them offering to sell their claims at 50 per cent. discount.

In Queensland a similar measure for the relief of the holders of current accounts was passed, and a law was likewise enacted authorizing the issue of treasury notes of £5 or any multiple thereof, payable on demand in gold. The issue of such notes must not at any time exceed the amount of cash and treasury notes then held by the Government, and coin must be held to at least one third of the value of the notes so issued. The act also provides that the Governor in Council may upon emergency proclaim such notes full legal tender throughout the colony for a specified time. A further enactment provides for the issue of 4-per-cent. treasury bills having a currency of four years, to the amount of £1,000,000. These are to be vested in trustees, and to be negotiable only to meet demands upon the treasury under the act authorizing the issue of demand notes. A further enactment provides for an increase of the tax on the notes issued by banks from 3 to 10 per cent., the object being to cause the withdrawal of such notes from circulation; but as to notes already issued, the new tax will not be imposed until the expiration of two years. A fourth enactment deals with the notes of the banks that have suspended payment. It requires that every such bank in the colony shall pay its notes in the same manner as if it had not suspended, and the colonial Treasurer is authorized to advance to the said banks treasury notes in exchange for their own retired notes, which are to be held by the treasurer at 4 per cent. interest, and be a Crown debt against the assets of the banks.



On May 27 a conference was held at Melbourne between the Premiers of Victoria, New South Wales, and South Australia, with the object of determining upon a basis of common action in regard to banking legislation. The Premiers of Queensland and Western Australia were to have participated, but both were unavoidably absent. All those present deemed it advisable to place the banks of issue doing business in the Australian colonies upon a footing similar to those of the United States; that deposits not bearing interest should be a first charge upon assets, and that current accounts should rank next, Government accounts in each case having priority; that it would be inadvisable for the colonies to establish national banks in the popular signification of the term, and that the savings banks in each colony should be controlled by the state. It was agreed that Sir John Downer, Premier of South Australia, should draught a bill embodying the conclusions reached, and that the measure should be submitted for the approval and legislative action of all the colonies.

**Reconstruction.**—Following immediately upon the suspension of the various banks, schemes were in most cases presented for their reconstruction for the purpose of resuming business, and these were for the most part promptly accepted by the shareholders and depositors. While differing in minor details these schemes bore a strong resemblance in their general features, and the following, upon which the reorganization of the Commercial Bank of Australia was based, will serve as a fair sample of all of them:

- 1. The present company shall be placed in voluntary liquidation.
- 2. A new company shall be formed with a capital of £6,000,000, represented by 600,000 shares fully paid up to £10, composed of preference and ordinary shares as follows: 300,000 preference shares to the creditors in respect of their deposits, or to the old shareholders paid for in cash, thus representing a total of £3,000,000; 300,000 ordinary shares of £10, each paid up to £4, to be allotted to old shareholders in exchange for their present shares paid up to £1,200,000, the uncalled £6 per share to be paid by quarterly installments of 5s. per share extending over six years, totaling £1,800,000.

- 5. Preference shares shall be preferential as to dividend, so as to be entitled to a dividend of 5 per cent. before ordinary shares shall be entitled to any; thereafter ordinary shares shall be entitled to a dividend of 5 per cent., after which both classes of shares shall be entitled to equal dividends.
- 6. In order to insure the taking of the requisite number of preference shares, all the depositors shall be bound by resolution sanctioned by the court to apply for them *pro rata*.
- 7. The liability of the shareholders in the old company for its uncalled capital shall be extinguished.
- 8. The new company shall take over all the assets and liabilities of the old company.
- 9. Creditors of the old company shall accept deposit receipts of the new company for the balance of the amounts not absorbed in the payment of the preference shares for five years from their due dates of payment, carrying interest at 4½ per cent. payable half yearly; the new company to have the option to pay off any such deposits before maturity, on giving three months' notice.
- 10. The assets *in globo* of the old company shall be constituted an assets and realization account in the books of the new company, and be credited with such items as are taken over by the new company, and debited with interest half yearly at the rate of 4½ per cent. per annum.
- 11. If the assets of the old company when realized do not produce sufficient to pay the liabilities of the old company paid by the new company as purchase money, and to provide capital for the shares issued to the creditors of the old company, the dividends of the ordinary shareholders, or such portion thereof as the directors of the new company may from time to time decide, shall be retained and applied until the deficiency is made up; and the directors may exercise this power before the realization, if a deficiency is anticipated by them. Should the realization result in a surplus, it shall go to a new reserve fund in the new company.
- 12. The bank premises shall be treated as if realized and taken over at the actual amount standing in the books of the old company.

This scheme, with a few minor modifications, relating chiefly to trustee depositors precluded from taking preference shares, was sanctioned by the court, and the reconstructed bank opened its doors for general business. The following table compares the scheme of reconstruction with that of seven other prominent banks that had suspended:

BANK.	Deposits (about)	CONVERTED INTO—				Period of debentures, etc.
		Fixed capital.		Debentures, or deposit receipts.		
		Amount.	Interest.	Amount.	Interest.	
			Per cent.		Per cent.	
Commercial, of Australia .....	£9,000,000	£3,000,000	5 and ad't'l	£6,000,000	4½	5 yrs.
Australian Joint Stock .....	10,055,000	1,435,000	5 to 7	8,600,000	4½	4 to 9 yrs.
Bank of Victoria .....	6,000,000	One fifth.	5 to 7	Four fifths.	{ 4½	12 yrs., or
Commercial Banking Co., Sydney.....	10,000,000	.....	.....	Current ac't.	4	5 to 7 yrs.
City of Melbourne.....	4,000,000	One fifth.	5 to 7	Deposit ac't.	4½	1 to 5 yrs.
English, Scottish, and Australian Chartered.	5,000,000	2,500,000	4½	Four fifths.	4 to 4½	5 to 8 yrs.
National, of Australasia.....	4,500,000	1,500,000	5 to 7	4	4	10 yrs. or less.
Standard, of Australia.....	820,000	460,000	5 and ad't'l	360,000	4½	Indefinite.
						5 to 7 yrs.
						5 yrs.

- 3. The formation of the new company shall not depend upon obtaining the whole of the above capital of £6,000,000.
- 4. The preference shares shall be preferential to the ordinary capital until the new company shall have paid 10 half-yearly dividends of 8 per cent. per annum, when the preference as to capital shall cease.

The scheme of the Commercial Company of Sydney differed from all the others tabulated in that it did not provide for any preference shares for depositors. It provided for registration under the Limited Liability act, with a capital of £2,000,000, in shares of £25, half paid in. Cur-

rent account holders receive 10 per cent. in one month, 5 per cent. six months later, and 5 per cent. quarterly thereafter until they are paid in full with  $3\frac{1}{2}$  per cent. interest; or they may take 4-per-cent. deposit receipts payable in one, two, three, four, and five years. Fixed deposit holders receive deposit receipts bearing  $4\frac{1}{2}$  per cent. interest, the receipts payable in five, six, seven, and eight years. The plan of the Australian Joint Stock Bank provided for the payment of all existing customers of the bank in cash to the extent of £100, and several other banks made a similar provision. The scheme of reconstruction of the Queensland National Bank was on entirely different lines. It provided for the calling up of £3 per share on the capital; the reduction of the nominal capital of the bank from £2,000,000 divided into 200,000 shares at £10 each to £1,600,000, divided into 200,000 shares of £8 each, the reduction to be effected by cancelling the paid-up capital to the extent of £2 per share upon each of 160,000 shares which had been issued, and by reducing the nominal amount of all shares in the bank's capital to £8 per share; and for the subsequent increase of the so-reduced capital to £3,000,000 by the creation of 175,000 new shares of £8 each, such new shares to be disposed of at such times and to such persons and on such terms as the directors of the bank may deem advisable. On June 29 the Commercial Bank of Australia, the Bank of Victoria, the National Bank of Australasia, the City of Melbourne Bank, the Commercial Banking Company of Sydney, and the Australian Joint Stock Bank had resumed business; the Colonial Bank of Australasia resumed July 10, and the Queensland National Bank reopened its doors for general business; while several other banks were in an advanced stage of reconstruction. To the shareholders of the suspended banks reconstruction was undoubtedly favorable, as it saved the greater expense of liquidation, and relieved them from paying in at once the amounts for which they were liable on their shares, and distributed these amounts over a long period of time. To the depositors who were forced by the plan to become shareholders it was not so favorable. The banks as a rule kept as much as possible of the deposits in the form of proprietary capital, and retained large options as to the repayment of the remainder. The depositors, however, accepted reconstruction as the only alternative for eventually getting back their money. Most of the banks which were forced to suspend are once more doing business, but as a result of the stupendous financial calamity in which they have participated, banking capital to the extent of nearly £20,000 has, by the depreciation of shares, been wiped out, while deposits to the amount of about £70,000,000 have been locked up for a period of years.

**New South Wales.**—The Earl of Jersey, who was appointed Governor of the colony in October, 1890, resigned in January, 1893, and Sir R. W. Duff was appointed to the governorship, and entered upon his office on May 29. The new Governor is a Scotsman, who has had upward of thirty years' experience in the British Parliament. The ministry in office at the beginning of 1893 was as follows: Premier and Colonial Secretary, Sir George R. Dibbs; Colonial Treas-

urer, John See; Attorney-General, E. Barton; Secretary for Lands, H. Copeland; Secretary for Public Works, W. J. Lyne; Minister of Public Instruction, F. B. Suttor; Minister of Justice, R. E. O'Connor; Postmaster-General, John Kidd; Secretary for Mines and Agriculture, T. M. Slattery; Vice-President of the Executive Council and Representative of the Government in the Legislative Council, Sir J. E. Salomons. Mr. Salomons resigned Jan. 25, on account of a difference with his colleagues, and was succeeded by Dr. J. N. MacLaurin. An attack was made upon the ministry, on account of the financial statement made by the Treasurer, but the motion of want of confidence was not carried. The statement showed an existing deficit of £1,150,000. The Premier formulated a scheme for the equalization of income and expenditure which included an increase of taxation and a reduction of expenses. The expenditure of 1893 was to be less by £795,000 than that of 1892, and a new source of income to be found in the imposition of an income tax on a graduated scale. On incomes from £200 to £500 it was proposed to lay a tax of 4*d.* in the pound; from £500 to £1,500, 6*d.*; from £1,500 to £5,000, 8*d.*; and on all above the latter amount, 10*d.* It was also proposed to reduce by 5 per cent. the salaries of all public servants receiving over £200 per annum, and also to lay a tax upon the property of absentees.

**Victoria.**—The Governor is the Earl of Hopetoun, who entered on his office in November, 1889. The Shiels ministry was defeated on a direct vote of want of confidence moved by Mr. J. B. Patterson, who was invited to form a new ministry. The Executive Council was reconstituted as follows: Premier, Chief Secretary, and Minister of Railways, J. B. Patterson; Attorney-General, Sir Bryan O'Loughlen; Solicitor-General, Mr. Isaacs; Treasurer, Godfrey Downes Carter; Minister of Customs and Education, John Campbell; Minister of Defense and Health, Robert Reid; Minister of Mines and Water Supply, J. H. McColl; Postmaster-General, Agar Wynne; Minister of Agriculture and Public Works, W. T. Webb; ministers without portfolios, Messrs. Baker, Richardson, Abbott, and Cooke. The new Premier has for many years represented Castlemaine in the Legislative Assembly. He has been twice Minister of Public Works, and was Minister of Railways in 1880-'81, and Minister of Customs in 1889-'90.

In this colony, as in New South Wales, the condition of the public finances engaged at the beginning of the year the most serious attention. The specific charge on which the Shiels Government was overthrown was that it had failed to carry into effect any scheme of consistent retrenchment. Mr. Patterson announced that the policy of the new Government would be rigid retrenchment which would bring the expenses of the colony within the revenue. He anticipated that the deficit would amount in June to £1,800,000. He promised large reductions in the civil service and reform in the land administration by encouraging co-operative settlement. For increasing the revenue the Government proposed either an income tax or the temporary expedient of laying a small duty on imports now admitted free. In pursuance of this programme the Legislative Assembly voted to reduce the



salaries of future colonial governors from £10,000 to £7,500, which is the same as in New South Wales, and also passed measures for reducing the salaries of ministers, members of Parliament, and all officers receiving salaries under special appropriations of revenue. A resolution was carried by a majority of four for the imposition of an income tax. A very strong opposition was developed to the measure among the commercial class, and an amendment was offered, Aug. 29, substituting for it a tax on unimproved lands. But the Government had resolved to stand or fall by this proposal, as the only means of meeting maturing obligations without recourse to London for a new loan, and the amendment was defeated. On Sept. 13, however, it was announced that, in consequence of the rejection by the Assembly of the Treasurer's proposal to reduce subsidies to the municipalities to £260,000, and of the narrow majority obtained for the income tax, the Government had decided to adopt the substitute plan of doubling sugar duties. This, it was estimated, would bring in during the remainder of the year £100,000.

**Queensland.**—The Governor of the colony is Sir Henry Wylie Norman, appointed in December, 1888. Sir Samuel Griffith, head of the ministry in office at the beginning of 1893, having accepted the position of Chief Justice of the colony, the ministry resigned, March 12, with the view of being reconstructed under the leadership of Hugh Muir Nelson, late leader of the Opposition, who had acted as Premier during the absence of Mr. Griffith from the colony. Mr. Nelson, however, was unable to form a satisfactory Cabinet, and Sir Thomas McIlwraith, the late Treasurer, was requested by the Governor to form a ministry. The new ministry is constituted as follows: Premier, Chief Secretary, and Secretary for Railways, Sir Thomas McIlwraith; Colonial Treasurer, Hugh Muir Nelson; Secretary for Public Lands and Agriculture, Andrew H. Barlow; Postmaster-General and Secretary for Education, Walter H. Wilson; Secretary for Mines and for Public Works, I. Lissner; Attorney-General, Thomas J. Byrnes; Colonial Secretary, Horace Tozer. The new Premier was born in Ayr, Scotland, in 1835. He had held the position of Premier of Queensland from 1879 to 1883, and from June to November, 1888. Messrs. Tozer, Byrnes, and Wilson, had, like Sir Thomas McIlwraith, been members of the Griffith ministry. The elections began April 28. Mr. Lissner being defeated by the Labor candidate, Robert Philp was appointed Minister of Mines and Works. The Government announced that its policy would be one of retrenchment and economy, and that every item of public expenditure should be revised, and salaries of civil officers, from the highest to the lowest, cut down. It was decided also to dispense with the services of some 600 officials, and it was hoped that a saving of £300,000 would be effected. In presenting the annual budget statement to the Assembly, the Premier said that every effort had been made to cut down expenses, but the deficit on the year amounted to £111,000, making a total deficiency of £1,500,000, the greater part of which had been covered by the issue of treasury bills. The revenue had fallen off during the year £220,000, owing

to decreased returns from taxation, unprecedented floods in one portion of the colony and disastrous droughts in another, and partially also to the monetary crisis. He estimated the revenue for the coming year at £3,375,000.

**Land Settlement.**—The Government introduced a bill into the Legislative Assembly, Aug. 3, to authorize the establishment of self-governing communities on the unalienated lands, intended for the benefit of persons who may be willing to co-operate in tilling the soil. The bill also authorizes the Government to give facilities for the establishment of labor colonies for the relief of the indigent and unemployed.

**South Australia.**—The Governor is the Earl of Kintore, who was appointed in December, 1888, and entered upon office April 11, 1889. The heads of departments at the opening of 1893 were: Premier and Chief Secretary, J. W. Downer; Attorney-General, R. Homberg; Treasurer, W. T. Rounsevell; Commissioner of Public Works, L. Grayson; Minister of Agriculture and Education, W. Copley; Commissioner of Crown Lands, J. H. Howe. The general elections took place throughout the colony on April 15, and the Labor candidates were generally successful. In consequence of a hostile motion in the Assembly, June 13, the resignation of the ministry was tendered to the Governor, who requested C. C. Kingston, who made the hostile motion, to form a new ministry. The new ministry, which assumed office on June 15, was constituted as follows: Premier and Attorney-General, C. C. Kingston; Treasurer, T. Playford; Commissioner of Public Works, Mr. Holder; Minister of Agriculture and Education, Dr. Cockburn; Commissioner of Crown Lands, P. P. Gillen; Representative of the Government in the Upper House, J. H. Gordon. The new Premier announced that the Government programme would include a reduction of 5 to 10 per cent. in all civil-service salaries. The gunboat "Protector" would be laid up, and the military expenditures reduced. The land tax and the tax on the property of absentees, as well as the tax on incomes of £1,000 and upward, would be increased, but no change would be made in the customs duties. The savings banks would be taken over by the Government, and a note issue was contemplated. In presenting the annual budget statement to the Assembly, the Treasurer said the deficit for the year amounted to £164,000, which, added to the deficit at the beginning of the year, would make the total deficiency £844,000.

**Western Australia.**—The Governor is Sir William C. F. Robinson, who held the office before in 1874, and was again transferred to Western Australia in 1889. Responsible government was organized under the Western Australia Constitution act, passed by the British Parliament in 1890. The Cabinet, as first constituted, and as it remained at the beginning of 1892, was composed as follows: Premier and Treasurer, Sir John Forrest; Chief Secretary, Mr. Shenton; Attorney-General, Mr. Burt; Commissioner of Lands, Mr. Marmion; Minister of Public Works, Mr. Venn. At the reopening of Parliament, early in July, the Governor in his speech said that the general prospects were most encouraging, and the development of the resources of the

colony gave great promise for the future. Good progress had been made with the construction of the southern and the Yelgaru railways, and with the work upon Freemantle and Albany harbors, which, when completed, would permit the largest ships to enter either of them by day or night. The Premier and Treasurer in his financial statement informed the Assembly that there was a credit balance on June 30 of £63,000, while the revenue showed an increase of 10 per cent. over the previous year. The Legislative Assembly, Aug. 16, passed the Constitution bill, which virtually establishes manhood suffrage. During the summer rich auriferous quartz reefs were discovered near Coolgardie, 4½ tons of ore from which were said to have yielded 9,000 ounces of gold.

**Tasmania.**—Sir Robert G. C. Hamilton was appointed Governor of the colony in January, 1887. The ministers at the beginning of 1893 were the following: Premier, H. Dobson; Chief Secretary, Adye Douglas; Treasurer, John Henry; Attorney-General, N. E. Lewis; Minister of Lands and Works, W. Hartwell; Minister without portfolio, C. H. Grant. Ministers must have a seat in one of the two legislative houses.

**New Zealand.**—The Governor is the Earl of Glasgow, who received the appointment in June, 1892. The ministry at the beginning of 1893 was constituted as follows: Premier, Colonial Treasurer, and Commissioner of Trade and Customs, J. Ballance; Attorney-General and Colonial Secretary, P. A. Buckley; Minister of Agriculture, Lands, and Immigration, J. Mackenzie; Minister of Mines, Marine and Defense, and Public Works, R. J. Seddon; Minister of Education and Labor and Commissioner of Stamp Duties, W. P. Reeves; Minister of Justice and Native Affairs, A. J. Cadman; Postmaster-General, J. G. Ward; minister without portfolio, representing the native races, J. Carroll. Mr. Ballance died April 27, and Mr. Seddon, who had acted as Premier during the illness of his chief on May 1, accepted the post of Premier. Mr. Ward was made Colonial Treasurer, in succession to Mr. Ballance, the ministry remaining otherwise unchanged. Sir Robert Stout was offered the portfolio of Education, but declined, as he considered himself entitled to the premiership. Mr. Seddon, the new Premier, was born in Lancashire, England, and had been Minister of Mines since 1891. The third session of the present Parliament was opened on June 22 with a speech by the Governor. He congratulated the colony on the buoyancy of the finances and the general prosperity, saying that the surplus for the past financial year was unparalleled. The exports were increasing, and the efflux of population, which had been an alarming feature in former years, had now ceased. The fact that New Zealand had been unaffected by the financial panic was convincing evidence of the prudence with which public and private finance had been conducted. The Treasurer made his budget statement July 4. He estimated that the expenditures for the year would be £4,400,000, and the receipts £4,539,000. The surplus of £130,000, added to last year's surplus, would make a total of £413,000. He said the Government intended to devote a quarter of a million to the construction of public works. It was also

proposed to exempt from taxation all improvements on properties of whatever size, while building societies and mining companies would be relieved from taxation. Customs duties would remain unaltered.

In September, 1892, a bill conferring the franchise upon women was passed by one of the Houses of Parliament, but made no further progress during that session. The Ballance Government was, however, fully committed to the measure, and when Mr. Seddon became Premier he reiterated the intention of the Government to press the measure. It was introduced early in the third session, and passed the House of Representatives on Aug. 11, and the Legislative Council on Sept. 8. On Sept. 19 the bill came before the Governor and received the royal assent. The act confers the parliamentary franchise on both European and Maori women.

**AUSTRIA-HUNGARY**, a dual monarchy in central Europe. The provinces of the monarchy have been in political union as two states under the same dynasty since 1867, having a common head in the Emperor of Austria and King of Hungary. The crown is hereditary in the Hapsburg-Lothringen dynasty, passing by right of primogeniture and lineal succession to males and (on failure of males) to females. The monarch must be a member of the Roman Catholic Church. The reigning sovereign is Franz Josef I, born in 1830, the son of Archduke Franz Karl, second son of the Emperor Franz I of Austria. The heir presumptive is the Archduke Franz, born in 1863, son of the Emperor's brother, Archduke Karl Ludwig. The foreign, financial, and military and naval affairs of the two monarchies are managed in common, except that each legislates independently concerning the army. They also have in principle common management of coinage, indirect taxation, commerce, and interstate railroad affairs. The monarch exercises legislative authority only with the co-operation and consent of the Parliaments. Legislation in affairs common to both Parliaments is accomplished by means of Delegations consisting of 60 members from each Parliament, of whom 20 are from each of the upper houses, and 40 from each of the lower houses, all appointed for one year. The Parliamentary Delegations are summoned annually by the Emperor, alternately at Vienna and Budapesth. They deliberate apart, and their decisions are communicated reciprocally in writing. If after three such interchanges they fail to agree, the two Delegations come together and settle the question by vote and without discussion. The Emperor, with the approval of the Delegations, appoints the common ministry, and the Delegations have control over the three executive departments, with power to impeach ministers. At the beginning of the year the common ministry was constituted as follows: Minister of Foreign Affairs and of the Imperial House, Graf G. Kalnoky de Köröspatak, born in Moravia, 1832, and appointed Nov. 21, 1881; Minister of War for the Whole Monarchy, Field-Marshal Baron Ferdinand Bauer, appointed March 16, 1888; Minister of Finance, Benjamin de Kallay, appointed June 4, 1882. Baron Bauer died in July, and early in August Lieut.-Field-Marshal Baron Rudolf Merkl was an-



nounced as his temporary successor. On Sept. 25 the Emperor relieved Baron von Merkl by appointing Lieut.-Field-Marshal von Kriegshammer Minister of War for the Whole Monarchy. Gen. Kriegshammer was born in Moravia in 1832, entered the Neustadt Military Academy in 1843, became a lieutenant in 1849, was promoted to a captaincy and received the cross for distinguished military service in the battle of Solferino in 1859. He also served in the Prussian campaign, was appointed aide to the Emperor in 1869, and was promoted to the rank of general and commander of the cavalry corps of Cracow in 1891.

**The Common Budget.**—The common expenditures are covered by the net proceeds of the common customs, the deficit being made up by proportionate payments of each country, Hungary paying 2 per cent. of the total deficit, and 30 per cent. of the remaining 98 per cent., of which Austria pays 70 per cent. The expenditures for 1893 were estimated at 143,821,887 florins (1 florin = 41 cents). The estimated receipts from customs were 42,283,400 florins; receipts of the administration, 2,677,493 florins; leaving 67,818,642 florins to be made up by Austria, and 31,041,352 florins to be paid by Hungary. The ordinary expenditures amounted to 125,359,122 florins, of which 3,603,600 florins were for the diplomatic service, 109,829,840 florins for the army, 9,788,280 florins for the navy, 2,010,800 florins for the financial department, and 126,602 florins for the Board of Control. The extraordinary expenses amounted to 18,462,765 florins, of which 46,400 florins were for the diplomatic service, 16,126,965 florins for the army, and 2,289,400 florins for the navy. The extraordinary expenditures for Bosnia and Herzegovina amounted to 3,712,000 florins.

The general debt of the monarchy on July 1, 1892, amounted to 2,790,594,891 florins. Austria's special debt in 1891 amounted to 1,055,491,000 florins, and that of Hungary to 1,930,115,000 florins, making a total of 5,776,200,891 florins. The floating debt in 1892 amounted to 411,994,925 florins.

**Area and Population.**—The area of the Austrian provinces is 115,903 square miles, with a population on Dec. 31, 1890, of 23,895,413; that of Hungary, 125,039 square miles, with a population of 17,463,473. The number of marriages in Austria in 1891 was 186,418; births, 947,017, of which 139,512 were illegitimate and 27,514 stillborn; deaths, 673,315; surplus births, 246,188. The figures for Hungary in 1889 are: Total births, 767,884, of which 12,904 were stillborn and 61,468 illegitimate; marriages, 140,524; deaths, 512,852; surplus of births, 242,128.

In 1890 74,002 persons emigrated from the whole monarchy, of whom 63,119 were bound for North America and 1,918 for the Argentine Republic. According to United States statistics, there arrived in that year 38,125 Austrians and 24,994 Hungarians.

The principal cities and their population on Dec. 31, 1890, were: Vienna, the capital of Austria, 1,364,548; Prague, 310,483; Trieste, 158,344; Lemberg, 128,419; Buda-Pesth, the Hungarian capital, 506,384; Szegedin, 87,210.

The population, according to language, was as follows in 1890: Germans in Austria, 8,461,-

580, in Hungary, 1,972,115; Bohemians, Moravians, and Slovaks in Austria, 5,472,871, in Hungary, 1,892,806; Polish in Austria, 3,719,232; Ruthenians in Austria, 1,176,672, in Hungary, 360,051; Slovenes in Austria, 1,176,672; in Hungary, 86,401; Servians and Croats in Austria, 644,926, in Hungary, 2,359,708; Italians in Austria, 675,305; Roumanians in Austria, 209,110, in Hungary, 2,423,387; Magyars in Austria, 8,139, in Hungary, 6,478,711. Besides these there are 82,256 gypsies and 83,940 persons speaking various other languages in Hungary.

**The Army.**—Military service is compulsory, and has a duration of twelve years, of which three years are spent in active service, seven years in the reserve, and two years in the Landwehr. Besides this the army and the Landwehr have a so-called Ersatz reserve, into which those are drafted who are either exempt from active service or are disqualified by personal defects, but are otherwise capable of carrying arms. Those immediately drafted into the Ersatz reserve of the army have to serve ten years, and those in the Ersatz reserve of the Landwehr twelve years. Those discharged after twelve years of service form for another ten years part of the Landsturm, to which every male citizen between the ages of nineteen and forty-two not serving in any of the other categories belongs. The Landwehr is organized independently of the common army and separately in the two monarchies. It is called out in time of peace for drill and instruction only, and in case of war the Emperor's command is required to mobilize it. The Landsturm can only be called out in time of war, by order of the Emperor, and can not be utilized outside of its own territory unless a special statute provides for it. The contingent of recruits for the army in 1893 was 103,100, of which Austria furnished 60,389, and Hungary 42,711. There were besides a contingent of recruits for the Ersatz reserve, numbering 27,400, a contingent of 10,000 recruits for the Austrian Landwehr, and a contingent of 12,500 recruits for the Honved or Hungarian Landwehr. The peace effective for 1893 was as follows: Infantry, 210,780, of which 187,846 belonged to the army and 22,934 to the Landwehr; cavalry, 49,459, of which 45,360 belonged to the army and 4,099 to the Landwehr; field artillery, 27,267; fortress artillery, 8,130; technical troops, 9,623; train, 3,146; sanitary troops, 2,712; general and field officers, etc., 5,932; military establishments, 8,982; making a total of 326,031. The war footing is fixed at 1,753,583, of which the regular army furnishes 939,192, the Landwehr 355,127, and the Landsturm 459,264.

The annual manoeuvres of the Austro-Hungarian army began at Güns, Sept. 16, and continued six days. The scheme of operations covered an unusually wide territory, and by order of the Emperor all movements were directed in the Hungarian language. On the first day the Army of the South, consisting of two army corps, commanded by Field-Marshal Reinlander, began its march upon Güns, that town being occupied and defended by the Army of the North, consisting of three army corps, under command of Field-Marshal von Schönfeld. On the third day an attack was made on Güns, great masses of cavalry being precipitated upon

the town. The Emperor of Germany rode at the head of the Hungarian Hussars in the attacking party. The Army of the North was driven out, the Austrian Emperor and the princes retreating with it, and Gen. von Reinlander occupied Güns and the adjacent villages. On the fourth day the entire forces of both armies, amounting to upward of 130,000 men, were engaged. The Army of the South had crossed the river Stob by means of pontoons, and sought to defend the position. A fierce artillery battle raged for several hours. Under cover of their guns the Army of the South threw pontoons across the river and effected a landing on the opposite bank, forcing the enemy again to retire. On the fifth day the Army of the North, having been re-enforced by the Vienna Corps, assumed the offensive. The line of battle was five miles long. The flank of Gen. von Reinlander's army was turned and he was compelled to retreat. On the sixth day the victorious army attempted to dislodge Gen. von Reinlander from the new position he had taken up, but failed. The victory was awarded to the Army of the North for having turned the enemy's flank. Men and horses suffered severely from exhaustion, and many accidents occurred during the fighting. The plain and inconspicuous Austrian uniform seemed well adapted for use in a battle where smokeless powder is used. Bicycle riders and dogs were utilized for the carrying of dispatches, and the new waterproof silk tents proved their superiority in every way to any tent heretofore used. The army commissariat proved inefficient, the men having to wait sometimes till midnight before rations were served. In an order of the day the Emperor expressed his satisfaction with the manœuvres and with the discipline of the troops, and declared that he had entire confidence in the army.

**The Navy.**—The Austrian navy consists of 2 turret ships, of 21 guns, 22 machine guns, and 13,000 indicated horse power; 8 plated casemate ships, of 142 guns, 88 machine guns, and 28,500 indicated horse power; 1 plated frigate, of 20 guns, 9 machine guns, and 3,500 indicated horse power; 2 ram cruisers, 7 torpedo ships, 6 torpedo vessels, 62 torpedo boats, 3 avisos, 6 training ships, 3 river monitors, 17 station and service ships, 10 vessels for harbor and coast service, 9 school and barrack ships, and 4 stationary vessels. The navy is manned in time of peace by 676 officers, 424 engineers, mechanics, etc., 7,500 sailors, and 4,500 marines.

**Commerce.**—The general commerce of the Austro-Hungarian customs union, including Bosnia and Herzegovina, amounted in 1891 to 618,300,000 florins of imports and 787,600,000 florins of exports. The values of the principal imports were as follow: Cotton, 45,500,000 florins; coffee, 38,900,000 florins; wool, 37,100,000 florins; coal and coke, 24,400,000 florins; silk, 20,900,000 florins; woolen yarn, 17,700,000 florins; machinery, 17,600,000 florins; furs and hides, 17,500,000 florins; leaf tobacco, 16,700,000 florins; cattle, 16,700,000 florins; leather, 15,300,000 florins; cotton yarn, 13,900,000 florins; books and newspapers, 13,000,000 florins; hardware and clocks, 12,700,000 florins; silk goods, 12,100,000 florins; woolen goods, 12,000,000 florins; colors and tanning material, 10,900,000 florins; grain,

7,200,000 florins; manufactured tobacco, 4,900,000 florins. The following are, the values of the principal exports: Sugar, 83,000,000 florins; grain, 80,400,000 florins; timber, 63,500,000 florins; cattle, 37,100,000 florins; coal and coke, 34,300,000 florins; hardware, 21,600,000 florins; glass and glassware, 19,000,000 florins; wooden ware, 18,200,000 florins; gloves, 17,900,000 florins; iron and ironware, 17,500,000 florins; woolen goods, 16,000,000 florins; paper and paper ware, 16,000,000 florins; eggs, 16,000,000 florins; flour, 15,200,000 florins; feathers, 13,700,000 florins; wool, 11,900,000 florins; leather ware, 11,800,000 florins; minerals, 11,700,000 florins; wine, 9,300,000 florins; silk ware, 7,700,000 florins; linen yarn, 7,000,000 florins.

**Navigation.**—During the year 1890 there were 26,856 sailing vessels, of 894,338 tons, and 41,817 steamers, of 7,622,540 tons, entered, and 26,794 sailing vessels, of 893,160 tons, and 41,832 steamers, of 7,552,114 tons, cleared at Austro-Hungarian ports. In 1891 there were entered at the port of Trieste 3,506 sailing vessels, of 119,396 tons, with cargoes, and 766 sailing vessels, of 49,682 tons, without cargoes; 2,516 steamers, of 1,171,642 tons, with cargoes, and 1,047 steamers, of 134,145 tons, without cargoes. There were cleared 2,893 sailing vessels, of 143,012 tons, with cargoes, and 1,350 sailing vessels, of 28,439 tons, without cargoes; 3,058 steamers, of 1,197,255 tons, with cargoes, and 484 steamers, of 109,474 tons, without cargoes. The commercial navy, in the beginning of 1892, was composed of 10,380 vessels, of 250,568 tons, of which 261, of 186,810 tons, were seagoing; 1,734, of 43,526 tons, coasting vessels, and 8,385, of 20,232 tons, were vessels of all kinds. The crews of the commercial navy numbered 29,772.

**Railroads.**—On Jan. 1, 1892, there were 15,650 kilometres of railroads in operation in Austria, and 12,045 kilometres in Hungary. Of the Austrian roads, 6,337 kilometres were owned by the Government, 1,645 kilometres were worked by the Government but belonged to companies, and 7,668 kilometres were operated by companies. Of the Hungarian roads, 7,443 kilometres were owned by the Government, 2,459 kilometres leased and operated by the Government, and 2,143 kilometres owned and operated by companies. The length of railroads in Bosnia and Herzegovina in 1892 was 384 miles.

**Posts and Telegraphs.**—In 1891 there were expedited by the Austrian post-offices 493,188,850 letters and postal cards, 74,433,500 samples and printed inclosures, and 68,985,020 newspapers. The Hungarian post-offices forwarded 141,089,240 letters and postal cards, and 22,140,880 samples and printed inclosures. There were in the same year 17,609 miles of telegraph lines with 50,154 miles of wire in Austria, 12,473 miles of lines with 46,700 miles of wire in Hungary, and 1,765 miles of lines with 3,814 miles of wire in Bosnia and Herzegovina. There were transmitted a total of 14,293,336 messages, of which 9,661,297 were over Austrian lines, 4,310,120 over Hungarian lines, and 321,919 over the lines of Bosnia and Herzegovina. Receipts of posts and telegraphs in Austria in 1891 amounted to 32,500,919 florins, and expenditures to 29,174,954 florins. The receipts in Hungary were 13,723,856 florins, and the expenses 9,561,836 florins.



**Agriculture.**—The cultivation of the soil is the chief industry of the monarchy, more than half the population (if family and house servants be included) being engaged therein. Wheat, barley, rye, and oats are the principal cereal crops, and potatoes and beets the principal root crops. In Austria, in 1890, the area and yield of these in hectares (1 hectare=2·47 acres) and hectolitres (1 hectolitre=2·75 bushels) was as follows :

CROPS.	Hectares.	Hectolitres.	Yield per hectare.
Wheat .....	1,147,000	15,528,000	13·5
Barley .....	1,116,000	19,188,000	17·2
Rye .....	2,000,000	28,418,000	14·2
Oats .....	1,874,000	36,731,000	19·6
Potatoes .....	1,079,000	* 82,844,000	* 76·3
Sugar beets .....	245,000	* 55,229,000	* 225·6

The production in Hungary in 1889 was as follows :

CROPS.	Hectares.	Hectolitres.	Yield per hectare.
Wheat .....	1,901,000	32,950,000	11·3
Barley .....	1,006,000	12,163,000	12·0
Rye .....	1,082,000	12,996,000	11·9
Oats .....	1,018,000	15,378,000	15·1
Potatoes .....	439,000	40,101,000	91·2
Sugar beets .....	55,000	* 11,091,000	* 202·8

\* Metrie-centners.

For 1892 the figures from official sources show that the total wheat crop in Austria-Hungary was 196,279,000 bushels. During the spring months of 1893 much apprehension was expressed regarding the condition of the crops in a very large area of the monarchy on account of drought. The report of the Minister of Agriculture, issued June 12, was, however, somewhat reassuring. It stated that the crops, with the exception of rye, had been materially benefited, and that good yield of wheat and at least a medium crop of oats and barley might be expected, while the rye crop promised fair outside of Galicia, Bukowina, and northwest Bohemia. The sugar beet suffered from drought and insects in Bohemia and Moravia. Careful estimates by the department after the crops were secured indicated an approximate shortage, as compared with 1892, of wheat, 13,750,000 bushels; rye, 13,000,000 bushels; and barley, 975,000 bushels. The quality, however, especially in Hungary, was reported much above the average. Owing to the prevailing drought in neighboring countries and in England, exports of hay and straw increased enormously during June and the first half of July. These large exports, together with a strong probability of scarcity of fodder in Bohemia during the coming fall and winter, led to negotiations between the Austrian and Hungarian governments for the prohibition of the export of all kinds of fodder. Such a prohibition was speedily determined upon, and the order was promulgated July 20. The prohibition covers hay, fresh and dried clover, straw, and chaff, which are not to be conveyed beyond the Austro-Hungarian boundaries. No time is fixed for the revocation of the order, which is left to the discretion of the administration; but it is understood that it will continue in force until next spring or summer. Such an interdiction has never before been made by the

Austrian Government. The export of wheat was prohibited in 1859, and again in 1866, but on both occasions as a war measure.

**Session of the Parliamentary Delegations.**—The session of the Parliamentary Delegations was opened in Vienna on May 25, and the common budget was submitted to each Delegation. The Austrian Delegation elected Prince Alfred Windischgrätz president, and Herr Jaworsky vice-president. The young Czech Delegates complained that the budget committee did not contain a single representative of the Bohemian nation. Dr. von Plener replied that all parties were resolved to have no further dealings with the Young Czechs, who had in the last sitting of the Bohemian Diet disregarded the ordinary usages of Parliament.

The Hungarian Delegation unanimously elected Count Aladar Andrassy president, and Koloman Szell vice-president. At the sitting of June 3 the report of the special committee on the Foreign Office budget was submitted by Dr. Max Falk, and during the discussion which followed Count Kalnoky made a statement concerning the relations of the monarchy with foreign powers. He said that the speech from the throne had made no allusion to the triple alliance, because the time had at last come when it was no longer necessary to dwell every year upon the strength and durability of that alliance. He was able to positively assure the Delegations that the relations between Austria-Hungary and Italy had undergone no modifications; that they were, and would remain, as intimate and sound as they ever had been. He declared that the relations of the monarchy with all the powers were of the most friendly nature; that the feeling of security and confidence in the maintenance of peace had been gradually and surely growing stronger. His Majesty had said that nothing had occurred to render indispensable the development of Austria's military organization and readiness for action. There was a certain danger, not in the political disposition of any particular power, but in the whole military situation; but that danger was diminished by the cultivation of friendly relations between monarchs and governments, and would eventually altogether disappear. Of Serbia and the recent revolution there, he said that Austria had no active policy in Serbia, but simply desired that intercourse between the populations of the two countries might be mutually satisfactory, and that the best assurances of this had been received from the new régime. Regarding Russia, he said that the Emperor Alexander III and his Government were favorably disposed toward the monarchy. Austria's relations with Russia, previously good, had now improved, and the improvement would in time have great influence in putting an end to the existing military tension in Europe. Meantime it would be the duty of the Government to provide for the military efficiency of the monarchy, with due regard to its financial resources, and the War Department would endeavor to meet all requirements out of the sums already granted for that purpose. At the conclusion of this statement a resolution, proposed by Dr. Falk, expressing full confidence in Count Kalnoky's policy, was unanimously adopted.

In the Austrian Delegation, June 5, Count Kalnoky made a further statement concerning foreign affairs. Reiterating in substance what had been spoken by him in the Hungarian Delegation, he said it would be an illusion to suppose that general disarmament was at hand, or that it would be possible under existing circumstances; and that he would consider it a material gain if a truce to the increase of the armaments could be brought about. So long as other powers continued their military preparations, Austria-Hungary and her allies must reckon with a similar necessity.

In the same place, June 9, Count Kalnoky said that attacks based upon a false interpretation of his language had been made upon him by certain German papers, who charged him with lack of fidelity to the triple alliance. Germany, he said, proposed to increase her military strength in order to increase her own feeling of security. Austria had no need to follow her example, as she was fully conscious of her strength. The allied powers had always held that the triple alliance did not exclude any member from sustaining friendly relations with other powers. The relations of Austria-Hungary with Russia were amicable, and he desired that they should remain so. In conclusion, he said that Austria-Hungary continued to adhere to her treaty obligations with the same steadfastness and loyalty as hitherto; that she had made no political evolutions, and would make none.

**Commercial Treaties.**—Early in the year negotiations were opened for commercial treaties with Roumania and with Russia. The negotiations with Roumania did not contemplate any fixed duties, but simply a provision for the mutual application of the most-favored-nation clause for an indefinite period, both parties being at liberty to terminate the agreement upon one year's notice. Negotiations with Russia were also based upon the reciprocal application of the most-favored-nation clause. Pending the negotiations it was agreed that the Russian maximum tariff should not be imposed on imports from Austria-Hungary until further notice, and that the negotiations should be with a view of giving to Austria-Hungary the same commercial advantages as those enjoyed by France under the Franco-Russian treaty.

**Austria.**—The different provinces composing the Empire of Austria, the Cisleithan monarchy, are represented in a central parliament called the Reichsrath, which is convened annually. This body comprises an upper and a lower house, either of which may initiate legislation. The Herrenhaus, or House of Lords, consisted in 1892 of 19 princes of the imperial family, 68 hereditary lords, 10 archbishops, 7 bishops of princely title, and 125 life members nominated by the Emperor. The Abgeordnetenhaus, or House of Deputies, has 353 elected members, of whom 85 represent the landed proprietors, 118 the towns, 21 the chambers of commerce and industry, and 129 the rural districts. The term of the House of Deputies is six years. In case of dissolution new elections must be held within six months. The number of deputies apportioned to each province is as follows: Bohemia, 92; Galicia, 63; Lower Austria, 37; Moravia, 36; Styria, 23; Tyrol, 18; Upper Austria, 17;

Coastland, 12; Carniola, 10; Silesia, 10; Carinthia, 9; Bukowina, 9; Dalmatia, 9; Salzburg, 5; Vorarlberg, 3. Each province has also its own Parliament, or Landtag, which legislates upon all matters not reserved to the Reichsrath or to the Crown.

The Austrian Ministry in 1893 was composed as follows: President of the Council and Minister of the Interior, Graf Eduard Taaffe, appointed Aug. 19, 1879; Minister of Finance, Dr. E. Steinbach; Minister of Public Instruction and Ecclesiastical Affairs, Dr. Paul Gautsch, Baron von Frankenthurn; Minister of Agriculture, Graf Julius Falkenhayn; Minister of Commerce and National Economy, Marquis von Bacquehem; Minister of National Defense, Field-Marshal Graf Zeno von Welsersheimb; Minister of Justice, Graf Friedrich von Schönborn; without portfolios, Baron von Prazak, Ritter von Zaleski, and Graf Gandolf von Khünberg.

**Finance.**—The budget for 1893 estimates the total revenue at 609,572,085 florins, of which 742,500 florins are derived from the Council of State; 1,057,518 florins from the Ministry of the Interior; 327,593 florins from the Ministry of Defense; 6,064,124 florins from the Ministry of Public Worship and Instruction; 3,306,691 florins from the Ministry of Finance; 36,110,000 florins from the land tax; 32,349,000 florins from the house tax; 27,737,000 florins from the income tax; 11,508,000 florins from the industry tax; 39,584,000 florins from customs; 104,227,080 florins from excise; 85,227,450 florins from the tobacco tax; 36,067,000 florins from judicial fees; 20,000,000 florins from stamps; 21,395,581 florins from the salt tax; 16,771,000 florins from the state lottery; 2,653,100 florins from various indirect taxes; 4,833,189 florins represent the receipts from the state property; 79,837,600 florins the income from the railroads; 34,701,000 florins that from the post-office and telegraphs; 3,119,920 florins that from various enterprises; 5,025,580 florins are the yield of the forests and domains; 8,236,657 florins that of the mines; and 640,166 florins that of other real property; 1,010,000 florins are the receipts of the Ministry of Justice; and 584,297 florins are derived from various sources. These receipts, making a total of 583,113,246 florins, form the ordinary revenue, to which must be added the extraordinary revenue, amounting to 26,458,839 florins. The total expenditure is estimated at 608,684,794 florins, including 48,500,528 florins of extraordinary expenditure. Of the ordinary expenditure, amounting to 560,184,266 florins, 4,650,000 florins are for the imperial household, 72,723 florins for the Cabinet Chancery, 710,223 florins for the Reichsrath, 21,900 florins for the Supreme Court, 1,091,329 florins for the Council of Ministers, 17,829,936 florins for the Ministry of the Interior, 16,576,488 florins for the Ministry of Defense, 1,694,235 florins for the support of the Ministry of Instruction, 7,064,970 florins for Public Worship, 13,722,159 florins for Education, 14,020,816 florins for the Ministry of Agriculture, 83,904,512 florins for the Ministry of Finance, 20,812,100 florins for the Ministry of Justice, 99,520,293 florins for the Ministry of Commerce, 173,300 florins for the Board of Control, 147,167,093 florins for interest and the sinking fund of the public debt, 887,097 florins



for the administration of the public debt, 18,434,750 florins for pensions and grants, 6,911,400 florins for subventions, and 104,918,942 florins for the common expenditure of the whole monarchy, being the Cisleithan quota.

**Disorder in Bohemia.**—The political situation in Bohemia has been throughout the year unsettled and at times critical. The feeling between the Czechs and the Germans continues very bitter. The Germans inhabit chiefly the northwestern part of the country, where the famous health resorts, such as Carlsbad, Marienbad, and Franzenbad are situated, and the language spoken in this section is chiefly German. The enmity of the Czechs is based largely upon the belief that the Germans have been unduly favored by the Austrian ministry. For a time the feudal party, or party of the nobility, and the Czech party worked together upon a programme which included the maintenance of both German and Bohemian as official languages. But when by the compromise of 1890 the nobles and the Old Czechs surrendered their ideal of a dual official language in favor of the German demand for an administrative recognition of each language adjusted to local requirements, the Young Czechs seized the opportunity to take their stand as the sole national party of Bohemia. They declared for absolute Bohemian autonomy and for emancipation from Germanization within and the triple alliance without. Under their programme, Moravia and Silesia are to be absorbed, thus increasing the Czechish majority in the state. With their power thus augmented the Young Czechs believe that the German element may be completely Czechized, and its language excluded from official correspondence and reduced to a minimum in school instruction. The Young Czechs have succeeded in carrying with them the great body of the Old Czech party and the Czechish people, leaving no course open to the nobles but to fall in with them or seek an alliance with the Germans. For putting in force in detail the provisions of the compromise of 1890 the assent of the Bohemian Diet was required, and it was there that the Young Czechs made their fight. On May 17, a bill authorizing the establishment of a judicial circuit in the German district of Trautenau was being reported to the Diet by Herr Funke. The Czechs at first tried to count out the Assembly, but upon a quorum being declared they rushed into the chamber, vociferously attempting to obstruct the proceedings. Count Lobkowitz, President of the Diet, directed Herr Funke to dictate his speech to the stenographers, and upon attempting to carry out this order Funke was forcibly ejected from the tribune while the stenographers were maltreated and their notes seized and torn up. The President of the Diet, who is appointed by the Emperor, was also threatened with personal violence, and abruptly closed the sitting. The disturbance in the Diet caused great excitement in the Bohemian capital, and was followed by rioting by the university students, who demolished the windows of club houses and of the mansions of people obnoxious to them. During the night a rope was tied around the neck of the statue of the Emperor at Prague. On the following day the session of the Diet was permanently closed by

order of the Emperor. The Young Czechs were much disturbed by this order, and meetings were held at which it was resolved to send a large deputation to the Emperor, requesting him to continue the Assembly. On the anniversary of the Emperor's birthday, Aug. 18, a riot occurred in Prague during which revolutionary and antidynastic handbills were distributed among the crowd, and in a number of the larger provincial towns of Bohemia placards of similar character were posted in the streets. The authorities ascertained that all this was the outcome of a preconcerted arrangement, and arrested 69 persons, all of whom were charged with high treason. On Sept. 13, the Austrian ministry issued a decree suspending the twelfth and thirteenth sections of the Constitution in the city of Prague. These sections refer to the holding of public meetings and the freedom of the press. A further decree suspended also in that city the right of political offenders to trial by jury.

**Session of the Reichsrath.**—At the sitting of the Reichsrath, Dec. 2, 1892, the vote on the secret-service fund resulted in a defeat of the Government by a majority of 21 in a total of 313 votes, the Czechs and Germans of Bohemia having for the first time in many years voted together. The Prime Minister had previously announced that he did not consider the question of confidence involved in the vote, and the Cabinet did not resign. During the Christmas holidays Graf Taafe took the opportunity to negotiate with the three principal parties in the House to secure a Government majority. The three groups thus approached were the German Liberals, under the leadership of Dr. von Plener, the Poles, of whom Jaworsky is chief, and the German Conservatives and Clericals, led by Graf Hohenwart. The programme upon which these elements were invited to unite was in the main that indicated in the last speech from the throne. The material interests of the country were to receive the first attention, and all irritating questions specially concerning either of the three groups were to be for the time being completely set aside; the Austro-Hungarian dual system was to be maintained against all attacks, and the fundamental laws of the Constitution to be guaranteed. The Poles found no difficulty in accepting this programme, but the German Liberals hesitated through fear that the education laws might be disturbed, while the Conservatives objected that the programme was too liberal. The programme was drawn up by Baron Gautsch and Dr. Steinbach, both of whom took part in the negotiations. At the sitting of Feb. 25, Dr. Gregr, the leader of the Young Czechs, who is recognized as one of the ablest and most eloquent parliamentarians in Austria, made a vehement appeal in favor of Bohemian home rule. On March 20 Herr von Chlumetzky, who had hitherto acted as vice-president, was elected president, and Dr. Kathrein and Herr Medevsky were elected vice-presidents. The Czechs had a bill introduced fixing the number of Deputies at 400, of whom 145 should be Germans and 255 should belong to the other nationalities, every male citizen twenty-four years of age to have the right to vote. Beyond merely routine work but little was accomplished in the Reichsrath during the session of 1892-'93.

At the opening sitting of the Reichsrath, Oct. 10, the Prime Minister, Graf Taaffe, introduced an electoral reform bill practically granting universal manhood suffrage. The measure provides that all who now have the franchise shall continue to possess it, and the right is to be extended to all men of legal age who have gone through the elementary schools or passed an equivalent examination; to all time-expired noncommissioned officers and all those who have served in the ranks in time of war and have the war medal; to all those who can read and write and have done their duty as citizens in accordance with the law; and to all those having a sufficient knowledge of one of the national languages, and who can prove a residence of six months in the place in which they are employed. The bill was a complete surprise to all parties, and created a sensation in Vienna. The German Liberals, the Poles, and the Conservatives announced their opposition to the bill. At the first reading of the bill, on Oct. 23, Graf Taaffe declared the measure a necessity for the state, inasmuch as it was only by a timely and far-reaching extension of the suffrage that it would be possible to avert those grave perils with which society and the whole order of the state were threatened by the popular elements which had hitherto been deprived of political rights. The opposition to the measure among the Deputies was so determined that its success seemed impossible, and a dissolution of the Reichsrath was quite generally expected, but on Oct. 29 Graf Taaffe tendered his resignation to the Emperor as the best means of ending the deadlock. Prince Alfred Windischgrätz, President of the Upper House, was sent for by the Emperor on the following day and intrusted with the formation of a coalition Cabinet.

**The New Ministry.**—The prince met with much difficulty in the execution of his trust, but after many conferences, in which Graf Taaffe was freely consulted, the new Cabinet was announced, Nov. 5, as follows: President of the Council, Prince Alfred Windischgrätz; Minister of the Interior, Baron Bohuslaw von Widmann; Minister of Public Instruction and Ecclesiastical Affairs, Stanislaus von Madeyski; Minister of Finance, Dr. Ernst von Plener; Minister of Agriculture, Graf Julius Falkenhayn; Minister of Commerce and National Economy, Graf Franz Cronini; Minister of Justice, Graf Karl Chorinski; minister without portfolio, Apollinar von Jaworski.

**Universal Suffrage.**—The movement in behalf of universal suffrage made considerable progress in the monarchy during the year. The Social Democracy agitated for it with great vigor and persistency and carried with them the great body of the working people, while many Liberals have given in their adherence to the cause. In Bohemia the demand for the franchise has been quite aggressive, though accompanied to some extent with a demand for Bohemian state rights.

At the general meeting of the Central Democratic Society of Vienna, the advanced wing of the Liberal party, on June 30, a resolution was unanimously adopted declaring it to be the duty of all Liberal citizens to support the workers in their effort to obtain the suffrage. At an open-air meeting near Reichenberg, June

12, at which about 15,000 German and Bohemian workmen were present, a resolution was adopted in favor of universal suffrage for every citizen, male and female, who has attained the age of twenty years. On July 9 a great gathering of the working classes of Vienna took place at the town hall. The various divisions, numbering in the aggregate 30,000, displaying mottoes in favor of universal suffrage, marched in an orderly manner to the hall, where speeches were made and resolutions demanding universal suffrage adopted. This was the first demonstration of the kind in Vienna that has taken place with the permission of the authorities. The agitation has not been confined to the cities and large towns, but has been carried with considerable apparent success into the rural districts, among the peasants and small farmers.

**Labor Difficulties.**—A large meeting of the unemployed was held in Vienna on the night of Dec. 1, 1892. The language used by the speakers was of such a threatening character that the police put an abrupt end to the proceedings. On Dec. 4, labor demonstrations were held at Neu Larchenfeld and Währing, at both of which work was vehemently demanded. A strike occurred among the Vienna joiners in the latter part of April, and several strikes among the Bohemian coal miners. These last led to a collision with the police, in the course of which several miners were shot down and a large number of arrests made. In August a strike occurred among the workmen, some 1,500 in number, employed in a soap and candle factory in a suburb of Vienna. This strike called together a large mob from the rabble of the city and resulted in a series of riots lasting for three days. The police were attacked with stones and repeatedly dispersed the mob. The police used their swords, and many on both sides were seriously injured. An announcement was made early in July that the Austrian Government proposed to introduce a bill for the establishment of labor chambers, by means of which the working classes would be accorded a certain measure of representation in Parliament. The present Chamber of Deputies is composed of four groups representing respectively the great landed proprietors, the towns, the rural districts, and the chambers of commerce and industry. To these four classes the proposed bill would add a fifth, composed of representatives of the labor chambers. Such a measure has been advocated by the Liberal party in Austria for the past seven years. While it is a fact that the measure would give to the millions of Austrian working people only about as many deputies as now represent 139 landowners of Moravia, the workers seem inclined to accept the new chambers as a central controlling body, at the same time adhering to their demand for suffrage.

**Hungary.**—The Kingdom of Hungary, the Transleithan monarchy, includes Hungary proper, Croatia-Slavonia, and Transylvania. The Hungarian Parliament, or Országgyűlés, has legislative authority for Hungary and Transylvania, and also for Croatia and Slavonia in matters of common concern. The Parliament consists of the Magnatentafel, or House of Magnates, and the Representantentafel, or House of Representatives, having equal and concurrent powers. The Upper House is composed of the hereditary



peers, who pay an annual land tax of 3,000 florins, life peers, 40 dignitaries of the Roman and Greek Churches, 11 representatives of Protestant confessions, such archdukes as have attained their majority, 3 delegates of Croatia-Slavonia, and 17 judges and state officials, who are members *ex officio*. The Lower House has 453 members, of whom 413 are Deputies elected by the vote of male citizens of the age of twenty years who pay a small direct tax and others who are entitled to vote without the property qualification, and 40 are delegates of Croatia-Slavonia. Members are elected for five years. The Parliament is summoned annually by the King at Buda-Pesth. The language of the Országgyűlés is Hungarian, but the representatives of Croatia and Slavonia may speak their own language. Croatia and Slavonia possess autonomy concerning religion, instruction, justice, and police, and their provincial Diet meets annually at Agram. The Hungarian ministry in the beginning of 1893 was composed of the following members: President of the Council and Minister of Finance, Dr. Alexander Wekerle; Minister of the Honved or National Defense, Baron Géza Fejervary; Minister *ad latus* or at the King's side, Graf Louis Tisza; Minister of the Interior, C. de Hieronymi; Minister of Education and Public Worship, Graf Albin Czaký; Minister of Justice, Desiderius de Szilagyí; Minister of Industry and Commerce, Béla de Lukacs; Minister of Agriculture, Graf Andreas Bethlen; Minister for Croatia and Slavonia, Emerich de Josipovitch.

**Finance.**—The budget for 1893 estimates the ordinary revenue at 402,278,985 florins, and the transitory revenue at 83,000,658 florins, making a total revenue of 485,279,643 florins. Of the ordinary revenue, 3,690,282 florins are derived from state debts, 1,900 florins from the Accountant-General's office, 800 florins from the Ministry *ad latus*, 1,189,329 florins from the Ministry of the Interior, 282,921,258 florins from the Ministry of Finance, 97,878,292 florins from the Ministry of Commerce, 14,240,913 florins from the Ministry of Agriculture, 1,264,461 florins from the Ministry of Public Worship and Instruction, 729,761 florins from the Ministry of Justice, and 358,983 florins from the Ministry of National Defense. The total expenditure was estimated at 485,265,596 florins, of which 378,005,231 florins represents the ordinary expenditure, 85,083,384 florins the transitory expenditure, 15,248,994 florins the investments, and 6,928,023 florins the extraordinary common expenditures of the whole monarchy, being the Transleithan quota. Of the ordinary expenditures, 4,650,000 florins are for the civil list, 72,723 florins for the Cabinet Chancery, 1,299,600 florins for the Diet, 25,247,160 florins for the common expenses of the whole monarchy, 41,985 florins for the common pension list, 7,440,461 florins for the Hungarian pensions, 118,770,507 florins for the national debt, 21,319,298 florins for debts of guaranteed railroads acquired by the Government, 753,408 florins for other guaranteed railroad debts, 7,106,947 florins for the administration of Croatia, 110,900 florins for the Accountant-General's office, 337,580 florins for the President of the Council, 58,540 florins for the Ministry *ad latus*, 36,080 florins for the Ministry of Croatia, 12,283,460 florins for

the Ministry of the Interior, 64,785,248 florins for the Ministry of Finance, 65,526,635 florins for the Ministry of Commerce, 14,470,165 florins for the Ministry of Agriculture, 7,888,381 florins for the Ministry of Public Worship and Instruction, 13,585,907 florins for the Ministry of Justice, and 12,220,246 florins for the Ministry of National Defense.

**The Hungarian Culturkampf.**—The conflict between the state and the Church, which originated with the decree of the Minister of Public Worship of Feb. 26, 1890, regarding the Weglaufungen, has led the country into a religious struggle, in dealing with which the Government found the greatest difficulty. The Liberal party, having obtained the majority in the last elections, demanded a settlement of the politico-religious questions. The Szapary ministry attempted to arrange a programme which should receive the support of the Liberals as well as the approval of the Crown. There were three points on which the ministry agreed. The first was the registration by the state of the births of the children of mixed marriages. The Hungarian law prescribes that male children be baptized in the faith of the father and female children in that of the mother. If a child born of a mixed marriage be baptized by a Catholic priest, its birth must be registered in the Catholic Church register; if baptized by a Protestant pastor, the birth must be inscribed in the register of the church in which the child is baptized. Each case of baptism is to be communicated to the minister of the other faith. This law the Catholic Church refused to comply with; and, as no compromise could be made, registration by the state seemed to be the only available solution of the problem. The second question regarded the free practice of all religions, which the ministry favored unanimously. The third question was that of the recognition of the Jewish confession, which has heretofore been counted among the tolerated religions, but which the ministry proposed to put on a par with the recognized religions. Regarding the fourth question, that of civil marriage, the ministry could not agree.

At present the legislation affecting marriage does not rest with the state, but with the different confessions officially recognized in Hungary, each of which has its own special ordinances. In the matter of civil marriage the Catholic Church would make no concession, but opposed the contemplated reform with all the force that it could bring to bear. It had taken an active part in the elections the year before, and had supported members of any party who pledged themselves to forward its cause, the Hungarian bishops declaring that, as marriage is one of the sacraments of the Church, they could not regard civil marriage in any form as anything more than mere civil registration. The Liberal party, under the leadership of Tisza, the former Premier, insisted on obligatory civil marriage, pure and simple, and refused to entertain any compromise proposed by Count Szapary.

**The Cabinet Crisis.**—On Nov. 5, 1892, Count Szapary went to Vienna to submit his plans to the Emperor, and on Nov. 9 he announced at a sitting of the Hungarian Chamber of Deputies that the Cabinet had tendered its resignation

because it had not been able to come to any agreement regarding obligatory civil marriage, and that the resignation had been accepted by the King. Count Szapary, Baron Fejervary, Dr. Wekerle, M. Tisza, and M. Szell were summoned to Vienna to confer with the Emperor, and as a result of the conference, Dr. Wekerle, the Minister of Finance of the outgoing Cabinet, was called upon to form a new ministry.

**The New Cabinet.**—On Nov. 16 the new Cabinet was complete and received the sanction of the Emperor. It was composed of the following members: President of the Council and Minister of Finance, Dr. Wekerle; Minister of Justice, M. Szilagyi; Minister of Public Worship and Instruction, Count Czaky; Minister of the Interior, M. de Hieronymi; Minister of Commerce, M. de Lukacs; Minister *ad latum*, Count Louis Tisza; Minister of National Defense, Baron Fejervary; Minister of Agriculture, Count Bethlen. Alexander Wekerle, born in 1850, is the son of a German, who emigrated from Würtemberg to Hungary and became the steward of a large estate. He entered the Department of Finance when only twenty-five years old, and his abilities in financial matters soon brought him promotion, his services being recognized by each successive ministry. In 1887 he was appointed Under Secretary of State in the Cabinet of Koloman Tisza, and in 1889, when the latter resigned his office as Minister of Finance, Dr. Wekerle was appointed to fill his place. His ability was demonstrated by the currency reform, passed in 1892. His appointment to the premiership met with general approval. His tendencies are strictly liberal, and, being a *bourgeois*, the first Premier not connected with the aristocracy Hungary ever had, his choice was hailed with delight by the masses.

On Nov. 21 Dr. Wekerle submitted the programme of the new Government to the Parliament. He declared that the new Cabinet approved of the line of foreign policy sanctioned at the last session of the Delegations, which had in view the safeguarding of the interests and power of the monarchy on the basis of existing treaties. Regarding the politico-religious questions, he remarked that the Government, while desiring to maintain the interests of the state, were at the same time anxious not to disturb the peace with the Church, and wished that all public institutions should be so organized as to offer a lasting guarantee for the continuance of that peace; that an arrangement in principle had been made, with the approval of the Crown, for the introduction of the state registration of births, the recognition of the Jewish faith, and the free exercise of all religions, and that the bills dealing with these questions would be put before the house in the course of the winter. Touching marriage legislation, he said that the Government had been able to arrive at an agreement concerning the fundamental principle of the marriage law and obligatory civil marriage, a bill in connection with which was being prepared. This bill would provide for general marriage legislation binding on all faiths.

**Session of the Parliament.**—The new ministry had by no means an easy task before them. Although the Liberals formed the majority in the Representantentafel, yet even in their own

ranks there were differences of opinion. The great majority, under their leader, Koloman Tisza, approved of the programme of the Government, while the minority believed in the ex-Premier's temporizing course. But as an offset the Government gained the support of the Nationalists under Count Apponyi, who declared that his party was in favor of obligatory civil marriage. On April 26 two of the politico-religious bills were introduced in the Lower House. The civil registration bill brought in by the Minister of the Interior divides the country into about 4,500 districts. The clergy are not competent to act as registrars. These officials, who are to be appointed and paid by the state, must be Hungarian citizens who have passed the sixth grade at school. Birth, marriage, and death registers are to be kept separate. Regarding the children of mixed marriages, the sons are to be brought up in the religion of their fathers and the daughters in that of their mothers, as provided by the law of 1868. The duty of reporting a birth devolves upon, first the father, second the midwife, third the medical attendant, fourth other witnesses, and fifth the mother. Until the enactment of an obligatory civil marriage law, registration of marriages is to be made upon evidence of the certificate of the clergyman performing the religious ceremony, which certificate he is required to furnish. The special bill for the reception of the Jewish faith, which was introduced by Count Czaky, contains three paragraphs. By the first the Jewish faith is officially recognized; by the second, conversions from the Jewish to the Christian faith, and from the Christian to the Jewish faith, are made lawful; the third gives the Jews, as a religious body, civil rights equal with those of any other religious body. On May 16 a bill was introduced providing that all persons shall be at liberty to choose their faith or religion, and to practice the same within the limits fixed by the law and public morality. Any confession desiring to be legally recognized by the state must submit to the Government a statement of its dogmatic and moral doctrines. Should these be contrary to the laws of the country or contain anything calculated to prevent members from fulfilling their duties toward the state, the Government is empowered to refuse its recognition. The authorities may also demand the removal of a clergyman guilty of any action prejudicial to the state, and failing such removal dissolve the religious body over which he presides. The position of head or patron of a religious community must not be held by a foreigner or under foreign authority. Any religious body may hold property for church and school purposes only. The exercise of political and municipal rights is made independent of religion. If an individual desires to sever his affiliation with any religious society he must first cancel all his indebtedness to such society. All persons have the right to meet for religious services. The bill does not apply to the Jewish faith or any religion already recognized.

The bill proposed by the Government for the regulation of marriage has three principal clauses, as follow: There shall be only one marriage law, which shall be applicable to all religious denominations; civil marriage shall be obligatory; marriage may be dissolved by the



civil authorities. During the discussion of the budget, which occupied the greater part of the session, the religious questions were frequently brought up and discussed, particularly when the items for the Ministry of Public Worship were before the House. Count Czaky took the earliest opportunity to defend the Government programme, and made it clear that the ministry would stand or fall with the obligatory civil marriage bill. As far as the Representantentafel was concerned, no doubt was felt as to the passage of such a bill, but the difficulty was with the Magnatentafel. That body consists mostly

of the Hungarian nobility, who adhere firmly to the Catholic faith, and who for that reason refused to make any concessions whatever. It even went so far as to pass a vote of want of confidence in the ministry on the Church question, May 10, 1893. The clergy held a meeting at which resolutions were presented and adopted strongly protesting against what they considered the Government's politico-religious programme, and especially against obligatory civil marriage; and in the early autumn the Pope addressed an encyclical on the subject to the Hungarian bishops and clergy.

## B

**BAPTISTS.** The summaries of the statistics of the regular Baptist churches in the United States, as given in the "American Baptist Year-book" for 1893, are as follow: Number of associations, 1,458; of ordained ministers, 24,798; of churches, 36,793; of members, 3,383,160; of Sunday schools, 19,930, with 143,607 officers and teachers and 1,390,601 pupils; of additions during the year by baptism, 166,322. Amount of contributions: For missions, \$1,207,244; for education, \$236,776; for salaries and expenses, \$9,999,860; miscellaneous, \$2,463,538. Value of church property, \$71,080,945.

In British America are returned 810 churches, 585 ministers, 80,768 members, and 4,464 baptisms during the year; in Mexico, 49 churches, 25 ministers, 1,672 members, and 182 baptisms; in the West Indies and Central America, 201 churches, 76 ministers, 44,200 members, and 3,135 baptisms; total for North America, 37,853 churches, 25,504 ministers, 3,509,800 members, and 174,103 baptisms; in South America (Brazil), 10 churches, 10 ministers, 419 members, and 90 baptisms; in Europe (including the United Kingdom, Austria-Hungary, Denmark, Finland, France, Germany, Holland, Italy, Norway, Roumania and Bulgaria, Russia and Poland, Spain, Sweden, and Switzerland), 3,704 churches, 2,584 ministers, 422,066 members, and 23,254 baptisms; in Asia (Assam, Burmah, Ceylon, China, India, Japan, Orissa, and Palestine), 801 churches, 504 ministers, 97,672 members, and 11,999 baptisms; in Africa, 50 churches, 89 ministers, 3,357 members, and 570 baptisms; in Australasia, 199 churches, 129 ministers, 16,670 members, and 1,330 baptisms; total for all countries, 42,617 churches, 28,820 ministers, 4,049,984 members, and 211,346 baptisms.

Of the baptisms in the United States during 1892, Georgia reports the largest number, 20,176. After it follow Texas, 17,226; Alabama, 13,001; Virginia, 2,210; South Carolina, North Carolina, Tennessee, New York, etc., the baptisms in the South considerably outnumbering those in the North. In the amount of money contributed by the denomination—the total, excluding the gifts of Messrs. Rockefeller and Colgate to Chicago and Colgate Universities, amounting to \$13,907,418—New York leads with \$1,713,761. Next come Massachusetts, with \$1,067,876; Pennsylvania, with \$962,125; Illinois, with \$660,117; New Jersey, with \$550,716; Missouri, with \$494,477; Ohio, Virginia, Texas, Michigan, Ken-

tucky, etc. The general average *per capita* was \$4 for the whole country.

In absolute number of members, Georgia leads with 344,158, and after it follow Virginia, Kentucky, Texas, South Carolina, Mississippi, Tennessee, Missouri, New York, etc., in order.

**Educational Institutions in the United States.**—Seven Baptist theological institutions in the United States return 58 instructors and 818 pupils preparing for the ministry; 35 universities and colleges, 602 instructors, and 8,542 pupils, 1,072 of whom were preparing for the ministry; 36 institutions for young women, 397 instructors, and 4,573 pupils; 51 institutions for young men and young women, 365 instructors, and 7,379 pupils, 314 of whom were preparing for the ministry; 24 institutions for the colored race and Indians, 235 instructors, and 5,240 pupils, of whom 247 were preparing for the ministry. Aggregate statistics of 153 Baptist educational institutions: Number of instructors, 1,657; of pupils, 26,552; preparing for the ministry, 2,451; value of grounds and buildings, \$13,493,355; amount of endowments, \$16,782,820; value of libraries and apparatus, \$1,485,047; amount of gifts made in 1892, \$4,844,053; number of volumes in libraries, 725,776; total value of property, \$31,761,222.

**Baptist Education Society.**—The fifth annual meeting of the Baptist Education Society was held, in connection with the meeting of the Southern Baptist Convention, at Nashville, Tenn., May 11. The treasurer reported that his receipts for the year had been \$75,319, all of which had been paid out to the institutions for which the different contributions were designed. The secretary's report made special mention of the gratitude and sympathy the society had received from various parts of the country. The co-operation of the pastors and people of the South had been specially remarkable, and the most fruitful results have been realized in that region. The institutions aided had been carefully selected, as likely to be most widely and permanently useful, and the funds had been used for endowment only. Of 67 Baptist schools and colleges in the South, only 11 had practically any endowment. American Baptists had now \$32,000,000 safely secured in college property. In the four years of its existence \$336,516 had been given to colleges and academies through this society, exclusive of the gifts to the University of Chicago, securing to those institutions \$1,618,816; and

since the society began active work \$12,000,000 had been added to the funds of Baptist institutions. Chicago University had now \$7,000,000, or nearly one fourth of the educational money of American Baptists. The institution had changed as it had enlarged, till college instruction had become only an appendage, and stress was laid upon graduate rather than undergraduate work.

The Southern Baptist Educational Society met in Nashville, Tenn., May 11, when papers were read on "Higher Education in Texas," by Prof. A. J. Emerson, and "Examinations and Degrees," by Dr. H. H. Harris.

**Southern Baptist Convention.**—The Southern Baptist Convention held its forty-eighth meeting in Nashville, Tenn., May 12. Judge Jonathan Haralson, of Alabama, was re-elected president. The opening of the sessions was made notable by the presence of Bishop O. P. Fitzgerald, of the Methodist Episcopal Church, South, who was invited to the platform and to address the convention—an innovation in the practices of this body, which has not been accustomed to receiving visiting delegates from other Churches. The Foreign Board (of Missions) reported that it had received \$154,686, of which \$21,346 were contributed as for "Permanent Centennial Work." A debt was reported of \$10,464. Reports were received from the missions in Italy—347 members, 75 additions by baptism during the year; Brazil, 15 missionaries and their wives, 453 members, and 96 baptisms, with a new mission begun in the capital of the State of Espirito Santo; Mexico, 1,014 members and 94 baptisms; Japan, 27 members and 26 baptisms; Africa, 144 members and 20 baptisms; and China, 938 members and 75 baptisms.

The receipts of the Home Board had been \$242,396, of which \$26,284 had been raised through the Woman's Missionary Union, and \$52,980 as centennial contributions. For the first time in several years the board was free from debt. Three hundred and sixty-eight missionaries had been employed, through whom 5,111 persons had been baptized, 9,604 members received into the churches, 155 churches constituted, and 92 houses of worship built. The Cuban mission returned 2,261 members, with 169 baptisms. Hitherto only native Cubans had been employed in this mission, but as the work had enlarged it had become necessary to appoint also a missionary from the United States. Missions were sustained among the Germans in Texas, Missouri, Kansas, and Maryland, and among the Mexicans in Texas. Labors among the colored people had been given mostly to the work of training their preachers. In the Indian Territory, in a total population of 130,000, the Southern Baptists had 15 associations, 189 ordained preachers, 267 churches, and 12,961 baptized believers.

The report of the Sunday-school Board for its second year showed its work to be prosperous in every department.

The Centennial Committee had raised \$133,000 during the year, besides which \$18,000 had been received by the Foreign Board in the previous year. As many of the collections had been taken too late to be included in the report, the time for closing the account was extended to November.

The Southern Baptist Missionary Union (Woman's) raised during the year for all purposes, including the centennial, \$62,336. Attention was directed, when the report of the society was presented in the convention, to the fact that it did not represent all that was done by the women for missions. The sisters who give money but do not raise it through a society, who contribute directly to the Church collections, it was insisted, should not be forgotten.

#### **American Baptist Publication Society.**—

The sixty-ninth annual meeting of the American Baptist Publication Society was held in Denver, Col., May 23. The society had received during the year, in its book department, \$534,530; in the Bible department, \$21,336; and in the missionary department, \$127,217; making, in all, \$683,083. The assets of the society were \$984,384, and its invested funds amounted to \$493,372. Another branch house had been opened in Dallas, Texas, making the sixth belonging to the society. Instead of waiting for voluntary offers of manuscripts for publication, the publication committee had determined to secure the preparation of such works as were decided to be most needed for the denomination. Several commissions had been allotted. Prizes of \$500 each had been offered for the best stories on certain topics of Christian character and conduct. The preparation of an inductive series of Sunday-school lessons as alternative to the International series was promised. Seventy-four new publications had been issued. Final contracts had been awarded for the completion of the unfinished revision of the Old Testament. The Bible department had distributed 33,426 copies of the Scriptures. The missionary department had employed 140 agents in all, and aided several State conventions in the support of colporteurs. Under the labors of these agents 642 persons had been baptized, 49 churches constituted, 330 Sunday schools organized, 537 institutes held and addressed, 296 Sunday schools aided by gifts of Bibles, books, periodicals, etc., and 332 pastors and ministerial students aided with grants for their libraries. The chapel car Evangel had been in constant service, and with it 88 places had been visited, at which 8 churches had been organized and provided with pastors, 4 Sunday schools formed, 25 persons baptized, and 400 converts enrolled. Another car had been built and paid for by friends of the society, and a third had been offered provided the building of a fourth could be assured. The opening of the exposition at Chicago on Sunday was condemned by resolution, and the course of the Baptists of Chicago in withdrawing the denominational acceptance of the invitation to take part in the auxiliary religious congress was approved.

#### **American Baptist Missionary Union.**—

The annual meeting of the American Baptist Missionary Union was held in Denver, Col., May 24, the Rev. A. H. Strong, D. D., presiding. The total receipts of the society for the year had been \$865,752, of which \$757,305, or \$396,915 more than in the previous year, were in the form of contributions from the churches, including those of the women's societies. In addition to this amount, \$37,950 had been received in conditional trust funds subject to annuities, and the women's societies had received \$74,139 available



for their work, making a grand total of \$977,846. The Centennial Committee reported a still further receipt of \$32,500 on a bequest to the union from an estate not yet settled, by which the amount of the centennial offering was swelled to \$1,010,341. The general statistical reports from the mission fields showed that there were in the European missions 1,099 preachers, 801 churches, 82,274 church members, and 67,059 pupils in Sunday schools; while 5,796 persons had been baptized there in 1892, and \$251,020 had been contributed by the mission stations. In the heathen fields were 971 preachers, 730 churches, with 87,455 members, 18,625 pupils in Sunday schools, and 7,060 persons had been baptized, and \$54,249 contributed. Fifty-two missionaries, including those of the women's societies, had gone to various stations in Asia and Africa; 38 new appointments had been made; 38 missionaries had returned home, 8 of them permanently, and 3 had died. Dr. Judson's Burman Bible had been issued, reduced in size by the photo-engraving process, at one fourth the cost of the regular edition, and the new Sgau-Karen Bible had been published at Rangoon. Recommendations were adopted that the anniversary meetings be made—so far as the business of the Union is concerned—strictly delegated or representative meetings; that, instead of uniformly having set reports by special committees of the work of the Union in the various foreign fields, time be given to listening to accounts by living missionaries home on furlough; and that a committee be appointed to consider the question of the relation of schools and higher education in general to the missionary operations, including the acceptance and use of Government grants-in-aid and Government inspection in the several missions where such grants obtain.

**American Baptist Home Missionary Society.**—The meeting of the American Baptist Home Missionary Society was held in Denver, Col., May 29, Mr. H. K. Porter, one of the vice-presidents, presiding. The receipts of the treasury for the year had been \$473,842, and the expenditures \$671,491. The work of the society had been conducted in 50 States and Territories, and in Manitoba, the Northwest Territory, British Columbia, Alaska, and six Mexican States. One thousand and eighty-two laborers had been employed, of whom 245 had been working among the foreign population, 236 among the colored people, 46 among Indians, 31 among Mexicans, and 524 among Americans. Seventy churches had become self-supporting, and 82 asked for reduced appropriations. One hundred and nine new mission stations had been undertaken; 2,035 stations and out stations, having 49,364 members, had been supplied; 5,743 members had been received by baptism; 136 churches had been organized; 1,177 Sunday schools, having an aggregate attendance of 73,954 members, were under the care of the missionaries; and contributions of \$13,257 to the benevolent funds were reported. The society aided in the maintenance of 34 established schools for the colored people, Indians, and Mexicans; 17 day schools for the Chinese; 4 day schools in Mexico; and 2 day schools in Utah.

**Women's Missionary Societies.**—The total receipts of the Woman's Baptist Home Mission Society (Chicago) for the year ending with April, 1893, were \$67,059, and the disbursements were \$63,335. Plans of co-operation had been effected with the American Baptist Home Mission Society and the State and Territorial conventions, under which \$7,323 were paid to the agents of the society. A missionary training school was sustained at Chicago, and a missionary training department in connection with Shaw University. Ninety-five missionaries had been under appointment during the year in Colored People's, Chinese, European Landing-Place, Frontier, Indian, Mexican, and Mormon Missions.

The Woman's Baptist Home Mission Society (Boston) received in all for the year \$38,099. For the Kadiak Orphanage, the accounts of which were kept separately, the receipts had been \$3,709, which, added to the cash in hand, made the total amount to its credit \$7,888. The society had \$10,746 of invested funds.

The total receipts of the Women's Foreign Missionary Society (Boston) for the year 1892-'93 were \$150,552, and its expenditures \$116,066. Of the balance left in the treasury, \$34,000 had been reserved to make good the special obligations of the centenary year, making the real balance \$486.

**Baptist Young People's Union of America.**—The third annual meeting of the Baptist Young People's Union of America was held in Indianapolis, Ind., beginning July 13. About 2,500 delegates attended. The board of managers reported that, as far as had been ascertained, nearly 1,000 young people's societies had been organized during the year, making the whole present number about 4,500; there were also 300 associational unions, 50 city unions, and 30 State and provincial unions. The plans for the founding fund had been enlarged, to secure, if possible, \$50,000—instead of \$25,000, the amount first named; the present amount of the fund was \$13,846. The educational plans, involving examinations on scriptural and religious topics, under the three heads of Bible Reading, Study of the Life of Christ, and Conquest Missionary Observance, had been satisfactorily carried out. These were collectively called the Christian Culture Course. A pastor's lecture course was widely adopted. It included studies on the preparation of the world for the spread of the gospel; theological education among the Jews; the influence of Judaism on Christianity; the New Testament—how it grew and when it was completed; the teachings of Paul and their effect on Christian thought in all ages; and the testimony of art and archaeology to Christianity. One or two optional courses of study were contemplated. Many junior societies had been organized. It was decided to give these societies the name, Junior Baptist Union.

**Organizations of Colored Baptists.**—The Baptist Foreign Missionary Convention of the United States is the organization for foreign mission work of colored Baptists. It sustains two missionaries in Africa. Steps have been taken for the organization of the women in the collection of missionary funds.

The Baptist African Missionary Convention of the Western States and Territories sustains, with

the aid of friends in Great Britain, four missionaries in Africa.

The American National Baptist Convention labors to secure the general and educational development of the colored race, and has no special missionary work laid before it. The question of organizing a publishing house was discussed at the annual meeting in September, 1892. The year's receipts of the body were returned as having been \$275, and the expenditures \$238. During the same meeting another organization was formed, under the name of the National Baptist Educational Convention.

The New England Baptist Missionary Convention does a home mission and Church extension work. Reports were made at the annual meeting in June, 1892, of the work of 5 missionaries, of missions at 6 places in New Jersey, and of aid given to churches in New Jersey, Massachusetts, and New York. The society has a widow's fund, the receipts of which for 1891-'92 were \$391. Steps were taken at the annual meeting for the organization of a foreign mission board, for which an attempt was to be made to raise \$1,000.

**"Antimission" Baptists.**—At a general meeting of the Regular Baptists of America—commonly called Antimission Baptists—held with Lick Creek Church, near Connorsville, Ind., Nov. 22, 23, and 24, 1892, a resolution was adopted

That the churches be recommended, at their stated meetings, to make as the subject of special prayer the outpouring of the Spirit of God upon our ministry and membership, for our general prosperity, and for the sending forth of laborers into the Lord's harvest at home and abroad, as he in his wisdom may direct.

The education of ministers, missions, and Sunday schools were commended in an "Address to all True Regular Baptist Churches of America." The report of the Committee on Evangelistic work, which was adopted, recited that it could not be doubted that in no part of the service which the people of the churches owed to the Lord had they been so deficient as in the missionary spirit. "And in due proportion to this neglect," the report continues,

has been the spiritual dearth which has fallen upon them and well-nigh taken away their existence. If they would return to the favor of their Lord, it must be in the way of that commandment which has enjoined upon the ministry the preaching of the gospel to every creature in all the world, until the consummation of the age of grace. . . . As yet we have no missionary in a foreign field. Why should not our hearts long for the honor of seeing sent forth, in answer to our prayers, chosen men of God? And why should not the honor be ours of aiding them in their self-denying labors in behalf of fellow-mortals burdened with superstition and darkness? The way of God has been to cause the work of his servants at home and abroad to act and react upon each other. In return for the interest shown to the poor and benighted of other lands, God has abundantly revived the waning energies of his people at home. Others are already in the field: why stand we idle and indifferent to the misery of men and the glory of our precious Redeemer?

Mission boards, however, were not favored, but rather "messengers" appointed by the churches to manage missionary work. Another report recommended

The establishment of Sunday schools in all the churches for the benefit of the membership of both sexes and every age. This will not supersede the necessity of home instruction in the Bible, but rather stimulate and encourage it, besides providing for some who have not the blessing of home instruction.

**Baptists in Great Britain and Ireland.**—The following are the statistics of the British Baptist Churches:

	Churches.	Ministers.	Reported baptisms.	Members.
England.....	1,592	1,181	8,665	204,603
Ireland.....	25	22	199	1,946
Scotland.....	99	83	813	12,721
Wales and Monmouth-shire .....	742	468	5,503	94,895
Channel Islands.....	5	4	4	244
Nonreporting churches.	340	100	....	22,000
Total.....	2,808	1,858	15,184	156,409

**Baptist Union of Great Britain and Ireland.**—The Baptist Union of Great Britain and Ireland met in London, April 24. The Rev. T. M. Morris presided. The report of the council showed that the number of members had increased from 334,763 to 337,409; that 15,187 members had been baptized during the year; that £58,070 had been expended on new chapels; £36,457 on improvements, new schoolrooms, etc.; and £64,302 toward the removal of debt. The triennial report of the statistics of the world showed, since 1889, an increase of 1,908 churches and 227,086 members. A special report, which grew out of a discussion of the subject at the autumnal assembly of 1892, was adopted on the subject of village churches. It alleged that the difficulties under which these churches were laboring arose from two sources: the depletion of rural populations, and the latent and active opposition of the state church organization, now specially manifest in a sectarian policy with regard to elementary education. It suggested as the necessary remedies for them: provision of trained local preachers able to supplement and support the work of the village pastors; fraternal oversight of the smaller churches by stronger churches in the adjacent larger centers of population; and for churches not in charge of pastors, the appointment as lay pastors, from among the staff of local preachers or otherwise, of men with weight of Christian experience.

The year's receipts of the Baptist Missionary Society had been £60,879, and the expenditure £74,958, while the indebtedness had risen to £30,514. The committee proposed to pay off the whole of the debt out of the Centenary fund. An increase of £15,000 in the annual receipts was needed to secure an equilibrium between present income and outgoings, and an effort was recommended by the treasurer to secure a permanent annual income of £100,000. The contributions to the Centenary fund up to March 31, with accrued interest on the sums that had been paid in, amounted to £113,500; of this sum £103,280 had actually been paid in cash. The missionary staff had been increased by 10 laborers, commissioned to the Congo, India, China, and Ceylon. Reports of steady progress were received from the foreign fields, India, China, Ceylon, Palestine, the Congo, and the European missions. The Congo Mission now



included 3 principal stations on the lower Congo and 6 on the upper Congo, with 30 missionaries. By virtue of their larger experience, the missionaries understood far better than they had ever done before how to guard themselves from the trying effects of the climate. A marked advance was reported in the independence of the native churches. There were now 10 self-supporting churches in India, and some even on the Congo.

The expenditures of the Zenana Missionary Society had been £8,700, while the income had been £8,400. The society was at work in 22 centers, with 58 zenana visitors, 176 Bible women and native teachers, and 72 schools; and Bible reading was conducted in 1,600 houses. Three new workers were to go out to India.

After sixty years of working on separate lines, an agreement had been reached between the Bible Translation Society and the Bible Society for the publication of the Congo version of the Bible, under which the Bible Society agreed to print the version with Congo equivalents for the words *immerse* and *immersion* in the text, on condition that the Greek term *baptize* or its cognates should follow them in brackets. A similar agreement was anticipated respecting the Oriya version. The Congo version, it was explained, would be of service in a territory covering some 58,000 or 60,000 square miles, or an area about as large as that of England and Wales.

The capital of the Baptist Building fund amounted to £51,368. During the past year loans free of interest and repayable by installments had been granted in the amount of £11,000 to 46 churches. Since the institution of the fund more than a thousand cases had been helped by grants amounting in the aggregate to £217,456.

The autumnal sessions of the Union were held at Reading, beginning with the missionary meetings, Oct. 2 and 3. The addresses at the latter meetings related to the necessity of missions, the claims of rural churches, mission work in London, the problem of Christian work in the cities, and the privilege of the young in relation to foreign missions. At the meeting of the Union proper, the president, Rev. T. M. Morris, spoke on the duty of Baptists to act as Christ's representatives, agents, and witnesses; and addresses were made on the equipment of Sunday-school teachers, socialism—which, it was maintained, should be a handmaid to Christianity, not a substitute for it—theosophy, and “the falsehoods of secularism.” Resolutions were adopted sympathizing with the Stundists, or Russian Baptists, in their trials (from persecution); and demanding, in view of recent proposals to introduce denominational teaching into board schools, and to secure rate aid for schools under denominational management, that, in accordance with the provisions of the Education act, “no religious catechism or religious formulary which is distinctive of a particular denomination” shall be taught in board schools; that no rate aid shall be given to a school in which such catechism or formulary is taught, or to any school which is not under the control of a school board; expressing the opinion that in the event of the proposals referred to being pressed, “the time has come for the exclusion of denominational teaching from every

public elementary school which receives a grant from Government or from the local authorities; and for the placing of all such elementary schools under the management of boards elected by householders who pay rates and taxes.” The Church extension scheme was commended, and the holding of meetings in behalf of it in the large towns was advised. A conference was held in the interest of “village churches.”

**German Baptist Union.**—The German Baptist Union includes the Baptist churches in Germany and other countries of Europe. It returns, for 1892, 112 churches in Germany and 31 outside of Germany, with 302 pastors, 84 ministers and colporteurs, and 460 helpers; and these churches are owners of 158 chapels or places of worship. The whole number of members at the end of 1892 was 28,254, of whom 22,958 were in Germany; number of Sunday schools, 122, with 1,760 teachers and 20,732 pupils; of members of young men's societies, 2,040; of members of young women's societies, 2,425. Amount of contributions, 358,939 marks for the German churches, and 70,589 marks for the others.

**BELGIUM**, a constitutional monarchy in western Europe. The reigning sovereign is King Leopold II, born April 9, 1835, son of Leopold I, who, as Prince of Saxe-Coburg and Gotha, was elected the first King of the Belgians by the National Belgian Congress on June 4, 1831. His mother was Louise, daughter of Louis Philippe, King of the French. He ascended the throne on the death of his father, Dec. 10, 1835. The heir presumptive is Prince Albert, born April 8, 1875, only surviving son of Philippe, Count of Flanders, the King's brother. The succession is restricted to male descendants of the royal line in the order of primogeniture.

The ministry, constituted on Oct. 26, 1884, is composed of the following members: President of the Council and Minister of Finance, A. Beernaert; Minister of Justice, J. Lejeune; Minister of the Interior and of Instruction, J. de Burlet, who succeeded J. Devolder in 1892; Minister of Agriculture and Public Works, L. Debruyne; Minister of Railways, Posts, and Telegraphs, J. H. P. van den Peereboom; Minister of War, Lieut.-Gen. C. Pontus; Minister of Foreign Affairs, Count de Mérode, who succeeded Prince de Chimay in 1892.

**Area and Population.**—The area in square kilometres, and the population of the various provinces and of the total kingdom on Dec. 31, 1891, were as follow:

PROVINCES.	Area.	Males.	Females.	Total.
Antwerp .....	2,832	358,237	355,503	713,740
Brabant.....	3,283	545,729	575,247	1,120,976
East Flanders...	3,000	476,822	478,698	955,520
West Flanders...	3,235	370,239	373,949	744,188
Hainault .....	3,722	535,763	522,974	1,058,737
Liège .....	2,895	114,148	109,388	223,531
Luxembourg ....	4,418	107,306	104,235	212,041
Namur.....	3,660	167,810	163,733	336,543
Total.....	29,457	3,060,876	3,075,568	6,136,444

The population of the principal cities were as follows: Antwerp, 232,723; Brussels, 180,147; Liège, 153,324; Ghent, 150,223; Schaerbeek, 53,127; Malines, 51,558.

**Commerce.**—The general commerce for 1891 amounted to 3,119,623,667 francs of imports,

and 2,847,005,898 francs of exports. The special imports for 1891 were valued at 1,799,800,000 francs, and the special exports at 1,519,000,000 francs. The values of the chief classes of special imports were as follow: Cereals, 450,960,000 francs; textile materials, 188,467,000 francs; vegetable substances, 121,277,000 francs; chemical products, 87,753,000 francs; minerals, 73,373,000 francs; timber, 67,961,000 francs; resinous substances, 66,057,000 francs; hides and skins, 64,862,000 francs; cloths, 55,703,000 francs; coffee, 54,995,000 francs; live animals, 51,207,000 francs; metals, 47,298,000 francs; animal substances, 38,084,000 francs; meat, 32,015,000 francs; yarns, 28,581,000 francs; wine, 28,327,000 francs; coal, 28,120,000 francs; fertilizing material, 24,165,000 francs; machinery, 18,800,000 francs; colors and dyes, 17,840,000 francs; vegetable oils, 17,364,000 francs; rice, 15,788,000 francs. The principal exports of domestic products were the following: Yarns, 165,435,000 francs; cereals, 165,369,000 francs; machinery, 108,110,000 francs; textile materials, 81,384,000 francs; vegetable substances, 63,176,000 francs; iron, 62,911,000 francs; hides and skins, 55,342,000 francs; cloth, 52,909,000 francs; sugar, 47,694,000 francs; glass, 45,103,000 francs; chemical products, 44,698,000 francs; meat, 43,273,000 francs; zinc, 38,775,000 francs; animal substances, 35,860,000 francs; mineral substances, 33,903,000 francs; fertilizers, 29,938,000 francs; live animals, 28,959,000 francs; steel, 22,624,000 francs; arms, 22,023,000 francs; stone, 21,823,000 francs; resinous substances, 19,901,000 francs.

The values of the special imports from and exports to the principal foreign countries in 1891 are given in the following table:

COUNTRIES.	Imports.	Exports.
France.....	326,774,740	378,671,821
Great Britain.....	199,477,549	265,637,609
Germany.....	179,567,626	312,772,813
Netherlands.....	196,617,333	225,651,123
United States.....	199,918,386	55,299,161
British India.....	121,631,232	9,042,515
Russia.....	116,210,232	.....
Roumania.....	109,939,502	.....
Argentine Republic.....	86,904,261	11,511,312
Sweden and Norway.....	46,469,927	13,662,850
Brazil.....	32,142,466	23,829,348
Italy.....	24,357,725	27,473,953
Spain.....	16,977,920	31,369,891
Switzerland.....	.....	30,089,655
Peru.....	22,109,791	.....
Egypt.....	12,666,583	10,555,627
Turkey.....	.....	19,718,711
Australia.....	19,607,459	.....
Chili.....	15,766,885	.....
Austria.....	.....	10,275,957

**Navigation.**—During 1891 there were 7,395 vessels, of 6,025,339 tons, entered, and 7,377, of 6,060,913 tons, cleared. Of the vessels entered, 3,954, of 2,257,348 tons, came from British ports, and the next largest number, 335, of 665,523 tons, from the United States; while 5,049, of 2,628,904 tons, cleared for England, and 268, of 588,706 tons, for the United States.

The mercantile marine in 1891 consisted of 8 sailing vessels, of 2,045 tons, and 47 steamers, of 70,860 tons.

**Railroads, Posts, and Telegraphs.**—The railroad network in 1892 comprised 4,517 kilometres of lines, of which 3,241 kilometres were operated by the Government, and 1,276 kilo-

metres by companies. During 1891 the state railroads carried 67,439,478 passengers, the other railroads 19,107,832. The receipts of the state lines were 142,815,489 francs, and the expenses 84,049,923 francs; the companies took in 40,771,032 francs, and had 20,826,302 francs of expenses. The capital cost of the state railroads up to 1891 was 1,341,245,043 francs.

The post-office in 1891 forwarded 97,802,555 private and 18,484,731 official letters, 37,226,241 postal cards, 81,978,680 printed inclosures, and 96,287,637 journals. The receipts were 17,021,805 francs, and the expenses 9,747,843 francs.

The number of telegraphic dispatches for the year was 8,445,593. The receipts were 3,965,008 francs and the expenses 4,349,752 francs. There were 7,225 kilometres of lines, with 34,397 kilometres of wires.

**The Army.**—Under the military laws of 1870 and 1873, modified by the act of Dec. 19, 1890, the regular army is recruited by voluntary enlistment and by conscription in such manner that about 13,300 men are called into the service annually. Substitution is allowed, but no greater price than 1,800 francs must be paid for a substitute. The peace effective is as follows: 118 officers of the general staff; 262 officers and 869 men employed in the administrative service; 222 surgeons; 1,745 officers and 28,810 men, composing 58 battalions, 415 cadres of battalions, and 2 sedentary companies; 61 officers and 2,447 men, forming 9 companies of gendarmerie, with 1,633 horses; 304 officers and 5,744 men, forming 40 squadrons of cavalry and 8 cadres, with 5,520 horses; 290 officers and 3,400 men, composing 34 field batteries and 14 cadres, with 204 guns and 2,542 horses; 146 officers and 4,518 men, including 108 artificers, composing 58 batteries and 4 companies of fortress artillery, besides 4 cadres; 29 officers and 402 men in the train; and 146 officers and 1,541 men in the engineers; making a total of 3,421 officers and 47,731 men.

The civic guard, a volunteer militia maintained in places of over 10,000 inhabitants, numbers 42,827 men. Inclusive of these the war effective is 3,846 officers and 134,881 men, with 25,369 horses, divided as follow: Field army, 2,190 officers and 74,333 men; fortress troops, 1,609 officers and 59,134 men; territorial gendarmerie, 47 officers and 1,414 men.

The behavior of the soldiers of the regular army during the strike for universal suffrage in April, 1893, led to an inquiry into the discipline and composition of the army and the revival of the old question of the introduction of universal obligatory service, which is regarded as a concomitant of universal suffrage on the Continent of Europe. Gen. Pontus, who had allowed the question to slumber during his nine years' tenure of the Ministry of War, resigned in May, and was succeeded by Gen. Brassine. The new minister went to work to devise a project for the reorganization of the army on the basis of universal liability to personal service. An increase of the war strength of the regular army to 300,000 men is contemplated, and also the conversion of the Civic Guard into a Landsturm capable of placing 100,000 men in the field in case of a hostile invasion.

**Finances.**—The revised budget for 1893 makes the total ordinary revenue 344,589,828 francs, of



which 138,000,000 francs come from railroads, 41,792,580 francs from excise duties, 24,647,700 francs from the direct property tax, 23,604,149 francs from customs, 20,000,000 francs from registration duties, 19,560,000 francs from succession duties, 19,180,000 francs from personal taxes, 12,915,100 francs from the sinking fund and other securities and the national bank, 10,919,300 francs from the post-office, 6,800,000 francs from trade licenses, 6,050,000 francs from stamps, 8,449,000 francs from other indirect taxes, 4,100,000 francs from telegraphs, 3,490,999 francs from repayments, 2,700,000 francs from navigation and pilotage dues, 1,380,000 francs from domains and forests, and 1,000,000 francs from mines. The total ordinary expenditure is estimated at 340,712,265 francs, of which 103,462,487 francs are for railways, posts, and telegraphs, 103,218,773 francs for the interest and sinking fund of the national debt, 46,801,152 francs are allotted to the Ministry of War, 23,142,570 francs to the Ministry of the Interior and Public Instruction, 18,484,427 francs to the Ministry of Justice, 17,077,668 francs to the Ministry of Public Works, 15,540,525 francs to the Ministry of Finance, 4,705,900 francs to the civil list and dotations, 4,254,400 francs to the gendarmerie, 2,495,363 francs to the Ministry of Foreign Affairs, and 1,529,000 francs represent repayments.

The capital of the public debt in 1892 was 2,314,854,124 francs, nearly the whole of which was raised for railroad construction and other useful works. Of the total debt, 1,296,935,757 francs bear interest at  $3\frac{1}{2}$  per cent., 543,333,350 francs pay 3 per cent., 250,192,000 francs consist of railroad annuities paying  $4\frac{1}{2}$  per cent., 219,959,632 francs represent the share of Belgium in the old debt of the Netherlands, on which  $2\frac{1}{2}$  per cent. is paid and no sinking fund is provided, and 4,433,235 francs consist of various unfunded liabilities.

**Electoral Reform.**—In the Constituent Assembly, elected to revise several articles of the Constitution, and especially to extend the franchise, the Government majority was smaller than in the preceding Chamber. A two-third majority was necessary for any amendment to the Constitution, and this could only be obtained by a coalition of the Ministerial party either with the Moderate Liberals or with the Advanced Left. Under the existing law the right of suffrage was restricted to citizens twenty-one years of age paying at least 40 francs annually in direct taxes. The qualifications for Deputies, the number of which must not exceed 1 to every 40,000 inhabitants, were that they should be Belgians by birth or naturalization, residing in Belgium, and at least twenty-five years of age. The Deputies are elected for four years, elections taking place every two years to replace half the number, and those who do not reside in the capital receive an allowance of 423 francs a month. The Senators have been chosen by the same electors. There are half as many of them as of Deputies, and they serve for twice the period, and are chosen from a more restricted class, men forty years old or over who pay 2,116 francs of direct taxes, except that in districts where not 1 in 6,000 of the population has this qualification, those who pay the next highest taxes are added to make the list of eligible persons 1 to every 6,000 inhabitants. The franchise under this electoral system is prac-

tically confined to the middle and upper classes. The working people of the towns and mining districts, in anti-Clericalism standing by the Radicals, but generally devoted to an extreme type of socialism, while only a small proportion of the Radicals were but mildly socialistic, had no votes. The great mass of the agricultural population, loyal Catholics, and upholders of religious education, was likewise excluded from the franchise. The Belgian plutocracy, owning and directing all the resources of this wealthy and distinguished above similar classes elsewhere for its collective opulence, has under the Constitution possessed the right to elect the lawgivers and dictate the legislation of the country. The same Constitution grants unusual freedom of speech, printing, assemblage, and association, and the industrial laborers, proportionately more numerous than in the neighboring countries where they possess votes, more poorly paid than in most countries, but not less educated or intelligent, have not only imbibed socialistic theories without hindrance, but are filled with the conviction that their masters have deliberately excluded them from a voice and representation in the Legislature for the purpose of selfishly exploiting their labor and withholding the advantages and protection which the labor vote and working-class representatives have secured from the legislatures of other countries. This situation has been prolonged for years because the politicians of both parties feared that any extension of the franchise would be followed soon by universal suffrage, under which the prosperity of the country would be swamped by socialistic legislation. Before socialism was rife, when the Liberals were in power, they would not lower the property qualification, because that would admit agricultural voters who would elevate their opponents to office. The Clericals could promise any kind of an extension in this direction, for it would perpetuate their tenure of office and prevent the anticipated return of the Liberals, and the latter desired to qualify the plan so as to admit enough urban voters to counterbalance the enfranchised Catholics of the rural districts. When the question was once opened the agitation for universal suffrage attained such dimensions that the politicians foresaw the necessity of giving some degree of representation to the working class in order to avert a revolution. The Radical party adopted the principle of universal suffrage, pure and simple.

The first project submitted to the Constituent Assembly by the Government was purely a party measure, though it would have the effect of increasing the electorate from 135,000 to 600,000. It was denounced as such by the Liberals, and the Labor party replied with a threat to proclaim a universal strike as a protest in favor of manhood suffrage. On Jan. 2, 1893, the ministry laid before the special committee of Parliament a fresh set of proposals, providing for a less liberal extension of the franchise in order to effect a compromise with the Moderate Liberals and divide the new franchises with a show of fairness between the small landholders and those possessing intellectual qualifications. The franchise would be granted to owners of houses worth 2,000 francs and to tenants of houses worth 3,000 francs in towns of 20,000 and over, 2,700 francs in smaller towns, and 1,800 francs in places of less than

3,000 inhabitants; also to persons producing a university diploma or a certificate of college education, or who pass an examination in the elementary standards. The age for exercising the franchise would be raised to twenty-five, and voting would be compulsory and penalties enforced against citizens who neglected to fulfill their duty toward the state. The Moderate Liberals were not enticed by this specious concession to their ideas, because, on computing the effects of the scheme, they saw that it would insure Clerical predominance. In treating for the co-operation of the Moderate Liberals, Beernaert dropped the projects of minority representation and a referendum to which he had committed himself in the previous session, and in dealing with the Senate proposed only a sham reform which would leave it an Assembly of the very rich not less exclusively than before. The leaders of the various parties and subordinate groups brought in their plans for revision, some 16 in all. Frère-Orban, the former Minister-President and leader of the powerful united Liberals, now followed by less than 20 old-fashioned *doctrinaire* Liberals, adhered to a simple capacity qualification, suggesting the exclusion from the franchise of all who have not passed an elementary educational standard. Janson, the Radical chief, called for universal suffrage, with twenty-one as the electoral age and a year's residence. Nothomb suggested raising the age for voting to twenty-five, and requiring a domicile of two years as a conservative counterpoise to universal suffrage. Graux would exclude illiterates and persons in receipt of public or private assistance. Beernaert, despairing of an alliance with the Moderate Left, approached the Radicals with a suggestion that the lowest educational test—a knowledge of reading and writing—should confer the right of suffrage equally with the restricted household qualification demanded by the Clericals.

**A Popular Referendum.**—The King on various occasions had shown his sympathy with the popular demand for universal suffrage voiced by the Radical-Socialist combination. He also cherished a plan for placing the sovereign in peculiar direct relation with the enfranchised democracy by an adaptation of the Swiss referendum. He desired to have embodied in the revised Constitution a law granting him the liberty of consulting the people in regard to any bill that should come to him, by ordering of his own motion a popular vote on the advisability of signing or vetoing the measure. The Prime Minister had given his approval to this scheme, but he had omitted it from the programme on failing to secure for it the support of the Right. The people were pleased with the idea, and it occurred to the Labor leaders and Radicals to exhibit the workings of the machinery of the referendum in a *plébiscite* on the various projects of electoral reform that were before the Chamber. The communal councils of the suburban communes of Brussels were the first to vote at a joint meeting to hold an unofficial referendum on Feb. 26, in which all male citizens over twenty-one years of age should be invited to take part, those who were electors under the existing law being distinguished by ballots of a special form. The city of Brussels and all the chief towns and many rural communes took

up the idea. The advocates of universal suffrage carried on a lively propaganda, and went about everywhere explaining the project and urging the people to take part. The country was flooded with pamphlets and placards, and party orators even made the rounds of the cafés and eating-houses. The Clerical-Conservatives and the Moderate Liberals generally ridiculed the project, and advised their constituents to abstain from voting. The referendum was taken, in some places earlier, but generally throughout the kingdom on Sunday, Feb. 26. About 56 per cent. of the electors went to the polls, a larger proportion than is common in the Swiss referendum. An overwhelming majority of votes were given for universal suffrage, in Brussels; for instance, 78 per cent. for manhood suffrage at twenty-one years, 14 per cent. for manhood suffrage at twenty-five, and only 8 per cent. for the various schemes of Graux, the Prime Minister, and Frère-Orban.

**A Political Strike.**—The Chamber, which resumed its discussion of the franchise question on Feb. 28, was impressed by the results of the unofficial referendum, and the Prime Minister showed anxiety to effect a compromise that would not sacrifice the principle of household suffrage. The popular referendum was resorted to in Antwerp and other places which had not voted before as a protest against the apathy of the Chamber, which came to a deadlock and seemed inclined to evade a decision by adopting a compromise arranged between the Clerical leaders and the Moderate Liberals, and announced by Count Kerchove de Denterghem, one of the latter, on April 9. It was proposed to admit all communal voters to the franchise immediately, which would increase the number of electors from 135,000 to 500,000; and, in case no completer solution could be reached by the Constituent Assembly, to delegate to the ordinary Chamber the power to enact or amend electoral laws at any time by a two-thirds majority. These proposals roused so much opposition that the Prime Minister refused to give them his sanction. Beernaert's revised plan of occupation suffrage would increase the number of electors to 800,000, which he considered a prudent half-way stage on the road to universal suffrage, as Belgium could not safely conform to this ideal expression of political equality by at once increasing the electorate from 135,000 to nearly 1,500,000. Vanderkindere and others of the Moderate Left were disposed to accede to the principle of occupation, provided rent and not the value of houses should be made the criterion, and on condition that the rural and urban districts should be separated. Janson receded from his original proposition, and accepted twenty-five years as the age qualification. Others of the Radicals fell in with a proposal, which emanated originally from the Young Right or Clerical Democrats, to establish manhood suffrage at twenty-five years of age and give dual votes to heads of families. For this compromise Féron obtained the adhesion of half the members of the advanced Left.

The Chamber on April 11 and 12 rejected all the revision propositions that had been submitted. When Janson's proposal for universal suffrage at twenty-five years of age and twelve



months' residence in the district was negated by 115 votes to 26, with 3 abstentions, a tumult arose among the people who thronged the approaches of the National Palace, and the police drove away the crowd with the flats of their swords and made many arrests. The council-general of the Labor party held a meeting in the evening and decided to issue a manifesto proclaiming the necessity for an immediate general strike. The strike had been anticipated by several thousand miners in the Borinage district, who coupled with the political protest a demand for higher wages. On the following day excited citizens gathered about the Parliament building, which had been surrounded by unmounted police, and the crowd swelled until it filled the park and neighboring streets. A mob of workmen made a rush to break the police line and ascend the steps of the building. They would have succeeded had not the reserve of mounted police charged with drawn swords. The mob met them with volleys of stones, but was finally forced back, many being cut or trampled and several policemen hurt. Similar disturbances took place in the streets near by and in other parts of the city. On the same day riotous miners demolished the buildings and machinery of a coal pit at Cuesmes, near Mons, attacked the Catholic club building, and held possession of the town. A municipal councilor was arrested as one of the leaders. At Quaregnon striking miners began to fill with rubbish the shafts of the pits, for the purpose of imprisoning men who were working below, and were dispersed with difficulty by the gendarmes. The strike spread among the smiths, wood workers, printers, and other trades, especially in the Verviers and Louvain districts. In the district of Mons alone 15,000 men went on strike in two days, and in Ghent 20,000. In Brussels and elsewhere the Civic Guard was called out.

The vote on household suffrage as proposed by the Government was 91 against 65, thus falling short of a two-thirds majority. The amendment of De Smet, regulating suffrage according to the amount of rent paid, though accepted by the ministry, was likewise rejected. Frère-Orban was able to obtain only 18 votes in favor of his proposal to endow with the franchise only those who have an elementary education. After all the various schemes had been voted down, Woeste, the Clerical leader, submitted a proposal for a qualification of 10 francs of taxes, or a rental of 100 francs. The plan of dual voting was brought forward by Prof. Nyssens, of the Louvain University, a member of the Young Right, and in another form by another Clerical.

On April 13 the rioters at Quaregnon raised barricades, and in Paturages there was a savage encounter with the police. In Brussels several thousand rioters marched through the streets, smashing the windows of unpopular citizens. The Socialist leaders, Volders, Vanderveld, and Maes, were arrested, but were soon liberated. Ex-Minister Woeste was assaulted in the street. An attempt to storm the office of the Catholic journal "Le Patriote" was frustrated by a charge of the Civic Guards. On April 14 the police made a vain attempt to disperse an immense crowd in front of the People's Hall, which the burgomaster had ordered to be closed.

Shots were fired and people struck down and trampled. Attempts to carry out the burgomaster's prohibition against street parades led to fierce collisions. At night workmen of the Labor party proceeded to open a meeting, in spite of the interdict of the authorities, and when the police interfered and tried to clear the wine shops and coffee houses, barricades were thrown up, the street lamps were extinguished, and in the fighting a great number were injured on both sides. The authorities were unable to carry out the prohibition of public meetings in the capital, but the leaders of the Labor party discountenanced the turbulence of their followers and restored comparative tranquillity. A brutal assault was committed on Burgomaster Buis on April 16, and in the evening a desperate conflict took place between the mob and the police. The strike became general, and the newspapers could not appear for lack of compositors. In Mons a dynamite bomb was exploded beside a church on April 16. On the following day rioters took possession of the streets for a labor procession, and when a body of militia, exasperated by the missiles thrown at them, fired into the crowd, killing 4 miners, the strikers charged upon the soldiery. A desperate hand-to-hand conflict ensued, in which the Civic Guard was finally victorious after many had fallen on both sides.

In Antwerp a thousand dock laborers struck, attempted to stop all work on the wharves, and fired with revolvers upon the gendarmes, who returned the fire. The police made several vain attempts to clear the streets. A squadron of mounted police was put to flight, and before the reserves appeared the mob had thrown up barricades, which they held with rifles and revolvers against police and militia. After three charges the rioters retreated firing. Several soldiers were hit. On the following day the strikers continued their efforts to hold the wharves and interrupt trade, and several times the police charged among them, cutting many with their swords. In Grummont the gendarmerie were able to break up a meeting only after a long struggle, in which a large number of persons were seriously injured. A collision occurred also at Courtrai. In Bourgerhout striking candle-makers, assaulting those who remained at work, were charged by the soldiers with fixed bayonets, and 4 were killed and 15 dangerously wounded.

**Adoption of Universal Suffrage.**—The revolutionary demonstrations of the populace wrought a sudden change in the character of the deliberations of the Chamber. On April 16 Janson and Féron announced that they and 40 other members of the Left would agree to the scheme of universal suffrage complicated by plural voting proposed by Nyssens. A compromise accepted by the Radicals was sure to stay the revolutionary tide, and the ministers were confronted with the alternative of abandoning the principles for which they had contended and accepting a measure practically identical with universal suffrage, since the safeguard of plural voting could be abolished at any time in response to a popular demand, or dare the people to a revolution that they could not suppress. The Belgian troops had not been called upon to put down the riots. Their sympathies were with the people, and several instances of insubordination occurred dur-

ing the crisis. Socialism had spread among the army to an unsuspected extent. The Socialists had posted up placards calling on soldiers and recruits to refuse to obey or serve until universal suffrage was triumphant. Soldiers of the reserve had fought in uniform alongside of the strikers against the worthless, undisciplined militia. On April 17 the Government announced its acceptance of the Nyssens proposal. The bill was reported by the committee on the following day, and was passed by 119 votes against 12, with 14 abstentions. The minority was composed of a section of the Moderate Left, under the lead of Frère-Orban, while those who did not vote were members of the Right and followers of Woeste. The result was acclaimed with cheers by the crowds assembled round the building. The leaders of the Labor party sent out a manifesto advising abandonment of the general strike, but reaffirmed their demand for universal suffrage pure and simple in the following resolution:

The Labor party, through its general council, records the inscription of manhood suffrage in the Constitution. It declares that it is thanks to the pressure of the universal strike that the Labor party has won this first victory. It resolves to persist in the work of propaganda, and to continue the struggle until it obtains the suppression of the plural vote and the establishment of political equality has been won.

The Senate passed the Nyssens bill on April 27 by 52 votes to 1, with 14 neutrals.

The scheme of plural or cumulative voting provided for in the Nyssens bill confers a vote on every male citizen at the age of twenty-five who has resided at least one year in the same commune and has never been convicted of a breach of the law. The bill confers an additional vote (1) upon every male citizen aged thirty-five years, who is either married or a widower, paying a Government tax of at least 5 francs, unless exempted from the tax on account of his profession; (2) upon every male citizen aged twenty-five years who is an owner of real estate of the value of at least 2,000 francs, or who has been inscribed for at least two years on the ledger of the public debt as the possessor of at least 100 francs in Belgian rentes, or has an equal income from savings-bank deposits; (3) upon every male citizen aged twenty-five years who is the bearer of a diploma of superior education, or of a similar certificate showing that he has attended a complete course of higher instruction in a public or private seminary, or that he is filling or has filled a public office, or is holding or has held a place, or is exercising or has exercised a profession implying superior education, the question as to what positions and professions are to be regarded as qualifying under this clause to be decided by law; no person is to be entitled to more than three votes, even though he possesses all four qualifications. The Government had embodied in its scheme of revision the new principle of obligatory voting. Many objected to making an experiment of it in Belgium, but the Labor party favored the idea because it would help to protect the independence of the workingman's vote by rendering illegitimate influence and intimidation difficult of concealment and preventing official obstruction of the ballot. The extension of the franchise made it necessary to have a polling place in each commune. Previ-

ously voters have gone to the chief town of the arrondissement to cast their votes, the Liberals desiring to remove them from the influence of the parish priests and landlords. The Government secured a two-thirds majority in both the Chamber and the Senate for compulsory voting and communal polling. The readjustment of electoral divisions was left to be arranged after the new Constitution goes into force. The immediate result of the extended franchise is expected to be some increase of the Catholic plurality. The number of electors under universal suffrage exceed 1,200,000. The number of supplementary votes under dual or plural qualifications is estimated at 700,000, of which 640,000 belong to heads of families and owners of property, and 60,000 come under the capacity qualification. A proposition to dispense with the necessity of the re-election of a member of Parliament on his being appointed a minister of the Crown was rejected at first by the House, but was reintroduced in the Senate and became a part of the amended Constitution.

**Other Constitutional Amendments.**—The Constituent Assembly had four other matters to deal with besides the reform of the franchise. One was the introduction of proportional representation or the representation of minorities in some form. The ministry advocated this innovation for the reason that the outcome of the elections under the new electoral system was so uncertain that the method of voting collective tickets established in Belgium might result in the deprivation of an entire political party of representation in Parliament. Of still more importance was the reorganization of the Senate. A third question to be decided was whether the constitutional right to acquire colonies should be accorded to the Legislature. This question had already been settled in principle, and the Constituent Assembly had only to register the decision reached by the previous Parliament, and thus remove the constitutional restriction that stood in the way of the transfer of the rights and duties connected with the Congo State from King Leopold to the Belgian state, and the execution of the arrangement for making it a Belgian colony. The other subject to be dealt with, in which also the King had a deep concern and which was brought forward at his express request, was the alteration of the law of succession to the throne. Since the death of Prince Baldwin, the continuance of the dynasty depends on the chances of life of Prince Albert, a youth of eighteen years. If Leopold II or his successor should die without leaving a male heir, or without choosing a successor and obtaining the approval of both Chambers, then Parliament can dispose of the throne by its free vote, or can even proclaim a republican form of government. The Senate initiated an amendment by which a crown prince who is excluded from the succession by reason of amorganatic marriage, is enabled to recover his rights.

The first proposal of the Government for the reorganization of the Senate left the method of election the same as for the Chamber, and made only a formal change in the conditions of eligibility. Property owners would be eligible whose possessions were valued at 500,000 francs, or in default of such, those who paid the highest taxes



in the proportion of 1 to 6,000 of population. To these were added a class confined to ex-ministers and high state functionaries. This proposal was simply intended to open the discussion and elicit the views of the parties. In the course of the discussion the ministers advocated making the Senate representative of interests—an idea that the King was supposed to favor. The various projects, including representation of interests, election by 2 degrees, a combination of both, and the fixing of the age of eligibility at thirty-five or forty, were all rejected in the Chamber by a majority of more than two thirds, on June 22. Fresh proposals were rejected, and on July 7, by agreement of the party leaders, the matter was referred back to the committee. At the end of two weeks votes were taken on various revised proposals with no better success. On July 25, a combination of the ministers and the leaders of the Radical Left secured a two-thirds majority for some of the provisions of a compromise project. This makes the future Senate consist of 76 Senators elected by universal and plural suffrage, and 26 elected by the provincial councils apportioned to the population. The latter were exempted from all property qualifications, but for eligibility by universal suffrage the Government insisted on requiring a candidate to be a taxpayer to the amount of 1,500 francs a year. The Extreme Left, though willing to restrict the suffrage to men over thirty years of age, and to abandon their stipulation that Senators should receive pay, objected to the exclusion of all citizens except the wealthy. The age qualification for candidates was fixed at forty years by general consent. The Radicals suggested a taxpaying qualification of 1,000 francs, and the admission of candidates who had sat eight years in the Chamber or were professors of universities or officers of certain trade bodies. When this compromise was rejected they proposed adding to the persons paying 1,500 francs taxes others of the largest taxpayers enough to make the list of eligible candidates equal 1 in 3,000 of population, or 2,000 for the whole kingdom, whereas the Government project, to which the ministers clung obstinately, would give only 1,200 qualified candidates.

**Congress of Miners.**—An International Congress of Miners was opened at Brussels on May 22. Among the delegates were six members of the British Parliament, one of whom—Samuel Woods, President of the Lancaster Miners' Association—was chosen president of the congress for the English-speaking section. Two others, Benjamin Pickard and Thomas Burt, were elected secretary and treasurer, and Calvignac, the workingman mayor of Carmaux, whose grievance against his employers caused the great Carmaux strike, was made president for the French language. Two new presiding officers were chosen each day. Two French Socialist delegates, Basly and Lamendin, were expelled from Belgium by order of the Government, and the Prime Minister, on being questioned in the Chamber, was sustained on the ground that these men had attacked the rights of Belgian laborers in France. They had declaimed against the importation of Belgian miners to take the places of French strikers in January, 1893, and in the congress

they had been the most energetic advocates of the principle of state interference against the arguments of a large section of the strong English delegation, but in this they were supported by nearly all the Continental delegates. The authorities, when interceded with, adhered to their determination, though no one could give an intelligent explanation of their arbitrary act. The object of the order of expulsion seemed to the congress to be to bring its proceedings into disrepute, and the motion to accept the invitation of M. Calvignac to adjourn to Valenciennes and conclude the deliberations on French soil was only defeated by the argument of the British Labor members of Parliament, Fenwick and Abraham, that this would be a surrender to the enemy. A resolution was passed begging the French and other foreign delegates to overlook the insult and continue their attendance. The British contingent was numerous enough to dominate the proceedings, and it was divided in opinion in regard to the legal eight-hour day, the principal question before the congress. The representatives of the Miners' National Union, the great and wealthy trade union of the miners of Northumberland, derided the policy of cringing to Parliament and petitioning for the legislative regulation of hours of labor, when by self-help and independent effort workingmen can obtain their demands, as they had before state interference was thought of. The Miners' Federation of Great Britain, on the other hand, was in favor of a legalized working day, and its representatives were desirous of obtaining the sanction of the congress for a universal strike to obtain the eight-hour day. There were 38 British delegates present to represent the 339,500 trade unionists among the 560,000 miners of Great Britain. The 92,000 miners of France were represented by 14 delegates. The delegates expected from Germany were either imprisoned by their Government to prevent their attendance, or were absorbed in the electoral struggle then going on in their country, except one who was present to speak for 183,000 miners of Westphalia. There was also a single Austrian delegate representing 100,000 miners of Bohemia. Delegate Baily, of Nottingham, introduced the important question of the meeting in the following resolution:

That this congress affirms the principle of the legal eight-hour day from bank to bank.

Boyle, of Northumberland, moved as an amendment:

That this congress, recognizing the great diversity in the natural conditions existing in the several nations, is of opinion that it is undesirable to delegate to parliament or legislature the power or right to fix the hours that adults shall labor in the mines, but would strongly urge on every nation and district to embrace every opportunity afforded them to reduce their working hours as far as may be practicable, without injuring themselves.

Basly, who is a member of the French Chamber, warmly defended the original proposition before his expulsion, and Binger, the Austrian delegate, Callewaert, in behalf of the Belgian miners, and other delegates, took the same view. In registering the vote the number of miners represented were counted, not the number of delegates or of trade societies that had delegates pres-

ent. The Englishmen who favored the amendment objected to allowing the German and Bohemian members to vote because the miners who sent them were not organized in trade unions, and the matter was compromised by granting to the British delegates votes proportionate to the number of miners in their districts, irrespective of the strength of the unions that they represented. The congress, by this mode of reckoning, represented 1,094,000 miners, of whom 100,000, through the delegates of the Durham and Northumberland union, voted against making eight hours a working day by legal enactment, and 994,000 voted in favor of it. On the motion of Weir, a Scotch delegate, the congress voted in favor of organizing a general strike, if necessary, as a means of constraining reluctant legislatures to grant their demand. The Welsh delegates joined those of Durham and Northumberland in opposing this, reducing the majority to 854,000. A resolution that female labor should be prohibited in and about mines in all countries was carried unanimously, and during the discussion the fact was pointed out that in Belgium 3,500 women still work under ground twelve or fourteen hours a day. A proposition that workers above ground about mines should benefit in the reduction of hours was approved by a majority of 299,000. Another resolution declares

That it is the opinion of this congress that mines inspection is insufficient; that a larger number of inspectors is required in order that the work may be done satisfactorily, and that men who are working or who have worked in mines should be appointed as inspectors of mines.

The congress closed its sessions on May 26, after deciding to hold the next conference in Germany, or, if the German authorities should forbid the meeting in that country, to hold it in England.

**BERING SEA TRIBUNAL OF ARBITRATION.** After the cession of Alaska to the United States by the Russian Government was consummated, in pursuance of the treaty of March 30, 1867, laws were enacted, July 1, 1870, extending to the mainland, islands, and waters of the territory ceded the laws of the United States relating to customs, commerce, and navigation; forbidding the killing of any otter, mink, martin, sable, fur seal, or other fur-bearing animal within the limits of the territory or in the waters thereof; and giving power to the collector or other officers of the Treasury to arrest persons and seize vessels and merchandise for contravention of the laws extended over the territory. Although in 1872 Secretary Boutwell could not see that the United States had jurisdiction or power to prevent the capture of seals on their annual migration to the seal islands by sealers from Australia and Hawaii unless they carried on their operations within a marine league of the shore, the Treasury Department in 1881, when Canadian sealers had begun to make inroads on the herd, ruled that all the waters within the boundary defined in the Russian treaty of cession "to the western limit of the Aleutian Archipelago and chain of islands" are comprised within the waters of Alaska Territory. The western limit of the territories and dominion conveyed to the United

States is defined in the treaty as running from a point midway between the islands of Krusenstern and Ratmanoff, in Bering Strait, nearly southwest, so as to pass midway between the northwest point of the island of St. Lawrence and the southeast point of Cape Chukotski to 172° of west longitude, and thence in a southwesterly direction, so as to pass midway between the island of Attu and Copper island of the Kommandorski group, to 193° of west longitude, so as to include the whole of the Aleutian Islands east of that meridian. The right to exercise jurisdiction in these waters beyond the three-mile limit was not put in force, though poaching vessels were spoken to by revenue cutters, till 1886, when an unusually large fleet having been fitted out in British Columbia for the coming sealing season, Secretary Manning affirmed the previous ruling, and in August the "Corwin" seized the "Onward," 115 miles from land, the "Carolena," 75 miles out, and the "Thornton," 70 miles out. These schooners were taken into Sitka, confiscated, and condemned to be sold, Judge Dawson instructing the jury to find the defendants guilty if they were proved by the evidence to have killed seal or other fur-bearing animals on the shores of Alaska or in Bering Sea east of 193° of west longitude. The British minister at Washington, Sir L. S. Sackville West, protested against the seizures, and the President instructed the authorities at Sitka to discontinue proceedings and release the captured vessels, Secretary Bayard at the same time explaining that the action was taken without conclusion of the questions involved, and refusing to give any assurance that the seizures would be discontinued. In the summer of 1887 the "Richard Rush" seized the "W. P. Sayward," "Dolphin," "Grace," "Anna Beck," "Ada," and "Alfred Adams," which were condemned; but the sale was postponed at the request of the British Government pending an investigation of the legality of the proceedings, until in November, 1888, the "Grace" and "Dolphin" were ordered to be sold at the desire of their owners.

Meanwhile, Secretary Bayard, on Aug. 19, 1887, sent circular letters to the United States ministers in England, France, Germany, Japan, Russia, and Sweden, instructing them to draw the attention of the governments to which they were accredited to the necessity of taking steps for the better protection of the fur-seal fisheries in Bering Sea, and to the desirability of attaining this end by international co-operation, "without raising any question as to the exceptional measures which the peculiar character of the property in question might justify this Government in taking, and without reference to any marine jurisdiction that might properly be claimed for that end." The several governments were invited "to enter into such an arrangement with the Government of the United States as will prevent the citizens of either country from killing seal in Bering Sea at such times and places and by such methods as at present are pursued, and which threaten the speedy extermination of those animals and consequent serious loss to mankind." Great Britain, as well as France, Japan, Russia, and Sweden and Norway, returned favorable replies to the proposition, although the Swedish Government declined



to take part in the negotiations because it had no immediate interest in the fisheries. Mr. Bayard proposed a close season from April 15 to Nov. 1, in Bering Sea between 160° of east and 170° of west longitude. The Russian Government proposed to include her part of Bering Sea around the Commander Islands and the sea of Okhotsk. Lord Salisbury assented to both the American and the Russian proposals, and suggested that the regulated area should extend to the parts of the Pacific Ocean and the sea of Okhotsk that lie north of 47° north latitude. The negotiations were suspended in June, 1888, by Lord Salisbury at the request of the Canadian Government, which desired to submit to him a memorandum on the subject.

During 1888, while these negotiations were in progress, no seizures were made. In 1889 the "Richard Rush" captured the "Black Diamond," "Juanita," "Pathfinder," and "Lily," and warned off the "Triumph." The "Black Diamond," whose catch of sealskins had been transferred to the revenue cutter, was placed in charge of a special officer of the United States, who was ordered to take her to Sitka, but the master took his vessel to Victoria. Sir Julian Pauncefote, the British minister to the United States, protested against these seizures, and the diplomatic controversy between Secretary Blaine and the Marquis of Salisbury was renewed. No seizures were made in 1890—excepting that the "Pathfinder" was seized in Neah Bay, Washington, on the previous charge, but released two days afterward—and before the sealing season of 1891, on June 15, a *modus vivendi* was agreed to, in accordance with which the British Parliament prohibited the taking of seals by British subjects in the American part of Bering Sea. The United States Government prohibited seal-killing for the season in excess of 7,500 to be taken on the seal islands for the subsistence and care of the natives, and both governments undertook to patrol the sea. Any person or vessel offending against the prohibition taken by the naval or other proper authorities of either government was to be delivered up to be tried by the judicial authorities of his own government. This arrangement was made with a view to a settlement of the whole question by a joint commission. It was agreed that suitable persons designated by Great Britain should be allowed to visit the seal islands during the season, and Sir George Smyth Baden-Powell and Dr. George M. Dawson were sent to study the conditions of seal life on the spot. The United States Government commissioned Prof. T. C. Mendenhall and C. Hart Merriman to make a similar investigation, and by arrangement between the Secretary of State and the British minister a conference of these commissioners took place in February, 1892. The Canadian Government, with the approval of the imperial authorities, had taken proceedings to have the question of seizures outside of the limits of the ordinary territorial maritime jurisdiction passed upon by the United States Supreme Court by applying for a writ of prohibition restraining the District Judge for Alaska from further proceedings in the case of the "W. P. Sayward," on the ground of lack of jurisdiction by reason of the fact of the seizure having

taken place 59 miles from land. This mode of testing the question and the plan of formulating regulations by direct conference with the aid of commissioners both gave way to Secretary Blaine's proposal to refer the whole matter to the decision of an international court of arbitration. The terms of the agreement of arbitration as proposed by him, and modified to meet the objections of Lord Salisbury, were as follows:

1. What exclusive jurisdiction in the sea now known as Bering Sea, and what exclusive rights in the seal fisheries therein, did Russia assert and exercise prior and up to the time of the cession of Alaska to the United States?

2. How far were these claims of jurisdiction as to seal fisheries recognized and conceded by Great Britain?

3. Was the body now known as Bering Sea included in the phrase "Pacific Ocean" as used in the treaty of 1825 between Great Britain and Russia, and what rights, if any, in Bering Sea were held and exclusively exercised by Russia after said treaty?

4. Did not all the rights of Russia as to jurisdiction and as to seal fisheries in Bering Sea east of the water boundary in the treaty between the United States and Russia of March 30, 1867, pass unimpaired to the United States under that treaty?

5. Has the United States any right, and, if so, what right of protection or property in the fur seals frequenting the islands of the United States in Bering Sea when such seals are found outside the ordinary three-mile limit?

The original draught of the treaty contained, besides the 5 points in which the United States Government contended for the rights of exclusive jurisdiction in Bering Sea and ownership in the seal herd of the Pribylov Islands, the following proposition, in which the regulation of the fisheries on the basis of mutual agreement is referred to the arbitrators:

If the determination of the foregoing questions shall leave the subject in such position that the concurrence of Great Britain is necessary in prescribing regulations for the killing of the fur seal in any part of the waters of Bering Sea, then it shall be further determined: (1) How far, if at all, outside the ordinary territorial limits it is necessary that the United States should exercise an exclusive jurisdiction in order to protect the seals for the time living upon the islands of the United States and feeding therefrom. (2) Whether a closed season, during which the killing of seals in the waters of Bering Sea outside the ordinary territorial limits shall be prohibited, is necessary to save the seal-fishing industry, so valuable and important to mankind, from deterioration or destruction. (3) And, if so, what months or parts of months should be included in such season and over what waters should it extend.

This question Lord Salisbury thought would more fitly form the substance of a separate reference. He did not object to the reference of the general question of a close time to arbitration, or to ascertaining by that means how far the enactment of such a provision is necessary for the preservation of the seal species; but thought that such reference ought not to contain words "appearing to attribute special and abnormal rights in the matter to the United States." The form of the question was altered after further correspondence, and it was embodied in the treaty in the following shape:

If the determination of the foregoing questions as to the exclusive jurisdiction of the United States shall





BERING SEA

SCALE OF NAUTICAL MILES  
0 20 40 60 80 100 120 140 160 180 200 220 240 260

SCALE OF STATUTE MILES  
0 20 40 60 80 100 140 180 220 260

Longitude 170 East from Greenwich 172 174 176 178 180 182 184 186 188 190 192 194 196 198 200

West from Greenwich 162 164 166 168 170 172 174 176 178 180 182 184 186 188 190 192 194 196 198 200





leave the subject in such position that the concurrence of Great Britain is necessary to the establishment of regulations for the proper protection and preservation of the fur seal in, or habitually resorting to, the Bering Sea, the arbitrators shall then determine what concurrent regulations outside the jurisdictional limits of the respective governments are necessary, and over what waters such regulations should extend.

To enable the arbitrators to deal with the alternative point, the treaty provided for the appointment of a joint commission to make an investigation, and report, if the arbitrators should call for it. Lord Salisbury proposed to add a clause for the determination and award of damages by the arbitrators to persons who have been injured, in case it should be decided that "the action of the United States in seizing British vessels has been without warrant in international law." The United States Government did not object to including the question of alleged damages to English ships, on condition that if, after the issues of the arbitration are joined, the United States should prevail, "all the seals taken by Canadian vessels during the period shall be paid for at the ordinary price for which skins are sold." No agreement was reached as to the reference of the question of damages, and the matter was left for future negotiation, a provision being introduced into the treaty which permitted either party to submit to the arbitrators any facts bearing upon the question.

Article I of the treaty, as finally arranged on Feb. 29, 1892, recited that the governments of the United States and Great Britain, being desirous to provide for an amicable settlement of the questions that had arisen between them concerning the jurisdictional rights of the United States in the waters of Bering Sea, and concerning also the preservation of the fur seal in, or habitually resorting to, the said sea, and the rights of the citizens and subjects of either country as regards the taking of fur seals, agree to submit the questions to a tribunal of arbitration, composed of seven arbitrators, to be nominated: 2 by the Queen of Great Britain, 2 by the President of the United States, 1 by the President of the French Republic, 1 by the King of Italy, and 1 by the King of Sweden and Norway. Articles II, III, IV, and V provided for the place and time of meeting and manner of procedure of the Tribunal of Arbitration. Article VI contained the questions as to existing rights of the United States submitted for arbitration. Article VII contained the reference regarding regulations for the protection of the seals. Article VIII provided that either of the contracting parties might ask for a finding on questions of fact involved in claims for damages, the question of liability on the facts found to be the subject of further negotiation. Article IX provided for the admission of the report of the joint commission of 2 American and 2 British commissioners who were sent to Bering Sea to study the habits of the seals and the condition of the herd. Articles X, XI, XII and XIII relate to payment of the expenses of the tribunal and to the time within which a decision should be rendered. Article XIV reads as follows:

The high contracting parties engage to consider the result of the proceedings of the Tribunal of Arbitration as a full, perfect, and final settlement of all the questions referred to the arbitrators.

Article XV related to the ratification of the treaty. The arbitrators appointed were: For the United States, Justice John M. Harlan, of the United States Supreme Court, and Senator John T. Morgan, chairman of the Senate Committee on Foreign Relations; for Great Britain, Lord Hannen, of the Judiciary Committee of the House of Lords, and Sir John S. D. Thompson, Prime Minister of the Dominion of Canada; for France, Baron de Courcel, former French ambassador at Berlin; for Italy, the Marquis Emilio Visconti-Venosta, a distinguished Italian diplomatist and former Foreign Minister; for Sweden and Norway, Judge Gregers W. W. Gram, a distinguished Norwegian jurist.

The islands of St. Paul and St. George, forming the Pribylov group, are the largest seal rookery in the world, and the only important one remaining in the north Pacific Ocean except the Commander Islands, belonging to Russia, on the opposite side of Bering Sea, which are inhabited by seals of an inferior variety which never mingle with the American herd. The seals inhabit the Pribylov Islands for eight months of the year, leaving them only for a day or two at a time to find food in the surrounding waters within a radius of 50 or 100 miles. The nursing dams seek the water oftenest, whereas the old bulls do not leave the rookery. The young are born during the summer, feed on nothing but their mothers' milk, which they take every two or three days for about four months, and at the end of that time have learned to swim well enough to seek their own food, though they are still poor swimmers, and for a long time afterward, for the seal is essentially a land animal. In the winter the entire herd leaves the islands, swimming southward into the Pacific Ocean, and then dispersing far and wide to the south and east. About May 5 the old bulls return to the rookery and seek their positions; they are followed by the rest of the herd, the cows, heavy with young, being the last to arrive. By the middle of July the entire herd has collected on the islands, the mature animals on the breeding-grounds, and the young males and yearling females on the hauling-grounds, which are remote from the rookeries. When a young bull has attained his growth, at the age of six or seven years, he can win a place in the rookeries by overcoming one of the decrepit old bulls in combat. For ninety years the seals have been preserved and bred on these islands under the supervision, first, of the Russian, and afterward of the American Government, which assumed by statute the control and management of the business soon after taking possession. Young male seals, known as bachelors, are selected for slaughter at the age and season when the fur is at its best. The slaughter takes place between June and October, with an intermission during a part of August and September, when the fur is not in good condition. The number that can be killed is fixed by law, and the regulations are carried out by officials of the Government in such wise that there shall be no diminution of the natural increase of the herd. No female is allowed to be killed, for that involves the cutting off of one young seal a year



from the natural increase during the natural term of the mother's life; whereas, if fourteen out of every fifteen young males are killed the product will not be diminished, for every bull serves as many as fifteen cows under the natural conditions of the herd, and can serve twenty or thirty. The annual slaughter on the hauling-grounds is conducted in such a way that the other seals are not frightened in the least.

Under the supervision and control of the United States Government the herd increased rapidly up to 1885, when it represented a capital value of about \$30,000,000. It was a source of revenue to the Government, which collected a royalty of about \$10 on each raw skin, amounting to over \$1,000,000 a year, and a duty on imported dressed skins amounting to about \$375,000 annually. The lessee company which farmed the business of obtaining and selling the skins made a large profit; and the manufacturers of London who dressed the skins and traders and retailers in various cities got their share; and the natives of the Pribylov Islands, the furbressers of London, and working furriers in the United States, France, England, and other countries were dependent on the industry for their livelihood. It was not till 1886 that this property and the industry depending upon it were seriously menaced. In that year a considerable fleet of vessels was fitted out in Victoria, British Columbia, by Canadian and American owners, to take seals on their return to the seal islands and in the adjacent waters where they sought their food outside of the three-mile limit. The field of this enterprise, as Mr. Blaine pointed out in a letter to Sir Julian Pauncefote, was "a sea which lies far beyond the line of trade, whose silent waters were never cloven by a commercial prow, whose uninhabited shores have no port of entry and could never be approached on a lawful errand under any other flag than that of the United States." The principle of self-preservation impelled the Government of the United States in that and subsequent years to check the invasion of "this peaceful and secluded field of labor, whose benefits were so equitably shared by the native Aleuts of the Pribylov Islands, by the United States, and by England," and to deny the right of Canadian vessels "to enter and by their ruthless course to destroy the fisheries, and with them to destroy also the resulting industries, which are so valuable." The measures taken to police Bering Sea, intermitted as they were in compliance with diplomatic protests and in the hope of securing an international arrangement of the dispute, did not prevent the serious depletion of the herd. The poachers improved their methods of destruction, fitted out steam vessels for the purpose, and increased their fleet until there were 49 vessels engaged in the work in 1892, and 67 were fitted out for the season of 1893. The number of seals killed by poachers reached 28,000 in 1891, and the depredations already committed had reduced the number allowed to be killed on the islands under the lease from 100,000 in 1886 soon to 60,000, and in 1890 to 21,000. The reason why pelagic sealing was so destructive was because the majority of the seals killed were females, and of those shot in the water only 1 in 5 or 6 was recovered.

The Bering Sea Arbitration Tribunal met in Paris on March 23. In accordance with precedents, Baron de Courcel was chosen president, and after organizing the court adjourned to examine the printed cases submitted by the United States and Great Britain, reassembling on April 4 to listen to the spoken arguments in their support. The agent representing the United States before the tribunal was ex-Secretary of State John W. Foster; the British agent was C. H. Tupper, Canadian Minister of Marine. The legal counsel for the United States Government were E. J. Phelps, ex-minister to England, Henry W. Blodgett, Frederic R. Coudert, and Robert Lansing. The counsel representing the British Government were Sir Charles Russell, Attorney-General, ex-Attorney-General Sir Richard Webster, the Hon. W. H. Cross, and C. Robinson, of the Canadian bar.

The arguments by which Secretaries Blaine and Bayard in the diplomatic controversy, and afterward the United States counsel before the Tribunal of Arbitration, supported the claim of the United States to prevent the destruction of the seals when they gather in the early summer in a vast body and return through the passes of the Aleutian Islands to their home, and while they leave the islands to hunt for food in the circumjacent waters, were of three kinds, based on territorial jurisdiction in Bering Sea, a right of private property in the seals, and the common interest of mankind in the preservation of the species and the prevention of its inhuman destruction for the temporary gain of sordid speculators. The United States claimed by virtue of the Russian cession exclusive maritime jurisdiction in their half of Bering Sea, based not on the old doctrine of *mare clausum*, but on a prescriptive right claimed and exercised by Russia with the acquiescence of Great Britain and other powers. In 1799 the Russian Czar had issued an ukase asserting exclusive dominion in Bering Sea, and on Sept. 4, 1821, Alexander I issued another, claiming for Russian subjects the exclusive right to pursue commerce, whaling, and fishing, or any other industry, "on all islands, posts, and gulfs, including the whole of the northwest coast of America, beginning from Bering strait to 51° of north latitude; also from the Aleutian Islands to the eastern coast of Siberia, as well as along the Kurile Islands from Bering strait to the south cape of the island of Urup, or to 45° 50' of north latitude." The foreign vessels were forbidden not only to land on the coasts and islands belonging to Russia but to approach them within less than 100 Italian miles, the transgressing vessel being subject to confiscation together with its whole cargo. Russia based its claim to sovereignty over Bering Sea and the part of the Pacific Ocean lying between its possessions on both shores on the ground of *mare clausum*. Both John Quincy Adams, then Secretary of State in Washington, and Mr. Canning, British Minister of Foreign Affairs, protested against the Russian pretensions. The outcome of the controversy was a treaty signed on April 17, 1824, between Russia and the United States and a similar treaty concluded with England on Feb. 28, 1825. In the American treaty Russia agreed that American citizens should not be restrained from fishing, navigat-





BOGOSLOV PEAK, ALEUTIAN ISLANDS.



ing, or resorting to the coasts, except at points occupied for the purpose of trading with the natives, in any part of "the great ocean commonly called the Pacific Ocean or South Sea." The treaty with Great Britain in like manner declares fishing, navigation, and trade to be free "in any part of the ocean commonly called the Pacific Ocean." The American diplomatists contended that the Sea of Kamchatka, or Bering Sea, was a distinct body of water not included in the phrase "Pacific Ocean" as used in these treaties, and supported this contention with documents and facts showing that Russia had always asserted and continued to assert and exercise jurisdiction over this sea. The translation of the ukase of 1799 granting a monopoly of trade and fisheries in Siberia and Alaska to the Russian-American company, submitted as evidence in the American case, was discovered by the British Government to be faulty, and the Department of State at Washington, having likewise discovered mistranslations and interpolations in this and other documents, withdrew them on Nov. 19, 1892. The case as presented to the tribunal was based less on positive rights in Bering Sea than on property rights in the seals, which, though *feræ naturæ*, were guided by a homing instinct, which brought them back unerringly to the seal islands. During the time and in the places where the United States authorities sought to protect them from destruction they were identified as members of the Pribylov herd. The *animus revertendi* induced them with the character of private property, as in the case of falcons, swans, bees, or other wild animals that have been reduced to possession. Moreover, it was opposed to natural justice, an immoral act, *contra bonos mores*, a violation of the law of nature, which is the same thing as international law, to ruin an industry useful to mankind that had been fostered and developed by the United States Government and kill off the female seals, usually destroying three lives, the cow shot in the water but not recovered once in five times, the calf on the island, which starves if the mother does not return to feed it, and the unborn calf, besides cutting off the future increase of the female killed. The American counsel before the Tribunal of Arbitration drew their principal argument from the law of nature, contending that the question must be adjudged in accordance with the principles and rules which are dictated by the "general standard of justice upon which civilized nations are agreed." They admitted that "there is no legislation in the ordinary sense of that word for the society of nations," but added, "nor in respect to by far the larger part of the affairs of life is there for municipal societies; and yet there is for the latter an always existing law by which every controversy may be determined. The only difference exhibited by the former is that it has no regularly constituted body of experts called judges clothed with authority to declare the law. And this distinction is wiped away in the case of the present controversy by the constitution of this tribunal." Nor can there be any substantial difference of opinion concerning the sources to which we are to look for the international standard of justice. All law, whether it be that which governs the con-

duct of nations or of individuals, is but a part of the great domain of ethics. It is founded in each case upon the nature of man and the environment in which he is placed. There is a measure of uncertainty concerning the precepts of the law of Nature, an uncertainty in a greater or less degree found in all the moral sciences, but the actual practice and usages of nations, though not the only evidence, are the best evidence of what is agreed upon as the law of nations. These prove what nations have, in fact, agreed to as binding law, but in the absence of evidence to the contrary nations are to be presumed to agree upon what natural or universal justice dictates. The sources to which the arbitrators have to look in deciding the questions submitted to them therefore are: (1) The actual practices and usages of nations, which are to be learned from history and deduced from acts commonly done by one nation without objection from other nations, from treaties, and diplomatic correspondence; (2) judgments of courts which profess to administer the law of nations; (3) where the above-mentioned sources fail to furnish any rule, the dictates of right, reason, and natural justice; (4) the municipal law of states, so far as it speaks with a concurring voice; (5) the concurring authority of jurists of established reputation who have made the law of nature and nations a special study. The main contention was tersely presented by Mr. Phelps in the following paragraph:

Much learning has been expended upon the discussion of the abstract question of the right of *mare clausum*. I do not conceive it to be applicable to the present case. Here is a valuable fishery, and a large and, if properly managed, permanent industry, the property of the nations on whose shores it is carried on. It is proposed by the colony of a foreign nation, in defiance of the joint remonstrance of all the countries interested, to destroy this business by the indiscriminate slaughter and extermination of the animals in question, in the open neighboring sea, during the period of gestation, when the common dictates of humanity ought to protect them were there no interest at all involved. And it is suggested that we are prevented from defending ourselves against such depredations because the sea at a certain distance from the coast is free. The same line of argument would take under its protection piracy and the slave trade when prosecuted in the open sea, or would justify one nation in destroying the commerce of another by placing dangerous obstructions and derelicts in the open sea near its coasts. There are many things that can not be allowed to be done on the open sea with impunity, and against which every sea is *mare clausum*; and the right of self-defense as to person and property prevails there as fully as elsewhere. If the fish upon Canadian coasts could be destroyed by scattering poison in the open sea adjacent, with some small profit to those engaged in it, would Canada, upon the just principles of international law, be held defenseless in such a case? Yet that process would be no more destructive, inhuman, and wanton than this. If precedents are wanting for a defense so necessary and so proper, it is because precedents for such a course of conduct are likewise unknown. The best international law has arisen from precedents that have been established when the just occasion for them arose, undeterred by the discussion of abstract and inadequate rules.

In developing their argument the American counsel pointed out that there were precedents in the actual practice of nations for exercising legislative power on the high sea, not alone by



international agreement, as for the suppression of piracy or the slave trade, and not merely belligerent rights of self-defense, as in the capture of vessels for carrying contraband of war or running a blockade, but perfectly analogous rights of self-protection, as instanced by hovering acts permitting interference with vessels hovering about a coast under a different flag for the purpose of smuggling, or engaging in illicit trade with a colony, or rescuing convicts, and also by quarantine laws forbidding an infected ship from approaching within 4 miles of a port. If it should be determined that the United States has a property right in the Alaskan seal herd, or in the individual seals, or in the industry that it maintains on the Pribylov Islands, it follows as a necessary consequence that it has the right to prevent the invasion and destruction of its property interests by pelagic sealing by the employment of such force as may be reasonably necessary to that end.

The British case denied that Russia had asserted any jurisdiction in Bering Sea beyond territorial limits, except in the ukase of 1821, from which she had retreated; asserted that Bering Sea was a part of the Pacific Ocean defined in the treaties of 1824 and 1825; claimed that seals were wild animals, which were no more property than fish when found in the high seas; and assumed that the law of nations, instead of following abstract ethical principles of natural justice or dealing with the general interests of mankind or questions of humanity to animals, was restricted to positive international engagements and rights established by the consent of the nations.

The Tribunal of Arbitration rendered its decision on Aug. 15, as follows:

We decide and determine as to the five points mentioned in Article VI, as to which our award is to embrace a distinct decision upon each of them:

As to the first of said five points, we, Baron de Courcel, John M. Harlan, Lord Hannen, Sir John S. D. Thompson, Marquis Emilio Visconti-Venosta, and Gregers W. W. Gram, being a majority of said arbitrators, do decide as follows:

By the ukase of 1821 Russia claimed jurisdiction in the sea now known as Bering Sea to the extent of 100 Italian miles from the coasts and islands belonging to her, but in the course of the negotiations which led to the conclusion of the treaty of 1824 with the United States and the treaty of 1825 with Great Britain, Russia admitted that her jurisdiction in said sea should be restricted so as to reach a cannon shot from shore. It appears that from that time up to the time of the cession of Alaska to the United States Russia never asserted in fact or exercised any exclusive jurisdiction in Bering Sea, or any exclusive rights to the seal fisheries therein beyond the ordinary limit of territorial waters.

As to the second of the five points, we, Baron de Courcel, John M. Harlan, Lord Hannen, Sir John S. D. Thompson, Marquis Emilio Visconti-Venosta, and Gregers W. W. Gram, being a majority of said arbitrators, decide and determine that Great Britain did not recognize or concede any claim upon the part of Russia to exclusive jurisdiction as to the seal fisheries in Bering Sea outside the ordinary territorial waters.

As to the third point, as to so much thereof as requires us to decide whether the body of water now known as Bering Sea was included in the phrase "Pacific Ocean" as used in the treaty of 1825 between Great Britain and Russia, we unanimously decide and determine that the body of water now known as Be-

ring Sea was included in the phrase "Pacific Ocean" as used in said treaty.

On the fourth point we decide and determine that all the rights of Russia to jurisdiction and to the seal fisheries passed to the United States, limited by the cession.

On the fifth point we, Baron de Courcel, Lord Hannen, Sir John S. D. Thompson, Marquis Emilio Visconti-Venosta, and Gregers W. W. Gram, being the majority of said arbitrators, decide and determine that the United States have no right to the protection of or property in the seals frequenting the islands of the United States in Bering Sea when the same are found outside the ordinary 3-mile limit.

And whereas the aforesaid determination of the foregoing questions as to the exclusive jurisdiction of the United States leaves the subject in such a position that the concurrence of Great Britain is necessary to the establishment of regulations for the proper protection and preservation of fur seals habitually resorting to Bering Sea, we, Baron de Courcel, Lord Hannen, Marquis Emilio Visconti-Venosta, and Gregers W. W. Gram, being a majority of the arbitrators, assent to the whole of the nine articles of the following regulations as necessary outside of the jurisdiction limits of the respective governments, and that they should extend over the waters hereinafter mentioned:

1. The United States and Great Britain shall forbid their citizens and subjects respectively to kill, capture, or pursue at any time or in any manner whatever the animals commonly called fur seals within a zone of 60 miles around the Pribylov Islands, inclusive of the territorial water, the miles being geographical miles, 60 to a degree of latitude.

2. The two governments shall forbid their citizens or subjects to kill, capture, or pursue in any manner whatever, during a season extending in each year from May 1 to July 31 inclusive, fur seals on the high sea in that part of the Pacific Ocean inclusive of Bering Sea situated north of the thirty-fifth degree of north latitude or eastward of the one hundred and eightieth degree of longitude from Greenwich until it strikes the water boundary described in Article I of the treaty of 1867 between the United States and Russia, following that line up to Bering strait.

3. During the period of time in the waters in which fur sealing is allowed only sailing vessels shall be permitted to carry on or take part in fur-sealing operations. They will, however, be at liberty to avail themselves of the use of such canoes or undecked boats, propelled by paddles, oars, or sails, as are in common use as fishing boats.

4. Each sailing vessel authorized to carry on fur sealing must be provided with a special license issued for the purpose by its Government. Each vessel so employed shall be required to carry a distinguishing flag prescribed by its Government.

5. The masters of vessels engaged in fur sealing shall enter accurately in an official log book the date and place of each operation, the number and the sex of the seals captured daily. These entries shall be communicated by each of the two governments to each other at the end of each season.

6. The use of nets, firearms, or explosives is forbidden in fur sealing. This restriction shall not apply to shotguns when such are used in fishing outside of Bering Sea during the season when such may lawfully be carried on.

7. The two governments shall take measures to control the fitness of the men authorized to engage in sealing. These men shall have been proved fit to handle with sufficient skill the weapons by means of which seal fishing is carried on.

8. The preceding regulations shall not apply to Indians dwelling on the coast of the territories of the United States or Great Britain, carrying on fur sealing in canoes or undecked boats not transported by or used in connection with other vessels and propelled wholly by paddles, oars, or sails, and manned by not more than 5 persons, in the way hitherto practiced by the Indians, provided that such Indians are not



employed by other persons, and provided that when so hunting in canoes or undecked boats the Indians shall not hunt fur seals outside the territorial waters under contract to deliver skins to anybody. This exemption is not to be construed to affect the municipal law of either country, nor shall it extend to the waters of Bering Sea or the waters around the Aleutian Islands. Nothing herein contained is intended to interfere with the employment of Indians as hunters or otherwise in connection with sealing vessels as heretofore.

9. The concurrent regulations hereby determined with a view to the protection and preservation of the fur seals shall remain in force until they have been wholly or in part abolished or modified by a common agreement between the United States and Great Britain. Said concurrent regulations shall be submitted every five years to a new examination, in order to enable both governments to consider whether in the light of past experience there is occasion to make any modification thereof.

The arbitrators made a special finding on the facts agreed upon by the agents of both governments with reference to the seizure of 14 British vessels in Bering Sea by the "Corwin" and "Rush," and the ordering of 3 others out of Bering Sea. The questions as to the value of the vessels seized, and as to whether any of them were the property of citizens of the United States, were withdrawn from the consideration of the tribunal, the United States not being estopped from raising them in subsequent negotiations.

The following declarations were suggested by the tribunal for the consideration of the governments of the United States and Great Britain, and appended to the award:

1. The arbitrators declare that the concurrent regulations as determined upon by the Tribunal of Arbitration by virtue of Article VII of the Treaty of the 29th of February, 1892, being applicable to the high sea only, should, in their opinion, be supplemented by other regulations applicable within the limits of the sovereignty of each of the two powers interested, and to be settled by their common agreement.

2. In view of the critical condition to which it appears certain that the race of fur seals is now reduced in consequence of circumstances not fully known, the arbitrators think fit to recommend both governments to come to an understanding in order to prohibit any killing of fur seals, either on land or at sea, for a period of two or three years, or at least one year, subject to such exceptions as the two governments might think proper to admit of. Such a measure might be resorted to at occasional intervals if found beneficial.

3. The arbitrators declare, moreover, that, in their opinion, the carrying out of the regulations determined upon by the Tribunal of Arbitration should be assured by a system of stipulations and measures to be enacted by the two powers, and that the tribunal must in consequence leave it to the two powers to decide upon the means for giving effect to the regulations determined upon by it.

**BLAINE, JAMES GILLESPIE**, an American statesman, born at Indian Hill Farm, Washington County, Pa., Jan. 31, 1830; died in Washington, D. C., Jan. 27, 1893. His father's farm was on the bank of Monongahela river, opposite the village of Brownsville. The house was of stone, built by Mr. Blaine's great-grandfather, and antedated the Revolutionary War. Mr. Blaine's maternal grandfather, Neal Gillespie, was a wealthy man, of fine education and wide influence. His great-grandfather on his father's side was Col. Ephraim Blaine, of Carlisle, Pa., a commissary-general in the Revolu-

tionary army from 1778 until its close in 1783. To his efforts Washington attributed the salvation of the army from starvation during the terrible winter at Valley Forge. James G. Blaine's father, also named Ephraim, was born in Carlisle. He was well educated, and was something of a traveler. When, after an extended tour in Europe, South America, and the West Indies, he went to Washington County, in 1818, he was owner of the largest landed estate in western Pennsylvania. In 1825 he deeded to the Economites the land on which they built their town.

James G. Blaine began his preparation for college with William Lyons, a brother of Lord Lyons, and a trained English student, and was drilled by his scholarly grandfather, Neal Gillespie, in his English studies, especially in his-



JAMES GILLESPIE BLAINE.

tory. When he was nine years old he knew Plutarch almost by heart. At the age of eleven he was sent to school at Lancaster, Ohio, where he lived in the family of his relative, the Hon. Thomas Ewing, then Secretary of the Treasury; and, when thirteen years old, to Washington College, Washington, Pa., where he was under the care of his uncle, Hon. John H. Ewing, Representative in Congress from that district. He led his class, and easily excelled, especially in mathematics and literature. But so much time did he give to play and athletic exercises that no one knew when he mastered his lessons. His early training, his wonderful memory, his quick grasp of the salient points, served him then, as they did afterward in the severer trials of intellect and statesmanship. This is the estimate of his college mates; but Mr. Blaine himself says that he was obliged to study hard, and was quiet and industrious. One of his college mates, afterward a Confederate general, says:

To the new boys and young freshmen Blaine was always a hero. To them he was uniformly kind, ever ready to assist and advise them, and to make smooth and pleasant their initiation into college life. His handsome person and neat attire, his ready sympathy and prompt assistance, his frank, generous nature, and his brave, manly bearing, made him the best-known, the best-loved, and the most popular boy at college. He was the arbiter among younger boys in all their disputes, and the authority with those of his own age on all questions.

He was graduated at the age of seventeen, delivering the English salutatory and an oration on "The Duty of the Educated American."

Meantime, in vacations, he was breaking colts on his father's farm and rowing on the beautiful streams of his native region. In response to an invitation to attend the Centennial celebration of Washington County, sent him in 1881, Mr. Blaine wrote:

It would be impossible to overestimate the beneficent and widespread influence which Washington and Jefferson College have exerted on the civilization of that great country between the Alleghenies and the Mississippi river. Their graduates have been prominent in the pulpit, at the bar, on the bench, and in the high stations of public life. During my service of eighteen years in Congress I have met a larger number of the alumni of Washington and Jefferson than of any other single college in the United States. It was inevitable that a country thus peopled should grow in strength, wisdom, and wealth. Its 60,000 inhabitants are favored far beyond the average lot of man. I have myself visited many celebrated spots in Europe and in America, and I have nowhere witnessed a more attractive sight than was familiar to my eyes in boyhood from the old Indian Hill Farm where I was born.

Identified as I have been for twenty-eight years with the great and noble people of another section of the Union, I have never lost any of my attachment for my native county and my native State. Wherever I may be in life or whatever my fortunes, the county of Washington, as it anciently was, taking in both sides of the Monongahela, will be sacred in my memory. I shall always recall with pride that my ancestry and kindred were and are not inconspicuously connected with its history, and that on either side of the beautiful river, in the Protestant and in the Catholic cemeteries, five generations of my own blood sleep in honored graves.

After graduation he went to Blue Lick, Ky., to take a professorship in the Western Military Institute. Here he met Miss Harriet Stanwood, of Maine, who was teaching in Millersburg, whom he afterward married. After a year or two of teaching, Mr. Blaine returned to Pennsylvania to study law, and during his course he contributed to the press and taught. For two years he was instructor in the Institution for the Blind at Philadelphia. His father had died in the meantime.

In 1853 Mr. Blaine and his wife went to reside in her native town, Augusta, Me, where Mr. Blaine purchased a half interest in the "Kennebec Journal," and became its editor. As a preparation for his work he studied the files of the newspaper from its beginning, and familiarized himself with the public matters of every county in the State. He edited the paper for four years, and Gov. Kent said of him:

Almost from the day of his assuming editorial charge of the "Kennebec Journal," at the age of twenty-three, Mr. Blaine sprang into a position of great influence in the politics and policy of Maine. At twenty-five he was a leading power in the councils of the Republican party, so recognized by Fessenden, Hamlin, and the two Morrills, and others then and still prominent in the State. Before he was twenty-nine he was chosen chairman of the Executive Committee of the Republican organization in Maine.

The youthful journalist attacked the penal and reformatory institutions of the State, giving dates and facts to support his charges, and Lot M. Morrill, who was Governor, in reply appointed Mr. Blaine commissioner to examine and report publicly upon their condition. Mr. Blaine visited not only those establishments, but

made careful examination of the methods of management in fifteen other States, and upon this information founded an elaborate report containing many practical suggestions for improvement, which, being adopted and enforced, worked great changes for the better, and put the institutions on a paying financial basis. He threw himself with ardor into the movement that resulted in the formation of the Republican party, and he was a delegate to the first national Republican convention.

In 1858 Mr. Blaine was elected to the State Legislature. After leaving the editorial chair of the "Journal," he accepted that of the "Portland Advertiser," although he continued to reside in Augusta. His first essay in book-making was a biography of Hon. Luther Severance, who founded the "Kennebec Journal," and was appointed minister to Hawaii in 1850.

In 1862 he was elected to Congress, and, as was his custom, spent the early part of his service in quiet and exhaustive study of the history and existing conditions of the interests then pending, which were among the most momentous in our annals, for the civil war was at its height. The most important matter considered by Congress during his first term was the raising of money to carry on the war, and one of his earliest speeches was in demonstration of the ability of the Government to carry it to a successful issue. In his "Twenty Years of Congress" he thus writes in reference to Mr. Lincoln's first proclamation of emancipation:

It was the final notice to those engaged in rebellion that every agency, every instrumentality would be employed by the Government in its struggle for self-preservation. It brought—as Mr. Lincoln intended it should bring—the seriousness of the contest to the hearts and consciences of the loyal States. . . . If the Administration was to be defeated, he was determined that defeat should come upon an issue that involved the whole controversy. If the purse of the nation was to be handed over to the control of those who were not ready to use the last dollar in the war for the preservation of the Union, the President was resolved that every voter in the loyal States should be made to comprehend the deadly significance of such a decision.

As a debater he had ready weapons. On one occasion, referring to his long quotations from a colleague, he said: "I have read a great deal from the Senator this morning, and shall read more before I get through." "Perhaps that will be the best part of your speech, except what you read from Webster," was interpolated. "I am obliged to the Senator for the exception," said Mr. Blaine; "it is equal to Dogberry's injunction, 'Put God first.'"

Mr. Blaine was re-elected to the Thirty-ninth Congress, and when he was returned to the Forty-first Congress so great had become his influence that he was unanimously chosen Speaker of the House. Probably no man who has occupied that post has gained wider reputation for his rulings or added more to his fame. By continual service there for six years he was largely cut off from debate or active part in the proceedings. In regard to the basis of representation upon which the late seceded States should return to the Union, Mr. Thaddeus Stevens, chairman of the committee, proposed that representation should be apportioned according to the number of legal



voters. Mr. Blaine earnestly urged that population was the true basis. He presented an amendment to the Constitution which provided that "representatives and direct taxes shall be apportioned among the several States which shall be included within this Union according to their respective numbers, which shall be determined by taking the whole number of persons, except those whose political rights or privileges are denied or abridged by the Constitution of any State on account of race or color." In favoring this plan, he said that while the other basis would accomplish the object of preventing the South from securing representation for the blacks unless the blacks were made voters, yet there would be a radical change in the apportionment for the Northern States, where the ratio of voters to population differed from 19 to 58 per cent. His proposition was substantially embodied in the Fourteenth Amendment to the United States Constitution.

When Mr. Stevens submitted his reconstruction bill, dividing the Southern States into five military districts, with the civil tribunal under military control, the majority were in its favor; but Mr. Blaine was earnest in his objections. He would subscribe to nothing that should not provide the methods by which the people of a State could, by their own action, re-establish civil government. He submitted an amendment embodying the idea that when any one of the States of the late Confederacy should assent to the fourteenth amendment to the Constitution, and should establish equal and impartial suffrage without regard to race or color, and when Congress should approve its action, it should be entitled to representation, and the provisions for military government should become inoperative. This plan, known as the Blaine amendment, was carried through the Senate, and then through the House, completing the Government's scheme of reconstruction.

In 1867 Mr. Blaine visited Europe, and on his return he found that the proposition to pay the public debt in greenbacks had obtained great favor. At the assembling of Congress he made a speech in opposition to it, being the first man in Congress to give expression to such views.

When the question of Government protection to our naturalized citizens abroad was brought up, through the arrest in England of Irish-Americans accused of complicity with the Fenian movement, Mr. Blaine maintained that the naturalized citizen was entitled to the same protection as the native-born, and through the attention called to the subject, Costello was released; and in 1870 a treaty was made with Great Britain, in which England abandoned her dictum "once a subject, always a subject," and accepted the American doctrine of equal rights for native and foreign-born citizens.

In February, 1876, while defending the cause of honest money against inflation of the currency, Mr. Blaine said:

Uncertainty as to the value of the currency from day to day is injurious to all honest industry. And while that which is known as the debtor interest should be fairly and generously considered in the shaping of measures for specie resumption, there is no justice in asking for inflation on its behalf. Rather there is the gravest injustice; for you must remember that there is a large class of most deserving

persons who would be continually and remorselessly robbed by such a policy. I mean the *labor* of the country, that is compelled to live from and by its daily earnings. The savings banks, which represent the surplus owned by the laborers of the nation, have deposits to-day exceeding \$1,100,000,000—more than the entire capital stock and deposits of the national banks. The pensioners, who represent the patriotic suffering of the country, have a capitalized investment of \$600,000,000. Here are \$1,700,000,000 of money incapable of receiving anything but instant and lasting injury from inflation. Whatever impairs the purchasing power of the dollar correspondingly decreases the resources of the savings-bank depositor and pensioner. The pensioner's loss would be absolute, but it would probably be argued that the laborer would receive compensation by his nominally larger earnings. But this would prove totally delusive, for no possible augmentation of wages in a time of inflation will ever keep pace with the still greater increase of price in the commodities necessary to sustain life, except—and mark the exception—under the condition witnessed during the war, when the number of laborers was continually reduced by the demand for men to serve in the army and navy. And those honest-minded people who recall the startling activity of trade, and the large profits during the war, and attribute both to an inflated currency, commit the error of leaving out the most important element of the calculation. They forget that the Government was a customer for nearly four years at the rate of \$2,000,000 or \$300,000 per day—buying countless quantities of all staple articles; they forget that the number of consumers was continually enlarging as our armed force grew to its gigantic proportions, and that the number of producers was by the same cause continually growing less, and that thus was presented, on a scale of unprecedented magnitude, that simple problem, familiar alike to the political economist and the village trader, of the demand being greater than the supply, and a consequent rise in the price. Had the Government been able to conduct the war on a gold basis, and provided the coin for its necessarily large and lavish expenditure, a rise in the price of labor, and a rise in the value of commodities, would have been inevitable. And the rise of both labor and commodities in gold would have been for the time as marked as in paper, adding, of course, the depreciation of the latter to its scale of prices. . . .

One great and leading interest of my own and other States has suffered, still suffers, and will continue to suffer so long as the currency is of irredeemable paper. I mean the shipbuilding and navigation interest—one that does more for the country and asks less from it than any other except the agricultural; an interest that represents our distinctive nationality in all climes and upon all seas; an interest more essentially and intensely American than any other that falls under the legislative power of the Government, and which asks only to-day to be left where the founders of the republic placed it a hundred years ago. Give us the same basis of currency that our great competitors of the British Empire enjoy, and we will, within the lifetime of those now living, float a larger tonnage under the American flag than was ever enrolled by one nationality since the science of navigation has been known among men. Aye, more, sir; give us the specie basis, and the merchant marine of America, sailing into all zones and gathering grain from all continents, will bring back to our shores its golden profits, and supply to us that coin which will steady our system and offset the drains that weaken us in other directions. But ships built on the paper basis can not compete with the lower-priced ones of the gold basis, and whoever advocates a perpetuity of paper money in this country confesses his readiness and willingness to sacrifice the navigation and commercial interests for all time.

From 1869 to 1876—the period of his Speakership—Mr. Blaine seldom left the chair to take



part in debate. But he made a conspicuous exception to this when he vacated the chair to oppose a faction of his own party, to whom he gave the name of "Stalwart," that were pushing a measure giving the President (Grant) the right to suspend the writ of *habeas corpus* at pleasure in the Southern States, and to use martial law in suppressing the Kuklux Klan.

His friend, H. J. Ramsdell, for twenty years a journalist of Washington, who saw his daily course as Speaker, says of that part of Mr. Blaine's career:

Even excluding all regard for the man, an enemy would have been fascinated and delighted, in spite of rancor, by the sheer intellectual force and perfect self-command displayed. The Speaker seemed born to preside over just such an assemblage as that in which he found himself. Patient in the tedious passages of debate and routine, courteous under harassing interruptions, impartial to friend and chivalric to foe, he rapidly rose with the rising tide of excitement and activity caused by important business or personal feeling, towering to his full height, his voice, with something of the ring of the clarion in it, penetrating

murders and crimes of Andersonville." In part he said:

I hear it said, "We will lift Mr. Davis again into great consequence by refusing amnesty." That is not for me to consider; I only see before me, when his name is presented, a man who, by the wink of his eye, by a wave of his hand, by a nod of his head, could have stopped the atrocity at Andersonville. Some of us had kinsmen there, most of us had friends there, all of us had countrymen there; and in the name of those kinsmen, friends, and countrymen, I here protest, and shall with my vote protest, against calling back and crowning with the honors of full American citizenship the man who organized that murder.

This debate strengthened Mr. Blaine's influence with his personal friends, but it also made bitter and relentless enemies. A rumor was set afloat that Mr. Blaine had received, for an unstated reason, \$64,000 of Union Pacific Railroad bonds, and stories of all sorts were rife. Mr. Blaine denied them all from his seat in the House, and made voluntary explanation of his



MR. BLAINE'S BIRTHPLACE, WEST BROWNSVILLE, PENNSYLVANIA.

the loudest tumult, the gavel in his practiced hand chiming in with varied tones that aptly enforced his words, from the sharp rat-tat-tat that recalled the House to decorum, to the vigorous thunder that actually drowned unparliamentary speech; rulings, reparation, translucent explanation flashing from his lips as quick as lightning, to the discomfiture of every assailant who tilted against him, until, with the whole House in full cry, the waves of debate rolling and surging around the base of the marble throne on which the Speaker is installed, he seemed, like the creature of Addison's imagination, to "ride the whirlwind and direct the storm."

When the final effort for universal amnesty was made Mr. Blaine moved that there should be one exception—Jefferson Davis; not because he was more guilty than many less conspicuous, but because he was the author, "knowingly, deliberately, guiltily, and willfully, of the gigantic

connection with the Little Rock and Fort Smith Railroad. Another attack was made in regard to Kansas Pacific bonds, and Mr. Blaine, after showing that the lawsuit which was the only basis for such charges was that of his elder brother, many years before, ended by saying:

Having now noticed the two that have been so extensively circulated, I shall refrain from calling the attention of the House to any others that may be invented. To quote the language of another: "I do not propose to make my public life a perpetual and uncomfortable flea hunt, in the vain effort to run down stories which have no basis in truth, which are usually anonymous, and whose total refutation brings no punishment to those who have been guilty of originating them."

But it was an era of "scandal" and "investigation," and the Opposition newspapers an-



nounced the finding of private letters to Fisher and Mulligan, fully sustaining their fresh charges in regard to the Northern Pacific Railroad. The committee called upon Mr. Blaine for the letters, and in reply he produced the opinion of two lawyers—a Democrat and a Republican—to the effect that the manuscripts were personal property, and could not be required. This raised a cry of concealment, and once more the matter became too serious to pass unnoticed. Again, rising in his place, he announced that, with all due respect to the House, he denied their assumption of right to demand his private correspondence, but added: "Thank Almighty God, I am not *ashamed* to show them. There they are. There is the very original package. And with some sense of humiliation, with a mortification that I do not pretend to conceal, with a sense of outrage which I think any man in my position would feel, I invite the confidence of forty-four millions of my countrymen while I read those letters from this desk."

He then read the letters, which had been picked from a correspondence of over fifteen years. After he had laid bare the confidential details of business embarrassments, which not once, with their proper context, were of a nature to incriminate him, he said: "The man did his worst, the very worst, he could out of the most intimate business correspondence of my life. I ask, gentlemen, if any of you—and I ask it with some feeling—can stand a severer scrutiny of, or a more rigid investigation into, your private correspondence?" After the reading was finished he turned to Mr. Knott, chairman of the Judiciary Committee, and said:

"Has the gentleman from Kentucky received a dispatch from Caldwell?" [Mr. Caldwell, who was abroad, was the only person who had perfect knowledge of the matter, and both parties had been seeking his address.]

"I will explain that directly," said Mr. Knott.

"I want a categorical answer."

"I have received a dispatch purporting to be from Mr. Caldwell."

"You did?"

"How did you know I got it?" queried Mr. Knott.

"When did you get it?" was the response. "I want the gentleman from Kentucky to answer when he got it."

"Answer my question first."

"I never heard of it until yesterday."

"How did you hear it?"

"I heard you got a dispatch last Thursday morning at eight o'clock from Josiah Caldwell, completely and absolutely exonerating me from this charge. You have suppressed it!"

Then followed one of the most extraordinary scenes of excitement ever witnessed in the House. Mr. Blaine's accusers used every means known to parliamentarians to prevent the carrying of his motion that the dispatch be brought out and filed with the rest of the papers; but so often did Mr. Blaine sweep away their work that at last one member rose to inquire whether this was the American Congress or a school in which they were pupils of the schoolmaster from Maine. The final result was a negative acquittal of Mr. Blaine.

This took place in June, 1876, and a few days later the Republican Convention met in Cincinnati to nominate a candidate for President. On the 11th, the Sunday preceding the convention,

Mr. Blaine fell unconscious upon the steps of the church of which he and his family were regular attendants; for two days he lay apparently between life and death, and the convention was thrown into confusion by the conflict of feeling thereby created. The illness has been popularly attributed to sunstroke. How far that, or the Mulligan and other scandals had influence, it is impossible to say, but the record of the convention reads: First ballot, Blaine, 285; Morton, 124; Bristow, 113; Conkling, 99; Hayes, 61; Hartranft, 58; Jewell, 11; Wheeler, 3. Hartranft's was the solid vote of Pennsylvania; Hayes's that of Ohio; Conkling's that of New York, save one; Morton's vote was from the South and Indiana; Bristow's from nineteen States and one Territory; Blaine's from twenty-eight States and seven Territories. On the second ballot Blaine had made a gain of 11. On the fifth ballot Michigan's vote was cast for Hayes. On the sixth it stood: Blaine, 308; Hayes, 113. The other candidates retired, and on the seventh the ballot stood: Hayes, 384; Blaine, 351; Bristow, 21. These were turned over to Hayes, and his nomination was then declared unanimous.

On the resignation of Senator Morrill, in order to accept the Secretaryship of the Treasury under President Hayes, Mr. Blaine was chosen to fill out his unexpired term in the Senate, and he was re-elected for the following term. In common with a majority of Republicans, Mr. Blaine had opposed the formation of the electoral commission for the settlement of the Hayes and Tilden dispute, on the ground that Congress did not possess the power that it proposed to confer on the commission. Later, after that commission had resulted in the inauguration of Mr. Hayes, Mr. Blaine opposed his Southern policy because, as he claimed, the title of the governors whom Mr. Hayes removed rested upon the same returns as his own.

While still in the House, Mr. Blaine had made an exhaustive argument against an irredeemable paper currency, and in the Senate he took strong ground against the deterioration of the silver coinage. In the opening of a speech he said:

If there was any one principle that was rooted and grounded in the minds of our earlier statesmen, it was the evil of paper money; and no candid man of any party can read the Constitution of the United States and not be convinced that its framers intended to protect and defend our people from the manifold perils of an irredeemable currency. Nathaniel Macon, one of the purest and best of American statesmen, himself a soldier of the Revolution and a member of Congress continuously during the administration of our first six Presidents, embracing in all a period of nearly forty years, expressed the whole truth when he declared in the Senate that "this was a hard-money government, founded by hard-money men, who had themselves seen and felt the evil of paper money, and meant to save their posterity from it."

In 1878, Mr. Blaine advocated the establishment of a line of mail steamers to Brazil. The whole subject of American shipbuilding and commerce was one to which he devoted special energy, and he introduced two amendments favoring naval retrenchment in the interests of a merchant marine. He said in part:

From 1846-'71 the Congress of the United States passed 91 acts for promoting the building of railroads. There has not been much legislation since 1871.

There has been a reaction against the policy; but from 1846-'71, I repeat, a period of twenty-five years, the Congress of the United States passed 91 different acts, and endowed the railroad system of this country with \$500,000,000 of money, and that \$500,000,000 of money produced more than \$5,000,000,000 of money in this country. My judgment is that the Congress of the United States in everything they did in that respect did wisely. They cheapened freights. Clinton's ditch, as it used to be called, was sneered at when it was an experiment; but the minute the water was let into it it reduced the freights that had been \$100 from Buffalo to New York down to \$7 a ton; and it is not an exaggeration to say that at that day, before railroads were among us, the water that was let in from Lake Erie to that canal added \$100,000,000 to the value of the farms west of it.

As individuals, cities, towns, counties, States, a nation, we have exerted ourselves to the utmost point of enterprise and vigor to build up railroads. We have a system that outruns all the world, and with great trunk lines threading the continent—north, south, east, and west—in every direction. The very moment we reach the ocean limit we seem to think we have done our duty, and that when we have got transportation to that point it no longer interests us, and we can safely give that over to the foreigner. Why, from Chicago to Liverpool is one direct line. I wonder how it would sound if Mr. Vanderbilt—who is running a line of steamships manned by foreign men, commanded by foreign officers, built in foreign yards, whose money earnings go entirely outside of this country—were to apply that to the New York Central Railroad, and select all the brakemen, and switchmen, and conductors, and tenders, and officers on the Central Railroad from foreigners, to put on it locomotives that are all made in England, to let all its earnings be exported. Such a policy would not be one particle more detrimental and destructive to the interests of this country than for us, when that Central Railroad had touched salt water with all the countless products of the fertile West, to give up all the profits of participation in the transportation of them beyond. From Chicago to Liverpool is a route of 4,000 miles. We operate 1,000 miles of it, and give 3,000 miles to the foreigner.

Two years later, in urging the granting of subsidies in support of shipbuilding and American commerce on the high seas, he said, in one of his most elaborate speeches:

Mr. President, *fas est ab hoste doceri*; it is always lawful to be taught by an enemy. Great Britain has been our great commercial rival, and since the first Cunard steamship came into Boston—just about forty years ago, when Great Britain, seeing that steam was to play so great and commanding a part in the navigation of the world, first made her venture—from that time down to the close of 1878 she had paid from her treasury, to aid great steamship lines all over the world, a sum exceeding £40,000,000, more than 200,000,000 American dollars. I know it is a favorite argument with those who occupy the position of the honorable Senator from Kentucky, that Great Britain started upon this plan and followed it for a long period of years, and afterward abandoned it. Sir, she has never abandoned it. She has only abandoned its extension to those lines that were strong enough to go alone, and the British post-office report for the year 1879 shows that under the despised and ridiculed head of postal aid, to which the honorable Senator from Kentucky was pleased to refer with such sneers, Great Britain paid last year £783,000, well-nigh \$4,000,000 in coin.

France gets her steamships from England. France has adopted the commercial policy which the honorable Senator from Kentucky thinks would be the revival of the American shipping interest; but does France, by the mere fact of getting her ships built at Birkenhead or on the Clyde, abandon the plan, which

has been for thirty years in operation under her Government, of aiding her ships? Why, sir, last year France paid 23,000,000 francs—more than \$4,500,000—to aid her steamship lines. And when the celebrated line of France, the company known as Messageries Imperiales, competed too sharply in the Mediterranean waters after the opening of the Suez Canal, when that great French company competed with the Peninsular and Oriental Company of England, and was likely to endanger its supremacy by a sharp rivalry, Great Britain promptly stepped forward and added £100,000 to the Peninsular and Oriental subsidy. That is the way Great Britain has abandoned the idea of aiding her great commercial interests!

The United States can not succeed in this great international struggle without adopting exactly the same mode that has achieved victory for France. What is it? It is not to help A B, or C D, or E F, or anybody else by name—neither Mr. John Roach, nor Mr. John Doe, nor Mr. Richard Roe—but to make a great and comprehensive policy that shall give to every company a pledge of aid from the Government of so much per mile for such a term of years. Let the American merchants feel that the Government of the United States is behind them. Let the United States take from her Treasury per annum the \$4,000,000 that Great Britain is paying as a postscript to her \$200,000,000 of investment; let the United States but take \$400,000 per annum—and that is not a great sum for this opulent country—let that be used as a fund to stimulate any company from any port of the United States to any foreign port, and, without being a prophet or the son of one, I venture to predict that you will see that long-deferred, much-desired event—the revival of the American merchant marine.

It is idle to fight against the inventions of the world; it is idle for us to fold our arms and suppose that wooden vessels are to maintain anything like the importance they have hitherto had in the commerce of the world. I think I understand something of that subject. I have the honor to be from the State that has built more wooden vessels than all the rest of this Union beside, I believe. Within thirty miles of my own residence is a town of only 10,000 people, which is the largest wooden shipbuilding place on the globe to-day. I know some little of that subject; and while the days of wooden ships are by no means over, while they will be a great and needful auxiliary in the commerce of the world, yet it is manifest and is proven that the great highways of international commerce—such as the North Atlantic, the West India seas, the route from San Francisco to Asia, that from San Francisco to Melbourne, and in various, and sundry, and divers other directions—will be occupied, and occupied almost to the exclusion of sailing vessels, by the ocean steamers. The United States can take a great part in that race; they can take a great part in it just whenever they make up their mind that the instrumentality by which England conquered is the one which we must use; they can take it whenever they make up their minds that a mercantile marine and naval establishment must grow and go together hand in hand, and that the Congress of the United States is derelict in its duty if it passes another naval appropriation bill without accompanying it, in some form, with some wise and forecasting provision looking also to the upbuilding of the American merchant marine.

On Dec. 11, 1878, Mr. Blaine made a memorable speech in defense of the purity of the ballot. He had introduced a resolution providing for inquiry into certain alleged frauds in elections recently held in Southern States. In sustaining his resolution, he said:

The issue thus raised before the country, Mr. President, is not one of mere sentiment for the rights of the negro—though far distant be the day when the rights of any American citizen, however black or however poor, shall form the mere dust of the balance in any controversy; nor is the issue one that involves the



waving of the "bloody shirt," to quote the elegant vernacular of Democratic vituperation; nor, still further, is the issue as now presented only a question of the equality of the black voter of the South with the white voter of the South. The issue, Mr. President, has taken a far wider range, one of portentous magnitude; and that is, whether the white voter of the North shall be equal to the white voter of the South in shaping the policy and fixing the destiny of this country; or whether, to put it still more baldly, the white man who fought in the ranks of the Union army shall have as weighty and influential a vote in the government of the republic as the white man who fought in the ranks of the rebel army. The one fought to uphold, the other to destroy, the Union of the States; and to-day he who fought to destroy is a far more important factor in the Government of the nation than he who fought to uphold it.

Let me illustrate my meaning by comparing groups of States of the same representative strength North and South. Take the States of South Carolina, Mississippi, and Louisiana. They send 17 Representatives to Congress. Their aggregate population is composed of 1,035,000 whites and 1,224,000 colored, the colored being nearly 200,000 in excess of the whites. Of the 17 Representatives, then, it is evident that 9 were apportioned to these States by reason of their colored population, and only 8 by reason of their white population; and yet in the choice of the entire 17 Representatives the colored voters had no more voice or power than their remote kindred on the shores of Senegambia or on the Gold Coast. The 1,035,000 white people had the sole and absolute choice of the entire 17 Representatives. In contrast, take 2 States in the North, Iowa and Wisconsin, with 17 Representatives. They have a white population of 2,247,000—considerably more than double the entire white population of the 3 Southern States I have named. In Iowa and Wisconsin, therefore, it takes 132,000 white population to send a Representative to Congress, but in South Carolina, Mississippi, and Louisiana every 60,000 white people send a representative. In other words, 60,000 white people in those Southern States have precisely the same political power in the government of the country that 132,000 white people have in Iowa and Wisconsin.

The patent, undeniable intent of the fourteenth amendment was that if any class of voters were denied or in any way abridged in their right of suffrage, then the class so denied or abridged should not be counted in the basis of representation; or, in other words, that no State or States should gain a large increase of representation in Congress by reason of counting any class of population not permitted to take part in electing such Representatives. But the construction given to this provision is that before any forfeiture of representation can be enforced the denial or abridgment of suffrage must be the result of a law specifically enacted by the State. Under this construction every negro voter may have his suffrage absolutely denied or fatally abridged by the violence, actual or threatened, of irresponsible mobs, or by frauds and deceptions of State officers from the governor down to the last election clerk, and then, unless some State law can be shown that authorizes the denial or abridgment, the State escapes all penalty or peril of reduced representation. This construction may be upheld by the courts, ruling on the letter of the law, "which killeth," but the spirit of justice cries aloud against the evasive and atrocious conclusion that deals out oppression to the innocent and shields the guilty from the legitimate consequences of willful transgression.

The political power thus appropriated by Southern Democrats by reason of the negro population amounts to 35 Representatives in Congress. It is massed almost solidly and offsets the great State of New York; or Pennsylvania and New Jersey together; or the whole of New England; or Ohio and Indiana united; or the combined strength of Illinois, Minnesota, Kansas, California, Nevada, Nebraska, Colorado, and Oregon.

The seizure of this power is wanton usurpation; it is flagrant outrage; it is violent perversion of the whole theory of republican government. It inures solely to the present advantage, and yet, I believe, to the permanent dishonor of the Democratic party. It is by reason of this trampling down of human rights, this ruthless seizure of unlawful power, that the Democratic party holds the popular branch of Congress to-day, and will, in less than ninety days, have control of this body also, thus grasping the entire legislative department of the Government through the unlawful capture of the Southern States.

In May, 1879, when the debate on the Appropriation bill ran into a discussion of the question of national and State sovereignty, Mr. Blaine made a speech, in the course of which he said:

I do not think the evil that has been done to the Southern country by the schoolbooks in the hands of their children has been measured. Many of the books put into the hands of the rising generation of the South are tinctured all through with prejudice and misrepresentation and with a spirit of hatred. We are accused by our friends on the opposite side of the Chamber of stirring up strife and generating hatred. I do not believe it would be possible to find, in all the literature of the North for the schools and for the young, a solitary paragraph intended or calculated to arouse hatred or suggest unpatriotic feelings toward any portion of the Union. A large portion of the South has been furnished with special schoolbooks calculated for the meridian, with the facts appended to suit that particular locality. It was said that for two generations a large portion of the English people believed that the American colonies had never achieved their independence, but had been kicked off as a useless appendage to the British Empire, and that they were glad to be rid of us. There is a large number of the school children in the South who are educated with radically wrong notions and radically erroneous facts. I saw an arithmetic that was filled with examples—think of putting politics into an arithmetic!—such as this: If 10 cowardly Yankees had so many miles the start, and 5 brave Confederates were following them, the first going at so many miles an hour, and the others following at so many miles an hour, how long before the Yankees would be overtaken? Now, think of putting that deliberately in a schoolbook, and having school histories made up on that basis for children! . . . Throughout the length and breadth of the South the one evil omen of to-day is the literature that is given to the children and the intellectual food that is offered to all the young and rising men in the institutions of learning, in their academies, their colleges, their universities. . . . Every step has been taken since the Democratic party got into power in the House and in the Senate in one direction, and that direction has been to the striking down of the Federal power and the exaltation of the State power. This measure is but one. Others have gone before it; others are to follow it. What may be their fate I do not know. We on this side will resist by every constitutional means, and you on that side, despite the threats of the Senator from Connecticut, will be obliged to submit in the end, and the power of this Government will not be put down by a threat; it will not be put down by a combination; it will not be put down by a political party. It was not put down by a rebellion. It can meet another, either in the form of organized resistance in withholding supplies, or in the more serious form which the language of the Senator from South Carolina seemed to foreshadow.

Mr. Blaine supported the bill favoring the exclusion of Chinese immigrants, and some of his reasons are given in a memorable speech. After declaring that Chinese immigration was not, in the proper sense of the word, immigration at all—that it was a congregating in our towns of masses



of low and vile men and women who did not and could not assimilate with our people—he said :

Is it not inevitable that a class of men living in this degraded and filthy condition, and on the poorest of food, can work for less than the American laborer is entitled to receive for his daily toil? Put the two classes of laborers side by side, and the cheap servile labor pulls down the more manly toil to its level. The free white labor never could compete with the slave labor of the South. In the Chinaman the white laborer finds only another form of servile competition—in some aspects more revolting and corrupting than African slavery. Whoever contends for the unrestricted immigration of Chinese coolies contends for that system of toil which blights the prospects of the white laborer—dooming him to starvation wages, killing his ambition by rendering his struggles hopeless, and ending in a plodding and pitiable poverty. Nor is it a truthful answer to say that this danger is remote. Remote it may be for Mr. Garrison, for Boston, and for New England, but it is instant and pressing on the Pacific slope. Already the Chinese male adults on that coast are well-nigh as numerous as the white voters of California, and it is conceded that a Chinese emigrant can be placed in San Francisco for one half the amount required to transport a man from the Mississippi valley to the Pacific coast, and for one third what it requires for a New Yorker or New Englander to reach California or Oregon. The late Caleb Cushing, who had carefully studied the Chinese question ever since his mission to Peking in 1842, maintained that unless resisted by the United States the first general famine in China would be followed by an emigration to California that would swamp the white race.

A great deal has been said about the danger to our trade if China should resort to some form of retaliation. The natural and pertinent retaliation is to restrict American immigration to China. Against that we will enter no protest, and should have no right to do so. The talk about China closing her ports to our trade is made only by those who do not understand the question. Last year the total amount of our exports to all Chinese ports, outside of Hong-Kong, was but \$692,000. I have called Hong-Kong a Chinese port, but every child knows that it is under British control, and if we were at war with China to-day Hong-Kong would be as open to us as Liverpool. To speak of China punishing us by suspending trade is only the suggestion of dense ignorance. We pay China an immense balance in coin, and probably we always shall do it. But if the trade question had the importance which some have erroneously attributed to it, I would not seek its continuance by permitting a vicious immigration of Chinese coolies. The Bristol merchants cried out that commerce would be ruined if England persisted in destroying the slave trade; but history does not record that England sacrificed her honor by yielding to the cry. There is not a laboring man from the Penobscot to the Sacramento who would not feel aggrieved, outraged, burdened, crushed, by being forced into competition with the labor and the wages of the Chinese coolie. For one, I will never consent by my vote or my voice to drive the intelligent workingmen of America to that competition and that degradation.

In 1880 Mr. Blaine was again a candidate for the Republican presidential nomination. In the convention he had 284 votes on the first ballot, against 304 for Gen. U. S. Grant and 93 for Senator John Sherman. He held nearly this number until on the thirty-sixth ballot, when the opponents of Gen. Grant united on James A. Garfield, who was nominated.

Mr. Blaine was chosen by President Garfield for Secretary of State, and in accepting sent the following letter:

Your generous invitation to enter your Cabinet as Secretary of State has been under consideration for more than three weeks. The thought had really never occurred to my mind, until at our last conference you presented it with such cogent arguments in its favor, and with such warmth of personal friendship in aid of your offer. I know that an early answer is desirable, and I have waited only long enough to consider the subject in all its bearings, and to make up my mind definitely and conclusively. I



MR. BLAINE'S RESIDENCE, AUGUSTA, MAINE.

now say to you, in the same cordial spirit in which you have invited me, that I accept the position. It is no affectation for me to add that I make this decision not for the honor of promotion it gives me in public, but because I think I can be useful to the country and to the party—useful to you as the responsible leader of the party and the great head of the Government.

I am influenced somewhat, perhaps, by the shower of letters I have received urging me to accept, written to me in consequence of the mere unauthorized newspaper report that you had been pleased to offer me the place. While I have received these letters from all sections of the Union, I have been especially pleased, and even surprised, at the cordial and widely extended feeling in my favor throughout New England, where I had expected to encounter local jealousy, and, perhaps, rival aspirations. In our new relation, I shall give all that I am, and all that I can hope to be, freely and joyfully to your service. You need no pledges of my loyalty in heart and act. I should be false to myself did I not prove true both to the great trust you confide to me and to your own personal and political fortunes in the present and the future.

Your administration must be made brilliantly successful, and strong in the confidence and pride of the people, not at all directing its energies for re-election, and yet compelling that result by the logic of events,



and by the imperious necessities of the situation to that most desirable consummation. I feel, next to yourself, I can possibly contribute as much influence as any other man. I say this not from egotism or vainglory, but merely as a deduction from a plain analysis of the political forces which have been at work in the country for two years past, and which have been significantly shown in two great conventions. I accept it as one of the happiest circumstances connected with this affair, that in allying my political fortunes with yours—or, rather, for the time, merging mine in yours—my heart goes with my head, and that I carry to you not only political support, but personal and devoted friendship. I can but regard it as somewhat remarkable, that two men of the same age, entering Congress at the same time, influenced by the same aims, and cherishing the same principles, should never for a single moment in our eighteen years of close intimacy have had a word of coolness, and that our friendship has steadily grown with our growth and strengthened with our strength. It is this fact that has led me to the conclusion embodied in this letter, for however much, my dear Garfield, I might admire you as a statesman, I would not enter your Cabinet if I did not believe in you as a man and love you as a friend.

One of the earliest acts of the new Secretary was to favor the calling in Washington of a congress of delegates from the nations dwelling on this continent, with a view to advancing the interests of all. War was then raging between Chili and Peru, and one object was to suggest some method by which a peaceful adjustment could be made. The official call, dated Nov. 29, 1881, contained this passage, the gist of the whole matter:

The President extends to all the independent countries of North and South America an earnest invitation to participate in a general congress, to be held in the city of Washington on the 24th day of November, 1882, for the purpose of considering and discussing the methods of preventing war between the nations of America. He desires that the attention of the congress shall be strictly confined to this one great object; that its sole aim shall be to seek a way of permanently averting the horrors of cruel and bloody combat between countries oftenest of one blood and speech, or the even worse calamity of internal commotion and civil strife; and that it shall regard the burdensome and far-reaching consequences of such struggles, the legacies of exhausted finances, of oppressive debt, of onerous taxation, of ruined cities, of paralyzed industries, of devastated fields, of ruthless conscription, of the slaughter of men, of the grief of the widow and the orphan, of embittered resentments that long survive those who provoked them, and heavily afflict the innocent generations that come after.

The President is especially desirous to have it understood that, in putting forth this invitation, the United States does not assume the position of counseling, or attempting, through the voice of the congress, to counsel, any determinate solution of existing questions which may now divide any of the countries of America. Such questions can not properly come before the congress. Its mission is higher. It is to provide for the interests of all in the future, not to settle the individual differences of the present.

The invitation to this congress had been accepted by all but two of the recognized powers in North and South America, when Mr. Blaine's retirement from the Secretaryship, consequent upon the death of President Garfield and the reversal of his policy by his successor, caused it to be abandoned.

Besides the attempt to help peaceful relations in general, and to assist in commercial communications, Mr. Blaine, for the Government, dis-

patched William Henry Trescott on a special mission to Peru, to offer the friendly services of the United States in restoring peace and helping Peru in her prostrating defeat by Chili. These negotiations also were broken up. Another important move was an attempt to bring about a modification of the Clayton-Bulwer treaty with England. The Colombian republic had proposed to England that they should unite in guaranteeing the neutrality of the Panama Canal. Mr. Blaine, in a circular letter, declared the opposition of this Government to any such concerted action, and asserted prior and paramount rights. He showed that the United States had a treaty, made in 1846, with New Granada (now Colombia); that we had a supreme interest in watching over any highway between the two Americas; and that any disputing of that right by Great Britain would be deemed unfriendly. He proposed the abrogation of certain clauses of the Clayton-Bulwer treaty, as not in harmony with the more recent rights bestowed upon the United States by the agreements with the Colombian republic. When the British Government replied that the treaty should be maintained and respected, Mr. Blaine showed that it could not be considered as a final decision because it had been repeatedly the subject of negotiation between the two countries; that the British Government had itself proposed to refer its doubtful clauses to arbitration; and that its unsettled condition had previously been a source of embarrassment. Mr. Blaine contended that "it is the fixed purpose of the United States to consider the Isthmus-Canal question as an American question, to be dealt with and decided by the American governments."

Four months after entering upon office, President Garfield was mortally wounded by an assassin, and during the two months which he lingered Mr. Blaine was practically at the head of the Government. One of his notable efforts in public speaking was his eulogy upon President Garfield, pronounced before Congress, Feb. 27, 1882.

On his retirement from the Cabinet, Mr. Blaine returned to his home in Augusta, Me., and occupied himself with writing a history of the American Congress, from Lincoln to Garfield. To a proper understanding of matters much retrospect was required, and the two large volumes, entitled "Twenty Years of Congress," contain an epitome of the acts of that body since its formation.

In 1884 Mr. Blaine was the choice of the Republican convention as its candidate for President, Gen. John A. Logan being on the ticket with him. It was a memorable convention, one of its dramatic incidents being a telegram from Gen. William T. Sherman, whose name was so prominently mentioned at first that there was little doubt that he would have been the choice. It read: "I would not accept the nomination if tendered me. I would not serve if I was elected." The first ballot gave Mr. Blaine 334½; the second, 349; the third, 375; the fourth, 541—necessary to a choice, 411. The wild enthusiasm which through the later part of Mr. Blaine's public life greeted every mention of his name outdid itself on the occasion of this announcement. Whatever may be said of any other great American leader, from Washington to the present time, no one will deny that, for some reason, no other

American has been able to awaken the expression of personal popularity to the extent to which it was called forth by Mr. Blaine.

The Democratic party nominated Grover Cleveland. The campaign was one of great bitterness, full of personalities and strong recriminations. Mr. Blaine made a remarkable series of addresses, speaking continuously for forty-three days. He discussed only the industrial question, and in an array of arguments favoring protection produced a profound impression as to his intellectual power. The result turned upon the vote in New York State, which gave Mr. Cleveland 1,047 more votes than Mr. Blaine. When the news of his defeat reached Mr. Blaine he made a speech to his fellow-citizens that rang through the country, though it was but a repetition of his utterances in Congress in previous years. The gist of it lay in the declaration that in the solid South there had been no real election.

Mr. Blaine spent the next winter in Washington. He was not in public life, but devoted his leisure to his historical work, "Twenty Years of Congress," the first volume of which was published at that time.

In 1886 Mr. Blaine took an active interest in the political canvass in his own State of Maine, giving especial attention to the fisheries controversy, which had been renewed by the seizure of American fishing vessels on the coast of Canada. Meantime his health had become somewhat impaired, and he went abroad.

When the National Republican Convention met, in 1888, at Chicago, Mr. Blaine's name was so prominently used, and he was personally so strongly urged to allow it to be used, that only an authoritative message from Italy caused his supporters to desist. Benjamin Harrison was nominated and elected, and on his inauguration he called Mr. Blaine to the Cabinet as Secretary of State.

The first matters that occupied the State Department were connected with a conference held in Washington by representatives of all the independent governments of North and South America, and a conference of 26 nations concerning rules and regulations governing vessels at sea, and the adoption of a uniform system of marine signals. (See "Annual Cyclopædia" for 1889, page 440.) As a result largely of Mr. Blaine's suggestions, the McKinley tariff measure, passed by Congress, was supplemented by treaties of reciprocity in trade with the following nations: Costa Rica, Brazil, Spain for Cuba, Germany, Austro-Hungary, France, Santo Domingo, the 5 coffee republics of Central America, British Guiana, and all the British West Indies except the Bahamas. In regard to these measures Mr. Harrison said in his message, Dec. 1, 1890:

Experience has shown that some treaties looking to reciprocal trade have failed to secure a two-thirds vote in the Senate for ratification, and others, having passed that stage, have for years awaited the concurrence of the House and Senate, in such modifications of our revenue laws as were necessary to give effect to their provisions. We now have the concurrence of both Houses in advance, in a distinct and definite offer of free entry to our ports of specific articles. The Executive is not required to deal in conjecture as to what Congress will accept. Indeed, this reciprocity provision is more than an offer. Our part of the bargain is complete; delivery has been made; and when the

countries from which we receive sugar, coffee, tea, and hides have placed on their free lists such of our products as shall be agreed upon as an equivalent for our concession a proclamation of that fact completes the transaction.

The other important matters in which Mr. Blaine was prominent were concerning the seal-fisheries dispute; the recognition of a republic in Brazil; the lynching of Italians, American citizens, in New Orleans, for which the Italian Government demanded reparation; the civil war with Chili; and a question raised by Spain concerning the rights of American citizens in the Caroline Islands.

In March, 1891, Mr. Blaine proposed, as a *modus vivendi* that would prevent the destruction of the fur seals of the Pribylov Islands by Canadian poachers before an agreement could be reached regarding the United States' claims, that a closed season should be declared for the summer of 1891. In April he put into form the demand of the United States before the arbitration committee agreed upon between the nations. A summary of the correspondence will be found in the "Annual Cyclopædia" for 1891, page 834. In his annual message, Dec. 9, 1892, the President said: "The work of the State Department during the last year has been characterized by an unusual number of important negotiations and by diplomatic results of a notable and highly beneficial character."

On June 4, 1892, Mr. Blaine suddenly resigned his portfolio of Secretary of State. Three days later the National Republican Convention met at Minneapolis, and once again Mr. Blaine's name was prominent among the candidates. There was much speculation as to the cause of his sudden withdrawal from the Cabinet, the reason assigned by himself being that there was no important pending legislation and he desired to rest.

Mr. Blaine's health failed rapidly. Most bitter domestic sorrows had come upon him, including the death of two sons. Though he was but a private citizen at the time of his death, President Harrison called upon Congress and all in official life at Washington to do him special honor. For months the columns of the newspapers and magazines were filled with tributes, anecdotes, personal notices, pictures, and other evidences of the greatness of the man and the patriot who had passed away. See "Life of James G. Blaine," by H. J. Ramsdell.

**BOLIVIA**, a republic in South America. The legislative authority is vested in a Congress composed of the Senate and the Chamber of Deputies, the former consisting of 16 and the latter of 64 members. The executive power rests in the hands of a President, elected for four years by universal suffrage. The present incumbent of the chair is Mariano Baptista, elected for the term ending Aug. 6, 1896.

**Area and Population.**—The area of Bolivia is 567,360 square miles. The population in 1889 was estimated at 1,189,800.

**Finances.**—The revenue for 1892-'93 was estimated at 5,737,200 bolivianos or silver dollars, and the expenditure at 5,937,200 bolivianos. The internal debt in 1891 amounted to 4,484,916 bolivianos, and the external debt to 3,763,273 bolivianos.



**Commerce and Production.**—The leading industry is silver-mining. The produce of the mines in 1890 was about \$11,000,000 in value. Copper, tin, and bismuth are also mined for export. Other exports are coca, India rubber, cinchona, and coffee. The annual value of the imports is estimated at \$6,000,000, and that of the exports at \$9,000,000.

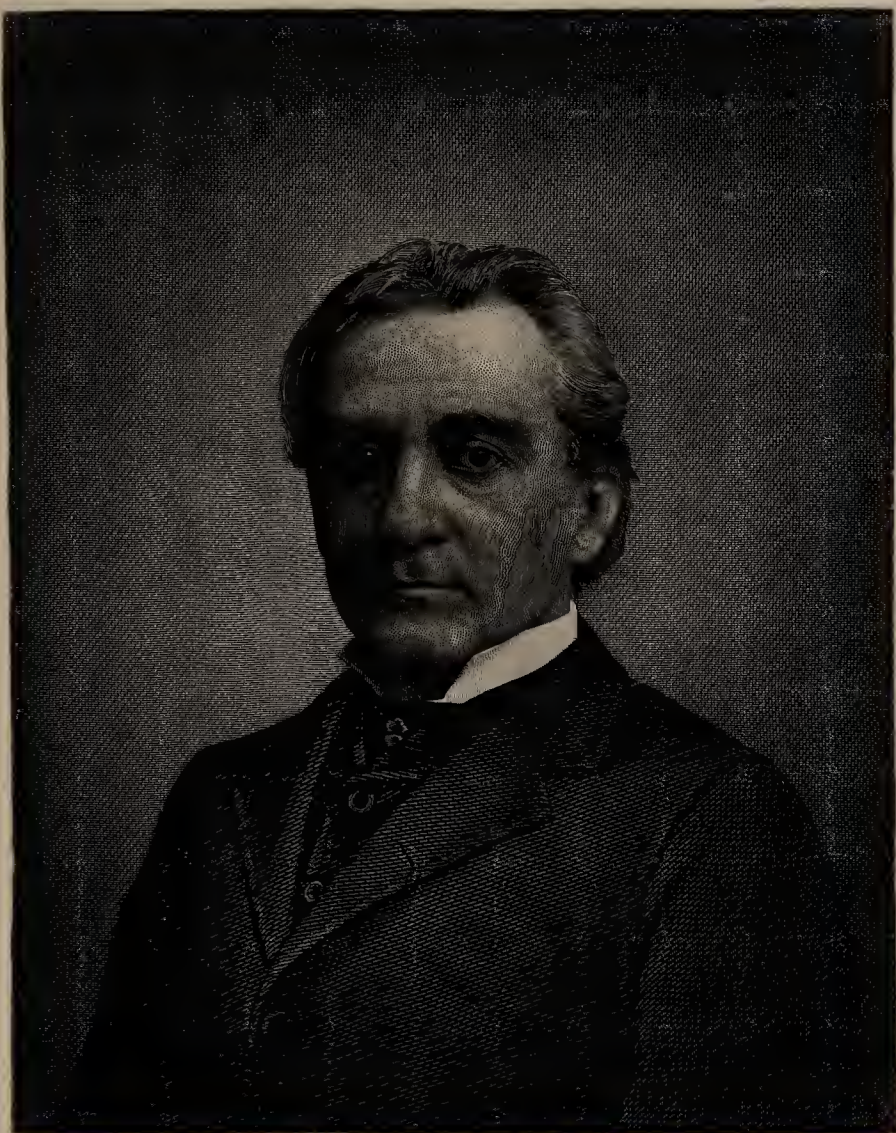
**Political Disturbance.**—In the early part of 1893 Gen. Camacho and exiled Bolivian Deputies were in Valparaíso, plotting an uprising for the overthrow of the Baptista Government. An attempted revolt was promptly suppressed, and the Government, after proclaiming a state of siege for the whole republic, stopped the publication of independent newspapers, and imprisoned their editors and all prominent members of the Opposition. Financial difficulties had placed the Government in a desperate strait, and it was only able to maintain itself by means of \$2,500,000 obtained from Chili in time to meet its pressing engagements, and 10,000 rifles sent by the Chilean Government to arm the Bolivian militia. When Baptista's position was thus made secure, the state of siege was raised, though it was continued longer in the State of Beni than elsewhere, and conditional amnesty was granted, the Government reserving the right to prosecute all who were implicated in the revolt.

**Treaty with Chili.**—Ex-President Aniceto Arce was sent to Santiago as a special ambassador to arrange a treaty of peace and alliance with the Chilean Government. He returned in the beginning of February with a treaty, which was ratified by the Bolivian Congress. By this, Bolivia, cutting the historical ties that bound her to Peru, becomes dependent upon Chili. Connected with this treaty were treaties of alliance also with Brazil and Paraguay. Chili agreed to cede to Bolivia a port on the Pacific, either Arica or Mollendo, and to equip, arm, and instruct the Bolivian national militia.

**BOOTH, EDWIN THOMAS**, American actor, born near Belair, Md., Nov. 13, 1833; died in New York city, June 7, 1893. He was the fourth son of the celebrated actor Junius Brutus Booth. From the elder Booth's custom of taking his son Edwin as a traveling companion and attendant, the youth acquired an early knowledge of the details of theatrical life and work and evinced a desire to become an actor. His father for a while disapproved of this purpose, but eventually allowed him to play some small parts. Edwin Booth's first appearance on the stage took place at the Boston Museum, Sept. 10, 1849, in the character of Tressel in "Richard III," his father playing Richard. His second appearance occurred later in the same month, when he played with his father, in Providence, R. I., the parts of Cassio in "Othello" and Wilford in "The Iron Chest." The desire to see father and son on the stage together afforded an opportunity for Edwin to make his first appearance before a New York audience, Sept. 27, 1850, when he played the same part of Wilford at the National Theater in Chatham Street. His second part before a New York audience was Hemey to his father's Pescara in "The Apostate." His first performance of the character of Richard III, undertaken suddenly

to fill his father's place at the latter's benefit, was in the same theater in 1851. His next engagement was in a Baltimore stock company at a salary of \$6 a week, where he went through some of the drudgery of his calling. For a short time thereafter he attended school in Baltimore, with which exception his education was acquired solely by undirected study of books and men. He went with his father to California in July, 1852. By this time he had fully determined to adopt the calling of an actor, and by the advice of his father he associated himself in a subordinate capacity with the stock companies managed by his elder brother Junius in the cities of San Francisco and Sacramento. When in the following October his father returned to the East he remained on the Pacific coast. There he endured the varying fortunes of a stock actor, diversified by an unprofitable trip to Australia and the Sandwich Islands, from which he returned in 1854. He was persuaded to undertake some of the leading Shakespearean rôles in San Francisco, and by the autumn of 1856 he had succeeded so well in gaining the favor of the public that he took the advice of some earnest friends and came East with the purpose of trying to assume the position left vacant by his father's death. Beginning in Baltimore in "Richard III," he played through the Southern cities, and was everywhere welcomed and honored as a worthy successor of his famous father. He appeared as Sir Giles Overreach at the Boston Theater, April 20, 1857, and the great success of that engagement established him firmly in reputation as one of the best tragic actors of his time. He went from Boston to New York and began an engagement at the Metropolitan Theater, May 4, 1857, in "Richard III." He played Richelieu, Sir Giles Overreach, Shylock, Lear, Romeo, Hamlet, Claude Melnotte, Sir Edward Mortimer, Petruchio, Iago, Othello, St. Pierre, Pescara, Lucius Junius Brutus, Don Cæsar de Bazan, and The Stranger, to the applause and delight of crowded audiences. With little variation this series of parts continued to be his repertory to the end of his life. After a second engagement at the Metropolitan, in New York, beginning Aug. 31, 1857, he made a tour through the South and West, where the triumphs of his metropolitan engagements were confirmed by the most generous appreciation. It is characteristic of Mr. Booth's gentle modesty of nature that it was only after he had been for several months firmly established in popular regard that he could be persuaded of his great success.

In 1858 he met, in the company of the Richmond Theater, the lady who became his first wife, Miss Mary Devlin. She was born in Troy, N. Y., in 1840, made her first appearance on the stage in that city in 1854, and was married to Mr. Booth in New York, July 7, 1860. In the autumn of 1861 Mr. Booth played at the Haymarket Theater, London, but the shadow of the impending civil war in the United States impeded his success there. His daughter Edwina was born at Fulham, near London, Dec. 9, 1861. He next played a very successful season at the Winter Garden Theater, New York, beginning Sept. 29, 1862. His wife died on Feb. 21, 1863, at their home in Dorchester,



Engr'd by H.B. Hall, Jr. New York

*John F. Kennedy*

D. Appleton & Co.





Mass., after a brief illness, and this blow caused Mr. Booth's retirement from the stage until the autumn. He returned to the Winter Garden Theater, of which he had become part owner, in "Hamlet," Sept. 21, 1863. During this season he played Bertuccio in "The Fool's Revenge" for the first time in New York. A notable event of the following year was the production of "Julius Cæsar," Nov. 25, 1864, with Edwin Booth as Brutus, and his brothers as Cassius and Marc Antony. The fact that the aged mother of the three brothers was present added a tender interest to the enthusiasm with which the performance was greeted. Edwin Booth next accomplished the memorable hundred nights' run of "Hamlet" at the Winter Garden Theater, Nov. 26, 1864, to March 22, 1865, after which he took the same play to the Boston Theater, where he was playing when the awful news of April 14 closed his public career at once and prostrated him with grief and shame. He left Boston, April 15, and for nearly a year lived in absolute seclusion at his home in New York city. Finally, however, he yielded to the persuasion of his friends that the American people wished him to resume his pre-eminent position upon the stage, and on Jan. 3, 1866, he came before them once more at the Winter Garden in "Hamlet." He was greeted with the warmest demonstrations of affection by a large and distinguished audience. On Feb. 1, 1866, a magnificent revival of "Richelieu" was inaugurated, and this was followed early in 1867 by a similarly wonderful production of "The Merchant of Venice." On Jan. 22, 1867, a gold medal, struck in commemoration of the great production of "Hamlet" in 1864, was presented to Mr. Booth on the stage of his theater, by a committee of distinguished citizens of New York. During the last week of this season, on the morning of March 23, the Winter Garden Theater with all its contents was destroyed by fire. There was no insurance, and Mr. Booth lost all his valuable wardrobe except one shoe, which happened to have been taken away to be mended. After the fire the blackened remains of a shoe buckle and the star of the order of the Elephant and Castle, which had been worn by John Philip Kemble in "Hamlet," were all that he recovered of a number of greatly prized mementoes of his father and of the older actors. This loss fell entirely upon Mr. Booth, as just before the fire he had bought the share of his partner, J. S. Clarke. But with undaunted energy he began immediately to effect arrangements for the building of a new and more perfect theater. The result was the structure known as Booth's Theater, at the corner of Twenty-third Street and Sixth Avenue, New York, the corner stone of which was laid April 8, 1868. After the destruction of his former theater the actor worked with the utmost vigor, playing his repertory in all the principal cities of the Union, and devoting his great earnings to the accomplishment of his intention to make the new theater a complete and permanent institution for the lasting glory of the American stage. During this period of hard work, in Chicago, in the autumn of 1867, Mr. Booth became engaged to Miss Mary Runnion, a stepdaughter of the well-known actor and manager, J. H. McVicker, known upon

the stage by the latter's name. They were married June 7, 1869, at Long Branch. Mrs. Booth had permanently retired from the stage before their marriage.

The new theater was opened with great public enthusiasm Feb. 3, 1869, presenting a grand production of "Romeo and Juliet," Edwin Booth playing Romeo, Edwin Adams Mercutio, and Miss McVicker Juliet. The stock company engaged by Mr. Booth for his theater comprised the ablest actors and actresses of their time. "Othello" was the next great production, April 12 to May 29, when Mr. Booth ceased to play, and the company continued with Edwin Adams at its head until July 31. Joseph Jefferson played "Rip Van Winkle" from Sept. 2 to Sept. 18, and other stars followed, supported by the stock company until Mr. Booth's return. On Jan. 5, 1870, he began his second and most magnificent revival of "Hamlet," which continued until March 19. A grand revival of "Richelieu" was given on Jan. 9, 1871, followed by "Much Ado about Nothing," in which Mr. Booth played Benedick for the first time in New York, March 6; "Othello" on the 20th of the same month, and "The Fool's Revenge" from April 3 to April 24, when Mr. Booth ceased playing, but directed the sumptuous production of "A Winter's Tale" by the company. The season closed July 4, and opened again Aug. 14, the company supporting a succession of the most famous stars, until Mr. Booth's reappearance in a revival of "Julius Cæsar," Dec. 25, 1871, which held the stage until March 16, 1872. During these productions Mr. Booth gave his personal attention to every detail of both artistic and mechanical work. He became sole owner of the theater in 1871, but the panic of 1873-'74 swept him into bankruptcy. He retired from management in June, 1873, and made an assignment in November following. Booth's Theater passed from his control, and after various changes of management it was closed, April 30, 1883, with a performance by Madame Modjeska of the same play with which it had been opened, "Romeo and Juliet." Soon afterward it was torn down, and a large business building was erected in its stead.

Mr. Booth at once set out to free himself from his embarrassments, and entered upon a series of engagements throughout the country, beginning at the Fifth Avenue Theater, New York, Oct. 25, 1875. During the early months of 1876 he made a tour of the Southern States and was greeted everywhere by crowds of delighted people. He went to California in August, 1876, arriving in San Francisco Sept. 5, exactly twenty years since he had left that city. There he played for eight weeks, during which the receipts amounted to \$96,000; and from Nov. 20, 1876, to Jan. 26, 1877, he played at the Lyceum (now the Fourteenth Street Theater) in New York. The profits of the work done by him from October, 1875, to May, 1877, enabled him to pay off all obligations entailed by the failure of Booth's Theater. The season of 1877-'78 saw him again at work as a strolling player. In January, 1878, he rented Booth's Theater and played there again, under his own management. In Chicago, where he began an engagement on April 14, 1879, he was shot at three times, while



alone on the stage in the last act of "Richard II," by a stage-struck lunatic. After a summer vacation he resumed work Oct. 6, 1879, at Ford's Opera House, Baltimore, and played two extremely profitable engagements in New York, closing there with a four weeks' season at Booth's Theater. He then arranged for another professional tour in Europe, and on the occasion of his departure was given a public breakfast at Delmonico's, New York, at which were assembled some of the most famous men of the country. He sailed June 30, 1880, accompanied by his wife and daughter. After a short period of pleasure-seeking travel he appeared in London, at the Princess's Theater, as Hamlet. His series of one hundred and nineteen nights at this theater was not as spontaneously patronized as were the plays of Henry Irving, who was then in the full tide of popularity. A very successful series of performances of "Othello" was given at the Lyceum Theater, then, as now, under the management of Mr. Irving, with Mr. Booth and the great English actor alternating Othello and Iago, May 2 to June 19. The illness of Mrs. Booth prevented the carrying out of a design to visit other cities in England, and Mr. Booth returned to New York about the end of June.

The season of 1881-'82 began at Booth's Theater, New York, Oct. 3, and was interrupted by the death of Mrs. Booth, Nov. 13, 1881. On May 31, 1882, he sailed again for England and fulfilled several engagements in the English provinces, beginning at Sheffield, Sept. 11, and closing at Birmingham, Dec. 16. On Dec. 27 he left London for Berlin, where he played at the Residenz Theater for four weeks to very enthusiastic and appreciative audiences. From Berlin he went to Hamburg, Hanover, and Bremen, and met with equally generous receptions. He appeared at the Stadt Theater, Vienna, March 30, and played to crowded audiences until April 7. At the close of each of his German engagements Mr. Booth was presented with a silver crown, wreath, or other tokens of regard, by the artists of the companies with which he played. His German engagement was one of the most successful and pleasant of his life. He returned to his home, which he had now established in Boston, and resumed work as a traveling star at the Globe Theater in that city, Nov. 5, 1883. The following season began at the Boston Museum Nov. 17, 1884. On May 7, 1885, he played "Macbeth" with Madame Ristori at the Academy of Music, New York.

In 1885-'86 he played only a short time. His daughter Edwina was married, May 16, 1885, to Mr. Ignatius Grossman, and his mother died in New York, Oct. 22, 1885, in her eighty-fourth year. Four performances were given at the Academy of Music, New York, April 26, 28, 30, and May 1, 1886, in which Booth and Salvini played together, the first as Hamlet and Iago and the second as Othello and the Ghost. During the summer of this year Mr. Booth entered into a business association with Lawrence Barrett, which continued without interruption until the latter's death. At Buffalo, N. Y., Sept. 13, 1886, Mr. Booth, supported by a company especially engaged by Mr. Barrett, who continued playing with his own company, began what proved to be his most profitable and extensive engagement.

The tour embraced the principal cities of the Union, from Boston to San Francisco, and from Minneapolis to San Antonio. During this tour he played Sir Giles Overreach and Richard III for the last time. The profits of the season, which closed May 15, 1887, were \$450,000. At Buffalo, Sept. 12, 1887, began the well-known association of Lawrence Barrett with Mr. Booth in the latter's repertory. They continued to play together throughout the country, with the usual vacation during the summer months, until Sept. 30, 1889, when Mr. Barrett resumed his place at the head of a separate company, and Madame Modjeska was associated with Mr. Booth's support during the season of 1889-'90, which closed on May 10, 1890, in Buffalo.

In January, 1888, Mr. Booth procured the incorporation of The Players, a club organized with the object of promoting social relations between actors and patrons of the drama. He endowed the club with the gift of a completely fitted clubhouse, No. 16 Gramercy Park, New York, in the purchase and furnishing of which he expended \$175,000. While he was playing an engagement at the Fifth Avenue Theater, New York, the house of The Players was opened by Mr. Booth and an assemblage of the ablest men of American dramatic, literary, artistic, and social life. It is notable that on this occasion the three then oldest living American actors were present—E. S. Conuor (1809-'91), John Gilbert (1810-'89), and James E. Murdoch (1813-'93).

While about to go upon the stage as Iago on the evening of April 3, 1889, at Rochester, N. Y., Mr. Booth was visited by a slight stroke of paralysis, which so impeded his articulation that he could not play. With a short rest his ailment yielded to treatment, and he rejoined his company at Cleveland, Ohio, April 15, and acted continuously for the remainder of the tour, which took him again to the Pacific coast, where the season ended at Portland, Ore., June 24, 1889.

Booth and Barrett were again seen together for seven weeks, beginning Nov. 3, 1890, in Baltimore, Philadelphia, Boston, and Providence, and after an interval of rest Mr. Booth resumed with Mr. Barrett at the Broadway Theater, New York, March 2, 1891. Mr. Barrett died suddenly on March 20, and Mr. Booth, whose health had grown very precarious, ceased acting—as it proved, forever—with a performance of "Hamlet" at the Academy of Music, Brooklyn, April 4, 1891. For two years he lived quietly in his home at The Players. On the morning of April 19, 1893, he was found unconscious in his bed, and thereafter he lingered with but brief periods of relief from pain until the early morning of June 7, when he passed away. A quiet funeral service, conducted by Right Rev. Henry C. Potter, took place at the Church of the Transfiguration, New York, on the morning of the 9th, and at sunset on the same day his remains were placed by the side of his first wife's, in Mount Auburn Cemetery, Boston. On Nov. 13, 1893, a memorial of his birthday was held, under the direction of the Board of Directors of The Players, in the Madison Square Garden Concert-hall, New York. Addresses in his honor were given by Joseph Jefferson, his successor in the presidency of the club, Parke Godwin, Henry Irving, and Tommaso Salvini; an elegy, composed for

the occasion, was read by its writer, Prof. George E. Woodberry, and the Symphony orchestra played the funeral music used by Booth in "Hamlet."

Edwin Booth's work was like his personal character—true, strong, and sincere. He hated all shams and pretenses with a gentle but firm and persistent intolerance. Nature endowed him with perfect physical qualities for the portrayal of elevated and inspiring emotions. His eyes were large, dark, and liquid, his face strong and mobile; his hair soft, black, and waving, and he wore it habitually long until age made it thin and gray. His form, erect and dignified in repose, was extremely graceful in movement. In the action of the various characters that he from time to time portrayed it is hard to say what quality contributed most to the gratification of the public—the perfect propriety of his art in "suiting the action to the word," or the melody and sweetness of voice with which he conveyed to the ear the words of passion or of affection. His power of voice was not greater than that bestowed upon the generality of men, but the judgment with which he used it made him easily the superior of actors to whom nature gave uncommon physical qualities. In his early stage life he excelled in the representation of strong and energetic passion as displayed in such parts as Othello, Iago, Richard III, Pescara, and Bertuccio; but the gentler and melancholy Hamlet gave his genius its fullest scope. He was never greatly attracted by love-making characters, and was therefore not often prevailed upon to play Romeo or Claude Melnotte. He was not fully confident of his powers in comedy, although he created much delight by his performances of Don Cæsar de Bazan and Petruccio. From the beginning of his career he was a careful student of pure diction, and to the last a peerless model of that inalienable attribute of acting. By his careful observance of the integrity of his mother tongue, and by his genius for riveting attention by appropriate and thought-compelling action, he owned and swayed that greatest of human gifts, the faculty of thrilling the heart to sympathy and admiration. Even when age, care, and illness had weakened his body and wearied his mind, he was always and truly great. If the fire and vigor of youth were missed in the acting of his latest years, it should not be forgotten that a tender and holy desire to help his fellow-players moved him to put aside his own inclination and so continue before the public after Nature and Fortune had beckoned him to rest.

**BRAZIL**, a republic in South America, formerly an empire. The Imperial Government was overthrown by a revolution on Nov. 15, 1889, and on the expulsion of the Emperor Dom Pedro II a Provisional Government was instituted by Marshal da Fonseca, which convened a national Congress elected by universal suffrage for the purpose of framing a Constitution. This met on Nov. 15, 1890, and the Constitution was proclaimed on Feb. 24, 1891. This established a federal republic in which each of the old provinces was constituted a State having power to administer its affairs at its own expense, without interference from the Federal Government except for the maintenance of order or the execu-

tion of the Federal laws. The Federal Senate is composed of 63 members, 3 from each State and 3 from the Federal District, elected for nine years, one third retiring every three years. The Chamber of Deputies has 205 members, 1 to every 70,000 of population, serving three years. The President and Vice-President of the republic are elected for four years; if both offices fall vacant within two years of the beginning of the term fresh elections must take place; but if the vacancy occurs later, the presidents of the two houses of Congress and of the Supreme Court succeed in their order to the office. The election of the President and Vice-President and of the members of both branches of Congress must be by the direct suffrage of all Brazilian male citizens of the age of twenty-one years who are registered voters and not paupers or illiterate, nor soldiers in active service, nor members of a monastic order subject to vows of obedience. On the enforced resignation of President Deodoro da Fonseca, Nov. 23, 1891, Floriano Peixoto, the Vice-President, became acting President for the remaining part of the term ending Nov. 15, 1894.

The Cabinet in the beginning of 1893 was composed of the following members: Minister of Commerce, Agriculture, and Public Works, Serzedello Correa; Minister of Finance, Dr. Rodrigues Alves; Minister of the Interior, Dr. Fernando Lobo; Minister of Foreign Affairs, Dr. Victorino Monteiro; Minister of War, Gen. Francisco de Moura; Minister of Marine, Rear-Admiral Custodio José de Mello. In January, 1893, Serzedello Correa became Minister of Finance, the portfolio of Commerce and Agriculture being conferred on Antonio Paulino Limpo de Abreu. At the same time Monteiro was succeeded as Minister of Foreign Affairs by Dr. Antonio Francisco de Paula Souza.

**Area and Population.**—The area of Brazil is 3,209,878 square miles, and the population is estimated at 14,000,000. About four elevenths of the population are whites, living mainly in the seaports. The mixed races are about as numerous. Of pure negroes, who preponderate in the States of Pernambuco, Bahia, Rio de Janeiro, and Minas Geraes, there are half that proportion; and one eleventh of the population are pure Indians, of whom two thirds still live in a savage tribal state. The immigration at the ports of Rio and Santos for the twenty years ending with 1890 was 587,524. Immigration has largely increased. In 1887 the number of immigrants was 54,990; in 1888, 131,785; in 1889, 65,187; in 1890, 107,100; in 1891, 218,958. In 1891 the immigrants of Italian nationality numbered 134,391, the Portuguese 32,349, the Spaniards 22,166, and there were 11,817 Russians, 5,285 Germans, and 4,246 Austrians. In August, 1892, the Government made a contract with the Companhia Metropolitana for the introduction of 1,000,000 immigrants from European countries and Spanish and Portuguese colonies in ten years, the majority of whom must be agricultural laborers and the rest skilled in useful trades, and not more than 60 per cent. of the whole may be taken from a single country. A law permitting the importation of Chinese and Japanese laborers was signed by the President on Sept. 26, 1892. A fund of \$30,000,000 has been created by Congress for the encouragement of European



immigration. The population of Rio de Janeiro is about 800,000; of San Salvador, Bahia, 200,000; of Recife, Pernambuco, 190,000; of San Paulo, 100,000; of Belem, Para, 65,000; of Porto Alegre, 55,000.

**Commerce and Production.**—The annual production of coffee in Brazil is about 1,000,000,000 pounds, or 56 per cent. of the total production of the globe. The bulk of the world's supply of raw rubber comes from this country, which is also a large producer of sugar, tobacco, and cotton. Many valuable forest products enter into commerce, and gold mines are worked by English and French companies which yield over \$375,000 a year. Great deposits of iron and other mineral resources lie unworked. There are 17,000,000 head of cattle. The value of the total exports rose from 317,822,000 milreis in 1886 to 317,822,000 milreis in 1890, and of imports from 197,501,500 to 260,100,000 milreis. Besides imposing heavy import duties, the Government levies an export duty on the principal national products. The crops of 1891 and 1892 were abundant, and the receipts of the custom-house increased nearly 50 per cent. In 1892 the coffee exported from Rio Janeiro amounted to 3,701,845 bags of about 60 kilos each, while 3,588,007 bags were exported from Santos, and 105,270 bags from Victoria. In the same year were exported 51,935 tons of sugar from Pernambuco, 688,930 hides from Rio Grande do Sul, and from Para India rubber of the value of 44,637,004 milreis, cacao for 3,501,658 milreis, and Brazil nuts for 1,144,380 milreis.

**Navigation.**—In the two years 1889 and 1890 there were entered at Brazilian ports 5,926 foreign and 897 Brazilian ocean vessels, of 4,954,928 and 355,115 tons aggregate capacity respectively, and cleared 4,650 foreign vessels, of 4,706,483 tons, and 269 Brazilian vessels, of 140,307 tons. The coasting vessels entered were 1,997, of 2,923,296 tons, under foreign flags, and 5,258, of 2,649,195 tons, under the national flag, and cleared 1,825 foreign vessels, of 2,525,150 tons, and 6,987 Brazilian vessels, of 2,905,373 tons. Congress has made a law that will have the effect of excluding foreign vessels from the coasting trade. A German line of steamers has been established for direct trade between Hamburg and Rio Grande do Sul. The merchant marine of Brazil in 1890 comprised 149 sailing vessels and 115 steamers.

**Railroads, Posts, and Telegraphs.**—In 1892 the total length of the completed railroads was 4,788 miles. There were 2,832 miles in course of construction, and 3,345 miles more were projected. Of the roads in operation the State owned 1,533 miles and subsidized companies 3,018 miles. The Government guarantees 6 or 7 per cent. interest on the capital of the latter. The capital invested in the state lines up to the end of 1888 was 195,636,000 milreis, and in all the railroads 488,148,327 milreis.

The post-office in 1890 carried 18,246,739 private letters and 19,280,135 newspapers and printed inclosures. The receipts were 3,243,421 milreis; while the expenses amounted to 9,323,108 milreis.

The telegraph lines in 1892 had a total length of 17,530 miles. The number of messages sent in 1891 was 1,130,229.

**Finances.**—The receipts of the Federal Government for 1891 amounted to 227,921,227 milreis, and the expenditures to 205,948,000 milreis. The revenue in 1892 exceeded 215,000,000 milreis, being 7,000,000 milreis more than the estimate; but the expenditure amounted to 256,000,000 milreis, exceeding the estimate by 50,000,000 milreis, and leaving a deficit of 41,000,000 milreis. The estimated receipts for 1893 were 213,000,000 milreis, derived from the following sources: Import duties and surtax, 150,000,000 milreis; railroads, 20,840,000 milreis; stamps, 10,500,000 milreis; new tobacco stamps, 6,000,000 milreis; post-office and telegraphs, 6,600,000 milreis; fines, etc., 4,770,000 milreis; port charges, etc., 3,786,000 milreis; transfer taxes, 3,200,000 milreis; deposits, 3,500,000 milreis; various, 3,804,000 milreis. The estimated expenditures were 211,649,922 milreis, not including a deficit of 110,240,715 milreis not yet provided for. They were distributed as follows among the Departments of the Government: Finance, 71,354,766 milreis; Industry and Public Works, 66,784,902 milreis; War, 30,555,383 milreis; Marine, 15,676,230 milreis; Public Instruction, 14,847,487 milreis; Interior, 5,387,062 milreis; Justice, 5,385,367 milreis; Foreign Affairs, 1,658,725 milreis.

The foreign debt in 1892 amounted to £29,759,500 sterling, paying interest mainly at the rate of 4 per cent., not including a loan of £1,000,000 subsequently raised in London and bearing 5 per cent. interest. The internal funded debt, paying mostly 5 per cent., amounted to 391,956,700 milreis. Besides this there was a floating debt of 118,000,000 milreis, and 167,611,397 milreis of paper money was in circulation. For the payment of the foreign debt a sinking fund of 1 per cent. has been provided, to be applied to the purchase of the bonds when they are below par in the market, and to the redemption of them in the order in which they are drawn by lot otherwise.

**The Army.**—Service is obligatory, no substitution being allowed, and liability to conscription by lot is universal. The period of service is three years for recruits who present themselves promptly for the drawing, but such as delay or seek to evade conscription are held for four or six years. The organization and distribution of the army are subject to the control of Congress. By the law of December, 1891, the active strength of the army is limited to 20,000 officers and men besides 600 cadets in the military school and 400 in the artillery school. The whole force of the standing army, which can be doubled in case of mobilization, was 1,600 officers and 28,877 men in 1891. There is besides a gendarmerie of 15,000 men. The active army is organized in 36 battalions of infantry, besides 1 transportation company and 1 depot company for instruction; 12 regiments of cavalry of 4 squadrons each, besides 2 corps of 4 companies, 5 companies of picked cavalry for garrison service, and 1 garrison squadron; 5 regiments of field artillery and 5 batteries of fortress artillery; and 2 battalions of engineers. Of the gendarmerie, 2,000 are at Rio de Janeiro. A National Guard is maintained in the States, and a plan for its reorganization has been adopted and partly carried out.





MAP OF

## BRAZIL

Together with

VENEZUELA, GUIANA, BOLIVIA,  
PARAGUAY and URUGUAY.

SCALE OF MILES

0 50 100 200 300 400 500 600

EQUATOR

E A N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A

N

C O

I E

N A

T I

O C

E A





**RIO DE JANEIRO  
and Vicinity**

SCALE OF MILES  
0 50 100 200 300





**The Navy.**—The Brazilian navy consists of 3 seagoing armor-clads, 3 first-class and 3 second-class cruisers, 5 school ships, 2 paddle-wheel transports, and for coast defense 9 screw and 8 paddle-wheel gunboats, 4 monitors, and 9 first-class torpedo boats, besides 4 tenders and 6 steamboats for harbor service. The "Riachuelo," having a displacement of 5,700 tons and engines of 7,300 horse power, giving a nominal speed of  $16\frac{1}{2}$  knots, was built in England in 1883. The "Aquidaban," of 4,950 tons and a speed of 15 knots, was built there in 1885, and is of more modern type. Both have steel hulls, sheathed with wood, and covered with copper on the bottom. They are fitted with twin screws, and have a draught of  $19\frac{1}{2}$  and 18 feet respectively. Each has a belt of steel-faced armor which is 11 inches thick at the water line, and 2 turrets protected by 10-inch armor. Each turret contains 2 9-inch or 20-ton breechloading rifled cannon, throwing 300-pound shells. The "Riachuelo" carries 6  $5\frac{1}{2}$ -inch breechloading rifles and 15 rapid-firing and machine guns, and has 5 tubes for Whitehead torpedoes. The secondary battery of the "Aquidaban" consists of 4 70-pounders and 2 rapid-fire and 13 machine guns. The "Javari," built in France in 1875, is an iron ship of light enough draught for coast defense or river service, with a displacement of 3,700 tons, protected with from 12 to 13 inches of wrought-iron armor, having twin screws and engines of 2,500 horse power, giving a nominal speed of  $11\frac{1}{4}$  knots. She is a double-turreted ship, carrying 4 10-inch muzzle-loading Whitworth guns in her turrets and 6 5-inch guns on the main deck. The 6 cruisers are all effective modern ships. The deck-armored twin-screw "Almirante Tamandare," of 4,735 tons, has, with 7,500 indicated horse power, a speed of 17 knots, and is armed with 10  $5\frac{1}{4}$ -inch and 2  $4\frac{1}{4}$ -inch rapid-fire guns and 8 machine guns. The "Benjamin Constant," of 2,750 tons, with 2,800 horse power and twin screws, has a speed of 14 knots and carries 4 6-inch and 8  $4\frac{1}{4}$ -inch rapid-fire guns, besides 10 small rapid-fire and machine guns, and is fitted with 4 tubes for launching Whitehead torpedoes. The twin-screw "Republica," with 3,300 horse power, can steam 17 knots. Her protective deck is 2 inches thick, and her armament consists of 6  $4\frac{1}{4}$ -inch and 4 6-pounder rapid-firing guns, besides 4 torpedo tubes. The "Trajano," of 1,400 tons, is able to make 13 knots with her single screw, with 2,400 indicated horse power, and is armed with 7  $4\frac{1}{4}$ -inch breechloading rifles. The "Tiradentes," of 800 tons, has engines of 1,200 horse power and twin screws, giving her a speed of  $14\frac{1}{2}$  knots, and is armed with 4  $4\frac{1}{4}$ -inch and 3 6-pounder rapid-firing guns and 2 torpedo tubes. The "Brazil," of 1,518 tons, and the "Lima-Barros," of 1,350 tons, cruising vessels of antiquated type now only useful as floating batteries, carry 4 7-inch and 4 68-pounder Whitworth rifle guns each. The "Sete de Setembro," an old wooden ship of 2,145 tons, capable of making 12 knots with twin screws, driven by 2,000 horse power, has 4 9-inch Whitworth guns mounted on a barbette, which is protected by  $4\frac{1}{2}$ -inch plates. The "Mariz-e-Barros," of 1,440 tons, and the "Bahia," of 1,000 tons, are ancient ironclads with  $4\frac{1}{2}$  to  $5\frac{1}{2}$ -inch armor, carrying 1 4-inch and the other

2 7-inch muzzle loaders. The "Rio Grande" and the "Piahy," river monitors plated with  $4\frac{1}{2}$ -inch armor, carry each a single 70-pounder.

There are naval arsenals at Rio, Ladarío de Matto Grosso, Para, Pernambuco, and Bahia. The policy of the republican Government has been to manufacture vessels and all materials of war in the country. The "Almirante Tamandare" was built at Rio, and in 1893 there were under construction 2 cruisers of 7,250 tons and 2 river monitors. The navy is officered by 1 admiral, 2 vice-admirals, 8 rear-admirals, 17 captains, 29 commanders, 60 first lieutenants, and 250 second lieutenants, with 79 surgeons and 80 paymasters. There are 650 mechanics, 3,500 sailors, and 1,500 apprentices. The marine corps consists of 3,021 men, besides a naval battalion of 990.

**Revolt in Rio Grande do Sul.**—A revolutionary attempt of the Federalists to overthrow the State government was defeated in June, 1892, and the victorious Castilhistas hunted their opponents down, committed horrible deeds of massacre and rapine, and compelled thousands to take refuge in Uruguay and the Argentine Republic. Some of the chiefs took advantage of the amnesty that was subsequently proclaimed. Silveira Martins, the head of the party, with Joco Tavares and other fighting leaders, remained abroad and set to work secretly to collect arms and organize their followers, who were thirsting for revenge. Toward the close of 1892 they were ready to cross the Uruguayan frontier and again raise the partisan standard in Rio Grande do Sul. The State authorities, anticipating invasion, reverted to the policy of terrorism in the hope of crushing the incipient revolution. Their official organ, the "Federação" of Porto Alegre, on Oct. 29, 1892, published an astounding account of a widely ramified revolutionary conspiracy that had been found out through the interception of letters in the post-office of Santa Maria. This story, which was regarded as a fiction, afforded a pretext for violating the amnesty. On Oct. 31 the police entered the house of Friedrich Hänsel, a leader of the German community, and in pretending to arrest him treacherously shot him from behind. Col. José Fagundo da Silva Taveres defended his house with the aid of his half-grown sons and daughter till all were shot down, when he was carried away wounded. More than 50 persons were arrested in Porto Alegre, and large numbers in other places, but most of the prominent Federalists succeeded in making their escape. When the elections were held on Nov. 20 less than one sixth of the electors went to the polls. Already the Federalists had begun to make raids across the border in guerilla bands. Gen. Saraiva was recruiting an army for an invasion, and the Federals of Bage, Yaguaron, and other towns organized and armed themselves. When Saraiva crossed the frontier, and was successful in his first encounter with the State troops, and when Tavares, at the head of a considerable force, laid siege to Santa Anna, the Federal Government suggested the appointment of interventors to settle the dispute of the warring factions in the State. Silveira Martins gave it to be understood that no intervention would be acceptable, and that nothing would satisfy the Federalists except the removal of Gov. Castilho. When the in-



surrection had spread through the southern part of the State and most of the towns were in the hands of the rebels, the Central Government decided to send forces to defend the established authorities. Arms and ammunition destined for the rebels fell into the hands of the Government. The Uruguayan authorities, anxious to avoid the imputation of a breach of the neutrality laws, disarmed some of the Federal revolters who were driven over the border, and seized a cargo of arms. Gen. Tavares was compelled to retreat from his intrenchments before Santa Anna do Livramento by a large force that came to the relief of the garrison just as it was about to yield. Gen. Tellos, commander of the State troops, pursued the rebel general, who took up a favorable position, and on March 17 routed the attacking army of 3,000 men. Tavares occupied the town of Santa Anna, and had scarcely dispatched a large detachment toward Uruguayana, when he was attacked by 800 Government troops under Gen. Portugal. Notwithstanding a vast superiority in numbers the Federals were driven from their position and put to utter rout. They were pursued across the frontier, and found no safety on Uruguayan soil till the commander of the Uruguayan forces that guarded the frontier intervened and demanded the withdrawal of the Brazilian troops. Instead of complying, the Brazilian commander ordered an attack on the Uruguayans, whom he charged with giving shelter to the rebels. The Uruguayans returned the fire, and being re-enforced drove the Brazilians back over the line. Saraiva appeared soon afterward at Alegrete, and after a desperate battle drove the State forces from their intrenchments and took possession of the city on March 27. The place was afterward recaptured by a small force of regular soldiers. Tavares also was beaten when he appeared near Bage. Wherever the insurgents showed themselves in numbers they were met by Government troops, which were strengthened until 3,000, supplied with repeating rifles, mitrailleuses, and field guns, and including 500 cavalry, were stationed near the frontier. The raids were not effectually checked, and the population suffered from depredations committed by the partisans on both sides, while the barbarities incidental to guerilla warfare intensified the bitterness of the parties. The insurgents in all cases evaded a conflict with the national army, and, lacking arms and money, were only able to keep up the struggle by exacting ransom from *haciendas* and villages adhering to the Castilhist cause. Nevertheless the insurrection spread. San Juan, Tuarahy, and Ibicuy rose against the Government, and bodies of the State militia went over to the rebels with their commanders. A battle was fought near San Luis between the forces of Tellos and Tavares, in which there was much loss of life, though neither achieved a decided victory. Gen. de Moura went to Rio Grande do Sul to assume the direction of the Government troops and make an inquiry into the demands of the two parties, with the view of finding a way to terminate the conflict and pacify the State with the co-operation of the Governor. His failure to come to an agreement with Gov. Castilho had a depressing effect. The President had to consider whether he should insist on mediation or even remove the Governor, or on the other

hand continue to support Castilho. His choice of the latter alternative was condemned by some who were prominent in the State councils. One of the Government regiments deserted to the insurgents. A fight between Castilhist partisans, who entered Uruguay to steal horses, and the Uruguayan frontier guard increased the existing tension between the two republics. The Uruguayan minister to Brazil entered a firm protest against the violation of Uruguayan territory. Gen. Lima, while pursuing a body of revolutionaries, was drawn into an ambush near Inhanduhy, and about 200 of his men were killed or wounded. But the Government forces were strong enough to hedge in the Federals in the frontier districts. By the end of May the forces led by Silva Tavares and other commanders of the rebellion had been driven into Uruguay, and only the bands of Gumersindo Saraiva remained in the field. The Government was prevented by its own dissensions and dangers from proceeding to the most extreme measures. Vice-President Peixoto had a submissive majority in the House of Representatives, but in the Senate the Opposition was strong. The weight of opinion in this body was in favor of mediation between the parties in Rio Grande do Sul and the conciliation of the Federals. Admiral Eduardo Wandenkolk, the representative of the navy in the Provisional Government that established the Government, who was compelled to leave the Cabinet and has since been in the Opposition in the Senate, was sent to Rio Grande do Sul to report on the situation to the Senate. After his arrival he entered into correspondence with Martins, and soon he openly espoused the cause of the rebels, obtained the merchant steamers "Jupiter" and "Italia," was joined by the gunboat "Camociu," and, relying on support from the land forces, attempted on July 11 to capture the city of Rio Grande. Gen. Saraiva and Gen. Salgado were expected to co-operate with him on land at the head of 3,000 revolutionists. Swollen streams delayed the march of the land forces, and when Admiral Wandenkolk arrived there were only a few bands of insurgents on the spot, though from their appearance he supposed them to be a large body ready for battle. In the mean time the Government steamers that had been sent from Rio appeared outside of the bar, and when Wandenkolk retired, after a futile attack, the "Jupiter" was pursued by the gunboats "Republica" and "Cananea," and was captured at Santa Catharina on July 16 with Wandenkolk and all on board. The "Italia" was seized by the Uruguayan authorities, and the vessel was delivered up to Brazil, but the demand for the surrender of the officers and crew was refused. The Uruguayan Government had a new cause of complaint, more serious than the previous ones, on account of the acts of Gen. Isidoro, one of the commanders of State troops, who had chased insurgents across the frontier, and killed not only fugitive Brazilians but Uruguayan citizens who gave them shelter.

**Cabinet Crisis.**—When, in May, the administration decided to continue to support the legal authorities in Rio Grande do Sul with the military forces of the republic, Rear-Admiral Custodio de Mello, Minister of the Navy, and Serzedello Correa, Minister of Finance, handed in

their resignations and published their reasons. The former accused the Vice-President of embarking in the civil war in a frivolous manner, declared that the operations had been badly planned and conducted, and that no reasons existed for their continuation, and said that he was unwilling to share any longer the responsibility for the acts of the Government. The Finance Minister stated that Vice-President Peixoto had ignored his warning to use the utmost frugality in expenditures, and had issued a decree so narrowing the functions of the court of accounts as to make it worthless as an organ for the control of the financial administration. Rear-Admiral Chaves was induced to take charge of the Ministry of Marine, and Minister Freire, who had recently entered the Cabinet, took the portfolio of Finance, while continuing to direct the Foreign Office. He was relieved of the duties of the latter post on July 1, when João Pereira was appointed Minister of Foreign Affairs.

**Revolt of the Navy.**—Though the rebellion was kept down in Rio Grande do Sul by the military power of the Government, it was not crushed out. In July similar uprisings broke out and gained headway in Entre Rios, Santa Catharina, Corrientes, and other such movements were on foot in other States. The approaching presidential election in October set in motion the plots and schemes of ambitious politicians, revived the burning questions of State rights or parliamentarism and the limits of executive power, fanned the smoldering jealousy between the army and the navy, inspired extravagant rumors of dictatorial purposes and tales of the despotic abuse of his office by the President and of monarchical or separatist designs of the Opposition, and generally wrought political passions up to a fever heat. Admiral Mello's dramatic withdrawal from the Cabinet, and the manifesto in which he attacked Peixoto, were ascribed to his ambition to become the next President. The animosity of the navy against Peixoto was intensified by his treatment of Wandenkolk, whom he was determined to have tried by court-martial. The officers of the navy had shown their sympathy with the Federals in the southern province by electing Wandenkolk, when the object of his mission became known, president of their club. A large section of Historic Republicans, led by Ruy Barbosa, and including other members of the old Provisional Government, were strongly opposed to the President's policy of interfering in the internal affairs of the States. When the President and his advisers were on the point of hauling ex-Admiral Wandenkolk before a military tribunal, Ruy Barbosa sued for a *habeas corpus* in his behalf, and in the proceedings the executive officials incensed the navy by treating Wandenkolk with indignity. The President was charged publicly with having intimidated the Supreme Court and preventing his release on bail. The Senate took action in the matter, and by vote of a small majority decided that Wandenkolk should be tried by the regular courts. In Brazil, as generally in the South American republics, a President is not eligible for re-election for the next succeeding term. Peixoto was not an elected President, but as Vice-President succeeded to

the duties of the office on the resignation of Deodoro da Fonseca, in November, 1891. Therefore he did not come under the rule, and he and his friends used the influence and power of the Government to secure his election as regular President. His opponents carried through a bill prohibiting a Vice-President who acts as President from being a candidate. This he vetoed. Many of the old Republicans stood on the side of the President, who was also supported by a large part of the former Conservative party, was especially popular in the central and southern States, and had the army and the whole power of the Government under his control. Others of the Republicans considered that the civil war and disorder in various States was caused by the unconstitutional policy and revolutionary acts of the Government. The clericals and secret foes of the republic naturally opposed the Government. As the time of the election approached, hostility to Peixoto and his acts increased, but the dangerous revolutionary spirit that prevailed caused a great many who condemned his policy to rally to his support. The naval forces had taken the initiative in the deposition of Fonseca, and the navy was more exasperated against the acting President than it had been against his predecessor. In the Navy Club a number of officers conspired together, laid plans for a stroke of the same character as that by which the Fonseca dictatorship was overthrown, and took into their confidence others of like mind and spirit.

On the evening of Sept. 5, while the officers of the fleet anchored in the harbor at Rio were at the opera, Admiral Mello, with several of his friends, went on board the "Aquidaban" first, and then to the other war ships, and completed arrangements by which his flag was raised on the "Aquidaban," and every Government vessel in the port was under his orders. The fleet consisted of the "Aquidaban," "Republica," "Trajano," "Marajo," "Javari," "Orion," "Madeira," "Marcilio Diaz," "Sete de Setembro," "Almirante Tamandare," "Amazonas," and 6 torpedo boats, besides towboats, 4 merchant steamers, and several steam launches. In the following morning he sent a message to President Peixoto demanding his resignation and the surrender of the Government offices within six hours. Instead of yielding, as Mello expected, Peixoto defied the naval squadron, and took vigorous measures to frustrate the revolution, for which the Congress gave him legal authority and voted supplies. The flower of the Brazilian army had been kept in Rio in anticipation of such an emergency. There were about 6,000 troops, which were distributed in the fortifications and strategic points of the bay to prevent a landing. The infantry were armed with Mauser and Mannlicher rifles. A considerable force of infantry and artillery was sent by a detour to occupy Nitheroy, or Praia Grande, the capital of the State of Rio Janeiro, on the opposite side of the bay, in order to keep open communications with the fortress of Santa Cruz, which guards the entrance to the harbor. The garrison of this fort remained staunchly true to the Government, and was prepared to execute its orders to sink any of the ships that came within range of the guns. The garrison of Fort



Villegagnon, within the harbor and in the city, when invited to join the rebellion, declared for the Government, but promised not to fire upon the fleet. The insurgents on the night of Sept. 5 landed on the island of Cobras, which is fortified to protect the city, and spiked all the guns. By authority of Congress, Rio and Nictheroy were declared in a state of siege, and the President was empowered to extend it to any part of the country. The press was placed under rigorous censorship, and telegraphic communication between Rio and the rest of the world was shut off entirely. The insurgents attempted to land in small parties on Sept. 6 and 7, with the intention of cutting off telegraphic communication with the forts, and everywhere they were repelled. The soldiers fired by mistake on the boat of the Italian man-of-war, killing the coxswain, for which the Government apologized at once, paying an indemnity of \$50,000 to the man's family. On Sept. 7 they captured the Armação, the ammunition laboratory of the Government at Nictheroy, and supplied themselves with abundant munitions. They were dislodged with considerable loss on the 11th, and on the 12th they bombarded the place.

The entire *personnel* on board the fleet, including officers, marines, sailors, stokers, and machinists, did not exceed 1,200 men. There were not enough to attempt to gain a foothold on land after Gen. Peixoto had taken measures for guarding all the shore of the bay. The ships could not venture out to sea past the forts and torpedoes at the mouth of the harbor. The leader of the rebellion could do nothing but manœuvre his ships in the bay, watching for chances and awaiting developments. The gunboat "Alagoas" fell into his hands, surrendering without firing a shot. The forts fired on the ships. Mello had threatened that if this was done he would bombard the city. On Sept. 13 he opened fire, first on the forts near Nictheroy, and afterward on the arsenal and the Government buildings that face the water front in Rio. The bombardment lasted six hours, and was renewed the next morning, but caused little damage, because the guns were badly handled. The port was blockaded to all Brazilian vessels, while foreign vessels were allowed to enter and depart, the war ships of their respective nationalities looking after them during their stay. Except Santa Cruz, the forts either were silenced by the bombardment or their commanders decided to remain neutral, so that it was possible for the revolted vessels to leave the harbor. The stone works and antiquated cannon of Santa Cruz were useless against the large guns of the fleet, but earthen batteries had been constructed behind the fort and mounted with rifled cannon of large caliber. The marine infantry on the island of Cobras joined the insurrection. The military were in many places partly won for the revolutionary cause, but the suspected characters were closely watched, and no opportunity for an outbreak was allowed. In the garrison at Santos, the capital of São Paulo, a large proportion of the junior officers and men plotted to rise and deliver the place to Mello. They were in communication with the crew of the Government gunboat in the harbor, and conveyed the knowledge of their purpose to Mello, who sent the

"Republica" from Rio to aid in the capture of Santos. The military plot was revealed by a female spy, and the chief conspirators were seized and sent to be dealt with by Peixoto. The sailors, finding that the expected meeting came to naught, and having no coal for their vessel, concluded that they had been betrayed, and seized some propellers, in which they attempted to escape after scuttling their ship, but they were obliged for lack of coal to put in at the next port, where they were made prisoners. When the "Republica" and her companions arrived the alertness of the military indicated that the plot had miscarried, yet they remained and blockaded the port for several days. An attempt was made by an American in Peixoto's pay, named Boynton, to destroy the "Aquidaban" with torpedoes, but the tugboat in which he attempted to reach the vessel's side, flying the British flag, was intercepted by a British gunboat, and the head conspirator was arrested and handed over to the United States naval authorities. On Sept. 22 the fleet again bombarded Rio. Less care was taken to spare the business and residential quarters, and consequently many persons were killed and much damage done, causing a panic in the city and an exodus of the inhabitants. Admiral Mello issued a proclamation, in which he charged that Vice-President Peixoto had, with the aid of corrupt Senators and venal Deputies, overridden the constitutional limitations placed upon his powers, and introduced a *régime* of arbitrary tyranny. He promised that if he succeeded in his stand for liberty he would hand over the Government to the same honorable men who had given liberty to the nation before. Four members of Congress who were on board the "Aquidaban" constituted themselves into a provisional government, and issued a proclamation giving the command of the forces to Admiral Mello for the purpose of restoring peace and re-establishing law and republican principles. The rebels captured Desterro and the island of Santa Catharina, and cut off communication between Rio and Santa Cruz. The garrison at Desterro joined the rebels, and some were put on board the ships, while the rest were left to man the works. Peixoto held his ground with as much determination as ever, though in Pernambuco, Bahia, and other parts of Brazil the movement against him gained headway. He obtained \$4,000,000 of advances to meet the expenses of the war, and arranged to fit out a naval squadron in the north, under the command of Admiral Gonçalves Duarte, to fight the rebels on the sea. The foreign naval authorities induced Mello to promise to be careful not to throw shells into the defenseless parts of the capital. The diplomatic corps interceded with Peixoto, hoping to persuade him to remove the batteries that he had planted on the hills among the residences on the water front, and to refrain from firing upon the ships and thus provoking a new bombardment. If he would transfer his warlike operations to other localities, the diplomatists expected to impress Mello with the doctrine that Rio, being no longer a fortified garrison town, was exempt from bombardment under the laws of war. The President declined to follow this advice, and declared that he would soon bring the rebels to terms. The brutal and

lawless acts of Peixoto's soldiery furnished the foreign representatives with a ground of complaint. The military, in searching houses and arresting suspected sympathizers with the rebellion, spared neither life nor property. The European diplomatists threatened to land men from the war ships for the protection of their countrymen. The representatives of South American countries protested against European armed intervention on American soil in any form, and in this view they were backed up by the Minister of the United States. In the last engagement between the shore batteries and the fleet Admiral Mello fired 196 shells, and the forts twice as many, but none of the latter reached the vessels. Several shells from the ships fell in the forts, killing many of the troops and doing great damage. Two or three crashed into buildings in the center of the city, and several persons, including an English bank clerk, were killed. When coal was short on the ships, the insurgents obtained a fresh supply from barges and sheds after a brief fight, in which the land forces were easily worsted by the aid of the guns of the ships. Stores of flour and provisions were captured in the same way. The garrison of Fort Villegagnon, about 700 men, finally declared for the revolution, and the fortifications were strengthened with a view of covering a landing in the city. The guns of this fort gave effective assistance to the fleet in an engagement with Santa Cruz and the other forts of the Government. The shelling of Rio was resumed on Oct. 10, because Peixoto had not dismounted his shore batteries and ceased firing on the fleet. At the same time Mello issued a new proclamation, in which he declared that in the event of his success he would adhere to republican institutions, and said that none of the leaders of the revolt aspired to power for their own benefit, but had for their only object the restoration of peace to the oppressed country, and the liberation of a people who had been sacrificed by the inconceivable want of patriotism and reckless ambition of the head of the Government.

The insurgents met with a succession of mishaps. One of their ships, the "Sete de Setembro," ran aground near Praia Grande. A powder magazine exploded on the island of Macangue, and deprived them of a large part of their ammunition stores, and subsequently another magazine, on Governadores island, blew up while powder was being transferred to the ships. The movement gained ground in Rio Grande do Sul, where one town after another fell into their hands, and the Castilhistas were beaten repeatedly in battle. The State of Santa Catharina revolted and cast its fortunes with Mello. On Oct. 10 the bombardment of Rio was begun again by the rebel ships and Fort Villegagnon. When the Provisional Government was established on land at Desterro, Frederico Guilherme de Lorena, a captain of the navy, was proclaimed Provisional President. On Nov. 3 they mounted guns on the island of Macangue, and on Nov. 7 Admiral Mello began another vigorous bombardment of Rio with the "Aquidaban," supported by his land batteries, especially Fort Villegagnon.

Meanwhile President Peixoto, who had the resources of the customhouse of Rio de Janeiro,

which ordinarily yields \$5,000,000 revenue a month, provided himself with a fleet, with which he could give battle to his enemies on the sea. He purchased a number of merchant vessels in the United States and converted them into war ships, and also secured the torpedo gunboat "Destroyer." The total cost was about \$1,500,000. Besides these, he is said to have secured 9 torpedo boats in Europe. The "Nichteroy," previously known as "El Cid," was armed with a pneumatic gun for dynamite bombs, invented by Capt. Zalinski, of the United States army. The "Britania" was rechristened the "America" when fitted out with a formidable armament of heavy guns. The torpedo boats "Yarrow," "Feiseen," "Nada," and "Javelin" were also fitted out, and the fleet was abundantly equipped with Hotchkiss guns. In Montevideo, the "Tiradentes," from which the machinery had been removed when the rebellion broke out for fear that the crew would deliver her up to the rebels, was now refitted and placed in commission, and manned with a loyal crew brought by Rear-Admiral Gonçalvez. The "Bahia," which had remained loyal to the Government, was to join her there; but she ran aground, and it was some time before she was got afloat and repaired. The "Desterro" and "Santos," merchant steamers converted into gunboats, were added to this division. In the north, Rear-Admiral Duarte took command of a division consisting of the corvette "Parahyba" and the gunboats "Braconnet," "Guarany," and "Capedello," which were assembled at Bahia. The "Riachuelo" and the "Benjamin Constant" were at Toulon, France. The rebel cruiser "Republica" lay outside Montevideo for some time to intercept the "Tiradentes," but steamed away on finding that she would not leave port and accept the combat.

On Nov. 22 the "Javari" was either struck by a shot from Fort São João or sprung aleak, owing to rivets being loosened by the concussion of her heavy guns, and went down. A few days after this loss Admiral Mello ran out of the harbor of Rio de Janeiro with the "Aquidaban" and the armed transport "Esperança," under the fire of the forts and partly protected by the darkness of night. The "Aquidaban" delivered shots from her heavy guns fore and aft at the forts on either side, doing great damage, and kept up the fire until she was out of range. The Government troops suffered severely from the effects of her rapid-firing guns. Commodore Elisar Tavares, who was left in charge of the naval forces in the harbor, was placed under the command of Gen. Saldanha da Gama.

The officers of the foreign warships had intervened to prevent further operations that would endanger foreign property in Rio or interfere with commerce. Having induced Peixoto to stop firing from the batteries on either side of the commercial quarter, and also the landing of military supplies or munitions, to which Peixoto agreed because he could receive them by rail, they declared that the city was no longer open to naval bombardment, and obtained a promise from Mello that he would not shell the town so long as Peixoto kept his part of the compact. They also insisted that the lighters of the harbor should be treated as neutral when landing goods or loading merchant vessels, and declared



that they would protect them when flying their flags. The insurgents accepted this decision with bad grace, and ventured to seize no more lighters except one flying the Argentinian flag, as there was no Argentinian warship in the harbor. The fort at Villegagnon continued to engage the other forts and the shore batteries. The squadron frequently bombarded Nietheroy, and almost destroyed the town, but were unable to effect a landing there. The loss of the "Javari," whose heavy guns had done most of the damage in the previous bombardments, was partly repaired by putting in good order the "Almirante Tamandare."

Rebellion broke out in the State of Pernambuco in the middle of November. The insurgents, led by José Mariano, seized two vessels that were destined for Peixoto, whereupon martial law was proclaimed. The movement was checked by the arrest of Mariano and some of his followers. The general elections for Congress had been postponed by order of Vice-President Peixoto, under the state of siege from Oct. 30 to Dec. 30, and the state of siege was prolonged by Congress till Dec. 25. While Admiral Mello had not retracted his public declaration of adherence to republican institutions, though he was accused by the Government party of intriguing with the Imperialists for the restoration of the dynasty, probably in the person of Prince Pierre de Alcantara, eldest son of the Princess Isabel and the Comte d'Eu, Admiral da Gama issued an ambiguous proclamation that could be interpreted as imperialistic.

The insurgents in Rio Grande do Sul who besieged Bage, which was still held by the Government, gained a decisive victory at last, on Nov. 28, over Gen. Isidoro Fernandez, who surrendered with 700 men after losing 300 killed, while the Federals lost 80. Gen. Tavares had surrounded the Castilhistas, judging, after capturing an ammunition train, that they must be short of ammunition. The fighting lasted two days, and the Federal general only surrendered when his men had no bullets left. When the first of Peixoto's new vessels reached Brazil Mello's ships were guarding the entrances to the harbors of Rio and Santos, and inside the bay of Rio de Janeiro Admiral da Gama was planting heavy guns on the isle of Cobras, and Peixoto was strengthening the batteries back of Rio.

Commodore Oscar F. Stanton, commanding the South Atlantic squadron, arrived in Rio harbor with United States men-of-war in the latter part of October. Having been ordered to maintain an impartial attitude toward the contending forces, he not only saluted the Brazilian flag on land, but gave the customary naval salute to the Brazilian flag flying over Admiral Mello's ship. The Brazilian minister at Washington complained of this ceremony as involving a recognition of belligerent rights, and Admiral Stanton, after acknowledging his act by telegraph, was recalled, and Rear-Admiral A. E. K. Benham was sent later to take command of the squadron. The rebels kept up their intermittent bombardments, notifying foreign vessels to remain outside of the line of danger, even when there was no firing for weeks. The result was that vessels carrying American goods remained month after month in the bay without being able to discharge

their cargoes. Admiral Benham finally concluded that this was an unjustifiable interruption of commerce, and told the master of an American vessel that he would have protection in landing his cargo in lighters flying the American flag. The Brazilian admiral forbade the landing, and attacked the lighter as it approached the quay, upon which Admiral Benham fired a warning blank shot, and when it was answered by a shell, which went wide, a small shot was sent through the stern of the Brazilian ship, whereupon the Brazilian commander struck his flag. After that American merchantmen unloaded and took on cargoes without interruption.

Except at Desterro, the rebels were unable to gain a firm foothold on land. They placed a force in the field in Santa Catharina, which was beaten, as well as a body of Federalists from the south which endeavored to form a junction with it. In Rio Grande do Sul, the successes of the Federalists were checked when Peixoto was able to re-enforce his garrisons there. The rebels suffered a serious loss in Rio harbor by the blowing up of their powder magazine on the island of Governadores, which was struck by a shell from Fort Santa Cruz, and two English officers who chanced to be on the island were killed by the explosion. This island was afterward occupied by the Government troops, but they could not hold it long. Mocangue island was also taken. On December 10, and again on Dec. 14, a brisk cannonade of rapid-fire guns from Admiral da Gama's island batteries and from steam launches killed many people in Rio. An attempt by Peixoto's men to capture Fort Villegagnon by surprise was unsuccessful, and the landing force was repelled with a loss of 20 men. The rebels were no more successful in an attempt to recapture the Armação magazine in armed tug-boats. On Dec. 10 the rebels captured the "Parahyba" as she was leaving Rio harbor with a cargo of flour and meat. The firing between the forts and the ships became more frequent toward the end of December, and the guns on both sides were better served than they had been at the outbreak of hostilities. Banking and other business was practically suspended, and most of the population sought safety in places out of range. The rebels were persistent in their efforts to obtain possession of Nietheroy, where the Government batteries kept up a continual duel with their fort on Cobras island. The vessels purchased for the Government in New York were useless, because after the American crews left no trained men could be obtained.

Admiral da Gama became the real head of the rebellion after the departure, on Nov. 30, of Admiral Mello, who was wounded and long incapacitated by a splinter from a shell that struck the "Aquidaban" as she ran past the forts at the entrance of Rio harbor. While Mello was supposed to be a Republican, the Government and the monarchical party as well presumed that the aim of Admiral da Gama was to restore the Imperial Government. The American Government was informed by the governments of France and Great Britain that they would not intervene in any way between the contending parties in Brazil, and Admiral da Gama, when he made a fresh appeal for recognition as a belligerent, received a refusal from the foreign ministers.

**BRITISH COLUMBIA.** The third session of the Sixth Parliament of British Columbia opened on Jan. 28 at Victoria. The death of the Hon. John Robson, Premier, made a reorganization of the Government necessary, and Lieut.-Gov. Dewdney called upon the Hon. Mr. Davie to form an administration, which he did, with the following Cabinet: Hon. Mr. Pooley, President of Council; Hon. Mr. Vernon, Chief Commissioner of Lands and Works; Hon. Mr. Turner, Minister of Finance; Col. Baker, Provincial Secretary and Minister of Education; Mr. Davie, in addition to the premiership, having the portfolio of Attorney-General.

The Lieutenant-Governor, in his opening address, directed the minds of the members to the matters of public interest that would occupy their attention during the session, the more important being the question of the redistribution of parliamentary seats, public health, the rights of the province to the lands in the railway belt, and the consideration of the relations of labor and capital.

The Minister of Finance, in his budget speech, stated that the public revenue of the province for the preceding year was \$1,038,237, and the expenditure \$1,430,920, or an excess of expenditure over revenue of \$392,683. Much of the expenditure, however, he said, was for roads, public works, and other necessary improvements. There had been paid during the year \$118,978 for interest on the public debt, and \$41,710 on account of the sinking fund. By means of a new system of refunding the public debt, lower rates of interest, and increased revenue, the minister said he hoped to begin the year 1894 with about \$500,000 to the credit of the province.

The Minister of Education, in his annual report, gave the number of pupils in the public schools as 10,773, the number of schools 149, and the expenditure for the year \$160,627.

Other important items of expenditure were for hospitals, etc., \$33,272, and for roads and other improvements \$368,633.

During the session, which ended on Apr. 13, 92 bills were introduced, 66 of which were passed. The most important of the acts were one providing for the establishing of a bureau of labor statistics and councils of conciliation and arbitration for the settlement of industrial disputes; to amend the Married Women's Property act; respecting public health; and acts incorporating railway and other companies.

The Dominion Government subsidy to the province is over \$200,000 a year, and another source of revenue is the tax of \$50 a head on Chinese, which last year netted the province \$26,275. This is only one third of the whole sum collected, the remaining two thirds passing into the Dominion treasury.

**Dominion Grants.**—The following were the most important grants made by the Government of Canada to the province for the fiscal year 1893-'94: Indians, included under the general heads of salaries, relief of distress, seed grain, implements and tools, medical attendance, education, etc., \$92,282; collection of revenue customs, \$59,495; steam service between San Francisco and Victoria, \$17,640, and between Nanaimo and Victoria, and Comox and Valdez

island, \$6,000; Victoria new post-office, \$100,000; British Columbia Penitentiary, \$49,449.15; Victoria drill hall, \$26,500; improving Victoria harbor, the Fraser River, etc., \$83,500; fortifications at Esquimalt, \$70,000; pay of a detachment of Royal Marine Artillery at the fortifications, \$35,000; and for the quarantine station and wharf at William's Head, \$114,500.

**Mineral Products.**—Coal, of which British Columbia possesses vast supplies, is the most important mineral production of the province. In 1874, the earliest year of which there are statistics, the amount of coal mined was 81,574 tons. Since 1888, when the product was 548,017 tons, there has been a steady annual increase in the output of over 100,000 tons, and the estimated production for the present year (1893) is 1,059,517 tons. Of the coal produced about two thirds is exported, and for this year the amount received from this source of wealth will probably exceed \$2,100,000. So far coal mining has only been conducted at the Nanaimo, Wellington, East Wellington, and Union collieries; but small supplies for home use are procured from surface outcroppings and shallow deposits in various sections of the province.

Gold mining is not now prosecuted in British Columbia with the enthusiasm and success that characterized the industry in former years. In 1858, a year after gold was discovered there, the value of the product amounted to \$705,000 for the year. The amount produced rapidly increased until 1863, when the maximum was reached, the value of the precious metal for that year being \$3,913,563. Since that time there has been a gradual decline in the yearly product, until now scarcely \$400,000 worth is secured. Since the discovery of gold in the province the value of the entire quantity produced is \$56,500,000 nearly.

Considerably more than half the men engaged in gold mining in British Columbia are Chinese, and their methods, while giving them what they consider fair remuneration, are not at all scientific, or calculated to secure the best results. But the falling off in the amount of gold produced is less owing to improper methods than to exhaustion of the old sources of supply. The discovery of a rich auriferous belt at Alberni last summer was hailed with delight by gold miners. Col. Baker, a member of the British Columbia Cabinet, visited the place a few months after the discovery, and spoke highly of its prospects. He describes the auriferous belt as being 6 miles wide and extended between China and Highwatches creeks as far as prospected to a distance of 80 miles. A large number of claims were recorded when Col. Baker's visit was made, and prospectors were eagerly pressing forward to the neighborhood. Alberni has a magnificent harbor, and large water power almost in the center of the town, which at the time of the gold find had a population of about 200. A large area of rich agricultural land and immense tracts of valuable timber exist in the district.

**Lumber.**—The revenue received by the Dominion Government from the Crown Timber Agency of the province in 1892 amounted to \$30,916, being \$15,078 less than for the year before. The total quantity of lumber manu-





HELL-GATE GORGE, FRASER RIVER, BRITISH COLUMBIA.



factured in the licensed sawmills of British Columbia in 1892 was 20,062,680 feet, as compared with 30,507,439 in 1891. This only represents the lumber product of which returns are received by Government. Much is manufactured by private individuals in the unlicensed areas of which no returns are received. The principal wood made into lumber, etc., is red cedar, otherwise known as Oregon pine. The area of crown timber land licensed in 1892 was 243·32 square miles.

**Fisheries.**—The total yield of the British Columbia fisheries for 1892 amounted to \$2,849,483, which was a decrease from that of the previous year of \$159,271. The quantity of salmon disposed of in a fresh state exceeded that of 1891 by 800,000 pounds, while the pack of the canners fell short by 3,600,000 cans. The limited output for 1892 was probably due more to a desire to regulate the supply than to any scarcity of fish. The season was considered satisfactory for what is there termed an "off year," having turned out much better than the preceding periodical "off year" (1888). The product of halibut for the year showed an increase over that of 1891 of over 200,000 pounds. An incident worthy of note was the capture during 1892 of several shad at River's Inlet, and on the north arm of the Fraser river. The fisheries inspector stated that all the shad on the Pacific coast originated from the fry planted in the Sacramento river, and he alluded to the incident to show a northward migration by these fish of over 1,000 miles.

The total number of seal skins captured by the British Columbia sealing fleet in 1892 amounted to 46,362, valued at \$602,706, as compared with 52,995 skins, valued at \$688,935, for 1891.

For 1893 the aggregate salmon pack of the Fraser river canneries was 20,500,000 pound tins, or 425,200 cases of 48 cans each, the total weight being 10,000 tons. The fisheries elsewhere were also unusually productive. The estimated value of the fish consumed by the Indians of British Columbia annually is \$3,000,000, which is not included in the annual production.

In 1892 there were 143 vessels, valued at \$656,150, and 1,766 boats, valued at \$91,365, employed in the fisheries of the province. The number of sailors and seal hunters was 1,472, and of fishermen and canners 6,698. The number of salmon canneries in operation during the year amounted to 38.

**Seal Fishing.**—In consequence of the restrictions placed upon the capture of seals, the British Columbia seal fishers were not very sanguine of success when the season opened last spring, but notwithstanding their misgivings the season was fairly successful. Fifty-four vessels were engaged in the industry, 24 of which sent in their spring catch early in the season, and the remaining 30 obtained, up to Sept. 28, on the British Columbia coast, 25,120 skins. The estimated catch for the season is 60,000 skins.

During the preceding year (1892) the British Columbia seal fishing was prosecuted at a loss of about \$100,000. Of the 65 vessels employed 3 were wrecked, 10 were seized by American or Russian cruisers, and the rest secured a catch of 50,000 skins. There were 1,452 persons employed during the season, their wages aggregating \$30,000.

**Salmon Fishing.**—The season of 1893 was one of the most successful for salmon fishing ever known in British Columbia. The canning establishments were all busy, and a large export trade was transacted. On Fraser river the run of salmon was the largest on record, and as many as 45,000 were caught in three days in August. Though complete and reliable statistics are not obtainable at the time of writing, sufficient is known to warrant the assumption that the season's fishing was successful in a marked degree.

**Exports.**—The chief exports of the province are mineral productions, fish, cattle, fruit, and timber. Large shipments of fruit were forwarded to England last autumn, and large consignments of canned salmon and of cattle were also sent there during the season. Shipments of lumber were sent to China, Japan, and elsewhere, and of coal to San Francisco. Complete statistics are not yet obtainable of the export trade of the province for 1893.

**Criminal Statistics.**—The number of criminal convictions in British Columbia last year was 187, or a ratio of 17·34 per 10,000 inhabitants; for the year preceding, 145, or a ratio of 14·85 per 10,000. Including summary convictions by justices of the peace, the total for last year was 1,321, or 1 to 81 inhabitants, and for the year before 1,360, or 1 to 71. The increase in crime in the province during the past ten years has been 201·55 per cent., while the population increased only 98·50 per cent.

The disproportionate increase in crime may be largely attributed to the fact that the majority of those employed in mining, in the fish-canning industry, and in the lobster and seal fishing, while responsible for much of the crime, are not enumerated among the permanent population of the province.

**Progress and Development.**—When British Columbia entered the Dominion of Canada, in 1871, its population was 36,000. According to the census of 1891 the population then was 96,560. Last year the increase in the number of the inhabitants amounted to 10,441, and for the present year (1893) allowing a similar increase, which is probably a moderate estimate, the population would amount to over 117,000. This enumeration does not include occasional or temporary dwellers in the province, Indians, of whom there are 35,202, or Chinese, of whom many thousands are employed in mining and other industries.

The increase in the population of the towns of the province has been at a much higher rate. Vancouver, the Pacific terminus of the Canadian Pacific Railway, had in 1893 a population estimated in round numbers at 20,000. Until May, 1886, its site was covered by a dense forest. It is now a place of great commercial importance, having extensive wharves and warehouses, fine hotels, churches, and schools, and many miles of well-paved streets lighted by gas and electricity. It has a regular steamship service to China and Japan, to Australia *via* Honolulu, to San Francisco, to Alaska, and to various points in the province.

Victoria, the capital of British Columbia, with an estimated population in 1892 of 17,431, in 1893 of 20,000, is at the southern extremity of Vancou-



ver Island, overlooking the straits of Fuca. It has steamship connection with San Francisco, Mexico, South America, Honolulu, and Australia, and in the summer months with Alaska. In addition to the Government buildings and other fine edifices previously existing in the city,

shops, and graving docks. Recently an arrangement was effected between the British Government and that of Canada whereby the fortifications will be much strengthened and extended. During 1893 a corp of marine artillery was in charge of the work, which, when completed, will



INDIAN TRAPPERS, BRITISH COLUMBIA.

many were erected in 1893, among the more important being the new post-office, the drill hall, and the Young Men's Christian Association building, reputed to be equal to any structure of the kind in Canada.

Esquimalt harbor, 2 miles from Victoria, is the British naval station and rendezvous on the north Pacific, with naval storehouses, work-

render Esquimalt harbor one of the best fortified places on the Pacific coast. Canada contributes largely toward the expense of the work.

The profitable trade with China, Japan, and Australia opened up by the steamships sailing in connection with the Canadian Pacific Railway, has so strongly impressed the Dominion Government with its great promise that last



October the Hon. Mackenzie Bowell, Minister of Trade and Commerce, went on a mission to Australia to negotiate special tariffs with reference to this new trade route. Recently the new steamship line between Sydney, New South Wales, and Victoria, British Columbia, entered into a ten years' defensive and exclusive working arrangement with the Canadian Pacific Railway.

A little earlier in the season Sanford Fleming, C. M. G., a noted Canadian surveyor and engineer, visited Australia in the interests of a project to establish telegraphic communication between that continent and British Columbia; but as to the success of his mission, nothing can with certainty be affirmed.

**BROOKS, PHILLIPS**, fifth bishop of the Protestant Episcopal Church in the diocese of Massachusetts; born in High Street, Boston, Mass., Dec. 13, 1835; died in that city, at No. 233 Clarendon Street, Jan. 23, 1893. His parents, William Gray Brooks and Mary Ann Phillips, were descended from the early founders of New England, and among his maternal ancestors there was a long succession of Congregational clergymen. Thomas Brooks, his paternal ancestor, came to this country about 1630, and settled in Watertown, in the same town in which the Rev. George Phillips, his maternal ancestor, who had come from England in 1630, in company with Governor Winthrop, was the first pastor. Phillips Brooks was the second of six sons, four of whom became Episcopal clergymen, and one of whom died of disease in the civil war. At the time of his birth the parents of Phillips Brooks were connected with the First Church of Boston, and he was baptized on May 1, 1836, by the Rev. Nathanael L. Frothingham, a Unitarian minister of eminence, who was then pastor in that church, and who had married a cousin of both Mr. and Mrs. Brooks. In 1839 the family formed its connection with the Episcopal Church by the confirmation of Mrs. Brooks in St. Paul's Church, Boston, which shortly afterward came under the rectorship of the Rev. Alexander H. Vinton, D. D., with whom, until the time of his death, in 1881, Phillips Brooks was closely connected by ties of admiration and friendship.

Phillips Brooks was educated in the public schools of Boston, being graduated at the Latin School in 1851, when he entered Harvard College. There he attained high rank, and was graduated twelfth in the class of 1855. He received in his junior year the Bowdoin prize for an English essay, and his course was marked by an unusual degree of popularity among his fellow-students. After his graduation he taught in the Public Latin school of Boston from September, 1855, to February, 1856, and in October, 1856, he entered the Theological Seminary in Alexandria, Va. He had been confirmed by Bishop Eastburn in St. Mary's Church, Dorchester, Mass., on July 2, 1856, and he was ordained deacon at the Theological Seminary on July 1, 1859, by Bishop Meade, of Virginia, and delivered his first sermon in St. George's Church, Fredericksburg, Va., on July 3. Previous to his graduation at the seminary Mr. Brooks had consented to serve for three months as temporary supply at the Church of the Advent, Phila-

delphia, where he entered upon his duties on July 10, 1859, and on Oct. 16 of the same year he assumed the place of rector, which he had accepted on the termination of the three months of trial. He was ordained priest by Bishop Alonzo Potter on May 31, 1860.

Mr. Brooks's rectorate of the Church of the Advent continued until January, 1862, when he became rector of the Church of the Holy Trinity in the same city, which place he occupied until he assumed the rectorship of Trinity Church, Boston, in October, 1869. During these ten years of residence in Philadelphia his reputation as a preacher became thoroughly established and was recognized throughout the country. In the civil war his patriotic efforts in behalf not only of union but also of freedom called wide attention to his ability as a thinker and an orator. His sermon entitled "Our Mercies of Reoccupation," on Thanksgiving Day, 1863, and the one on April 23, 1865, in memory of Abraham Lincoln, were widely circulated, and had a deep effect upon public opinion throughout the country. He was not only largely influential in increasing moral enthusiasm for the prosecution of the war, but also advocated boldly and ably the cause of the negro, claiming for him equal political rights with white men, and interesting himself in many projects for his education and improvement. His pulpit and parish work were noted for their thoroughness and earnestness, and he identified himself with the interests of the evangelical societies in the Protestant Episcopal Church, and was constant in his labors in their behalf. His wide interest in missionary and philanthropic projects brought him into connection with all who were active in the charities of the country, and his advocacy was relied upon for all good causes.

In July, 1865, after the close of the war, Mr. Brooks offered the prayer at the commemorative services at Harvard College, and immediately afterward he sailed for Europe on leave of absence from his church for a year. He visited Ireland, England, and the Continent of Europe, and Palestine and Egypt, and returned to the United States in September, 1866. This was the first of a series of journeys which continued through all his life, and which not only rendered him a traveler of large experience, but also furnished the opportunity for the spread of his reputation as a preacher and for the cultivation of acquaintance with men of letters in Europe. In 1870 he visited Switzerland and the Tyrol, and on his return he was in Paris at the time of the overthrow of the Government of Louis Napoleon. In 1872 he visited Norway, Sweden, and Russia, traveling as far as Nizhni Novgorod. In 1874 he visited France, and on this trip he preached in Westminster Abbey, being the first American clergyman to receive an invitation to do so. In 1877 and 1880 he revisited familiar ground, and in July, 1880, preached at Windsor Castle before Queen Victoria. In 1882-'83 he was absent from home for more than a year, spending several months in study in Germany, and visiting India, and on his return passing several months in England, the memory of which is embodied in his published volume, "Sermons preached in English Churches." In 1885 he preached at the Uni-



versities of Cambridge and Oxford, and at the latter received the degree of doctor of divinity. In 1886 he made the trip across the continent to San Francisco, and in 1889 visited Japan. In 1890 and 1892 he again visited England, where he was received with enthusiasm by a host of friends and listened to by large congregations, and also extended his trips to the Continent of Europe for rest and recreation.

In October, 1869, Mr. Brooks removed from Philadelphia to his native city, and became the rector of Trinity Church. Here his close relation with the thought and interests of the community, his remarkable ability as a preacher, his breadth of conception of the power and character of Christianity, his intense earnestness, his faithfulness to all parish duties, his wide sympathy with rich and poor, his large cultivation and charming personality, won for him the affection of the whole community, and steadily, until the time of his death, his influence increased until he became the representative man in the city of Boston. His connection with Harvard College, of which he was an alumnus, was very close. Immediately on his removal to Boston he was elected in 1870 an overseer, an office which he held for two successive terms, retiring in 1882, when he received the degree of doctor of divinity from the college. He was again elected



TRINITY CHURCH, BOSTON, MASSACHUSETTS.

overseer in 1883, and served until 1889. In 1881 he was invited to become Preacher to the University and Plummer Professor of Christian Morals—an invitation which he declined after long and serious consideration. In 1886, on the establishment of a body of preachers to the university, he was one of the first number appointed, and he continued in this relation to the college until he was elected bishop in 1891. Dr. Brooks again received the degree of doctor of divinity in 1887 from Columbia College at its centennial anniversary. On Oct. 10, 1872, Trinity Church was destroyed in the great Boston fire. Before that event plans had been made for the removal of the church to a new part of the city and its construction on an enlarged scale. The destruction of the old building caused the undertaking to be pressed more vigorously, and the new Trinity Church, at the corner of Huntington Avenue and Clarendon Street, was consecrated on Feb. 9, 1877. Meantime the congrega-

tion had worshiped in the hall of the Technological Institute, which was near the site of the new building. The construction of this building is a permanent memorial of the ministry of Dr. Brooks. In many features it marks an era in the church building of this country. Its architect, Henry H. Richardson, and its decorator, John La Farge, here first showed the full scope of their genius.

In 1877 Dr. Brooks delivered for the Divinity School of Yale College the Lectures on Preaching on the foundation established in 1871 by Henry N. Sage. These lectures, in accordance with the custom of the lectureship, were published, and immediately attracted wide attention, and in 1893 the sale of the American editions has reached 7,500. In 1883 they were translated into French, and in 1885 into Dutch. The demand for them overcame, to a certain extent, Dr. Brooks's reluctance to publish his sermons, and in 1878 his first volume of sermons appeared. In 1879 he delivered the Bohlen Lectures in Philadelphia, and in the same year they were published under the title "The Influence of Jesus." In answer to an increasing demand, other volumes of sermons were given to the public. In 1881 appeared "The Candle of the Lord, and other Sermons"; in 1883, "Sermons preached in English Churches"; in 1887, "Twenty Sermons"; and in 1890, "The Light of the World, and other Sermons." In 1893, after his death, a volume of his sermons appeared, selected and arranged by his brother William G. Brooks. All these volumes have also been published in England. Other volumes of published sermons are in contemplation, the demand for which is indicated by the fact that of all the volumes of his sermons the total number issued in the United States up to December, 1893, has been 60,000.

On April 23, 1885, Dr. Brooks delivered an oration on the occasion of the two hundred and fiftieth anniversary of the Public Latin School of Boston, which was published in the same year under the title "The Oldest School in America." In 1887 he delivered two lectures in New York before the students of the General Seminary of the Protestant Episcopal Church, which have been published under the title of "Tolerance." Other publications of his include various occasional sermons and magazine articles, among which may be mentioned one on "The Pulpit and Popular Skepticism," published in the "Princeton Review" in March, 1879, and one on his friend Dean Stanley, published in the "Atlantic Monthly" in October, 1881. He was frequently a speaker and writer at the sessions of the Church Congress of the Protestant Episcopal Church, and he also contributed to the "Memorial History of Boston" a paper on "The Episcopal Church in Boston," which was afterward published, with but few changes, in "The Centennial History of the American Episcopal Church," under the title "A Century of Church Growth in Boston." One of a series of lectures before Phillips Exeter Academy was delivered by him in 1886, and has been published in separate form for educational uses under the title "Biography." Dr. Brooks wrote several Christmas and Easter carols, one of which, "O Little Town of Bethlehem!" has found a place in the

hymnal of the Protestant Episcopal Church. Reports of certain extemporaneous addresses and sermons were made against his protest during his life and have appeared in book form since his death.

Dr. Brooks was one of the deputies from Massachusetts to the General Convention of the Protestant Episcopal Church in 1877, 1880, 1883, 1886, and 1889. In June, 1886, he was elected assistant bishop in the diocese of Pennsylvania, but declined the office. On the death of Bishop Paddock, of Massachusetts, in March, 1891, the name of Dr. Brooks, who was then chairman of the standing committee of the diocese, became prominent among the candidates for the vacant episcopate. Much interest in the election was shown by the secular press throughout the State, and the desire that he should be chosen was very general, even among those who had no connection with the Episcopal Church. He was elected in the convention of the diocese on April 30, 1891, on the first ballot, by 92 votes of the clergy out of a total of 154, and by 71 votes of the laity out of a total of 109. Some newspaper discussion ensued upon the subject of the confirmation of Dr. Brooks by the bishops and standing committees of the various dioceses. In July the necessary assent to his election was completed, and he was consecrated on Oct. 14, 1891, in Trinity Church, Boston, by the Rt. Rev. John Williams, D. D., Bishop of Connecticut and Presiding Bishop of the Protestant Episcopal Church. Bishop Brooks resigned the rectorship of Trinity Church before the date of his consecration, and devoted himself to the duties of his new office with that untiring zeal and enthusiasm which had been characteristic of his whole life. He was warmly received in all parts of his diocese by every class in the community and by persons of every religious connection. In October, 1892, he occupied his place in the House of Bishops in the General Convention, which met in Baltimore.

But his episcopate was of short duration. On Jan. 18, 1893, he attended the annual dinner of the Choir Guild of Grace Church, in Newton, Mass., and made an address. It was his last public appearance. He was then suffering from a cold, which showed serious symptoms during the following days, and developed into bronchial diphtheria, from which he died early on Monday morning, Jan. 23, 1893. His unexpected death caused a great shock wherever he was known. In the city of Boston the grief was universal. His remains were viewed by thousands in the vestibule of Trinity Church. The funeral took place on Thursday, Jan. 26. No building could hold the multitude that gathered, and after the services in the church a service was held in Copley Square, in front of the church, where crowds were assembled. Services were also held at the same hour in the neighboring churches and in Philadelphia. His burial place is in his father's plot at Mount Auburn. Hundreds of memorial sermons and addresses, many of which have since been published, were delivered, at home and abroad, by clergymen of every denomination, and the city of Boston provided for a public eulogy by Samuel Elliott, LL. D., which was delivered on April 11, 1893. A public meeting in New York on Feb. 16, at Carnegie Music Hall,

was addressed by eminent speakers, among whom was a Jewish rabbi as well as Christians of every name.

Since Bishop Brooks's death a volume of his letters of travel has appeared, and also a volume of short selections from his writings for devotional uses. His miscellaneous papers and addresses will be prepared for the press by his brother, the Rev. John C. Brooks, rector of Christ Church, Springfield, Mass., and his biography is in preparation by his brother, the Rev. Arthur Brooks, D. D., rector of the Church of the Incarnation, New York city.

Bishop Brooks's personal appearance was such as always to attract attention. He was 6 feet 4 inches in height, and of commanding presence. The noble proportions of his figure increased the charm of his genial and scholarly bearing and expression, which made themselves felt universally. His mode of speech was exceedingly rapid, but was clear and distinct. He was easily understood by all classes, by reason of his clearness of thought and simplicity of language and rich use of illustration. He was an indefatigable worker, willing to preach at all places and all times. Both with manuscript and extemporaneously he appealed at once to the hearts and minds of hearers, and held them captive by the rush of his thought and his poetic utterances. His large reading and ripe scholarship showed itself in a power of adaptation to the minds of many men by reason of a deep understanding of the humanity that belonged to them all. He repeated his sermons in places differing widely in character, and they were equally acceptable and helpful in all. His preaching was free from sensational features; seldom, except in critical times, did he refer to current topics. No strange subjects were given out in order to attract attention, and every trick of style was conspicuously absent in his methods. His attractiveness to all classes of men grew with the advance of years. His nobility of character and purity of motive and kindness of heart were a subject of universal comment. His printed sermons drew attention to him in all parts of the world, and wherever he went his fame had preceded him. To the clergy of all denominations his sermons have been especially helpful and stimulating. The secret of their power has been a subject of much discussion, for their eloquence, poetry, logic, and original thought were never obtrusive, but were blended under the influence of a deep spirituality and love for men which made analysis of the effect they produced peculiarly difficult.

Bishop Brooks, through all his life, was identified with the Broad Church clergy. His training was in the evangelical school, but without dogmatism, and the devotion to the personal Christ, which was thus given him, grew as the prominent feature of his theology. His mind was eminently constructive. Old forms of thought and expressions of doctrine received new meaning under his large and intelligent and spiritual interpretation of them. There was no hostility toward ideas that he had outgrown, and which to him had been the starting point in the search for new truth. He was intensely loyal to all the doctrines and discipline of his own Church, but he claimed the right of free and large interpretation in their use, and of Christian charity



and fellowship with all who were servants of the truth under any name. He deprecated all movements and tendencies that looked toward separation of the Episcopal Church from connection with the religious life of the country; and ecclesiastical theories of exclusive claims or of priestly authority met with his instant opposition. He exercised a large influence in drawing persons to the Episcopal Church by his illustration of its comprehensiveness and spirituality, and during thirty-five years of active life as a clergyman he probably did more than any other man by his personal character and influence, and by his preaching and writings, to guide and to assist those who were most in sympathy with the powerful movements in speculative and religious thought which have characterized the latter half of this century.

**BULGARIA**, a principality in eastern Europe, tributary to Turkey. It was created by the Treaty of Berlin, signed July 13, 1878, which provides that the Prince of Bulgaria shall be elected by the population, which election must be confirmed by the Sublime Porte and the signatory powers. Ferdinand, Duke of Saxony, born Feb. 26, 1861, youngest son of Prince August, Duke of Saxony, and Princess Clementine, daughter of Louis Philippe, King of the French, was elected Prince of Bulgaria by the unanimous vote of the Great Sobranje on July 7, 1887. He assumed the Government on Aug. 14 of the same year without having obtained confirmation from the Porte or the sanction of the great powers, which was and has been withheld up to date by reason of the objection of the Russian Government. The Constitution of 1879 vests the legislative authority in a single Chamber, the Sobranje or National Assembly. Its members are elected by universal manhood suffrage, in the proportion of 1 member to every 10,000 inhabitants, for the term of three years. Eastern Roumania, now called South Bulgaria, was created an autonomous province of Turkey by the Treaty of Berlin, to be administered by a governor-general appointed by the Sublime Porte for five years, with the consent of the powers. On Sept. 17, 1885, the Government was overthrown and the union with Bulgaria proclaimed. As a result of a conference of the signatory powers, the Sultan appointed Prince Alexander, then Prince of Bulgaria, Governor-General of Roumelia. When the latter was forced to abrogate, his successor took upon himself the Governor-Generalship as well, but neither the union nor the rights assumed by Prince Ferdinand have ever been recognized by the Porte or the powers, although the province to-day forms part of the principality of Bulgaria.

**Area and Population.**—The area of Bulgaria proper is 24,360 square miles, that of South Bulgaria 13,500 square miles. The total population on Jan. 1, 1888, numbered 3,154,375, of which 1,605,389 were males and 1,548,986 females. Of the total population, 2,432,154 belong to the Orthodox Greek Church, 668,173 are Mohammedans, 24,352 Jews, and 18,539 Catholics. Sofia, the capital, has a population of 30,428; Philippopolis, the capital of Roumelia, has 33,442 inhabitants; and Varna, on the Black Sea, has a population of 25,256. (For the army, see the "Annual Cyclopædia" for 1892.)

**Finances.**—The budget for 1892 places the revenue at 82,647,400 lei or francs, and the expenditure at 88,248,075 lei. The principal sources of the revenue and the amounts derived therefrom in 1892 were: Direct taxes, 43,762,400 lei; customs and excise, 16,083,000 lei. The principal items of expenditure were: Army, 21,855,850 lei; public debt, 13,853,525 lei; finance, 13,177,200 lei; public works, 11,326,175 lei; interior, 9,216,800 lei; instruction, 6,756,400 lei.

**Commerce.**—The total imports in 1891 were valued at 81,348,150 lei, and the exports at 71,055,085 lei. The chief imports were textiles, to the amount of 20,961,000 lei; articles of food and drink, amounting to 15,042,863 lei; chemicals, 8,155,425 lei; metals and metal goods, 7,017,292 lei; machinery, etc., 8,778,507 lei. The principal exports were grain, amounting to 53,430,411 lei; and live stock to the amount of 6,000,000 lei. The following table shows the trade with the principal countries in the same year in lei:

COUNTRIES.	Imports from	Exports to
Austria.....	33,992,704	3,131,554
Great Britain.....	15,994,828	16,775,004
France.....	3,968,888	24,257,106
Turkey.....	10,009,325	17,147,323
Germany.....	4,916,761	1,044,921
Russia.....	5,453,299	87,812
Italy.....	1,400,036	1,471,665
Roumania.....	1,816,464	689,924
Belgium.....	1,440,592	702,187
Servia.....	909,261	585,001
Switzerland.....	948,590	6,947
Greece.....	170,192	446,751
United States.....	57,485	7,722

**Communications.**—In 1892 Bulgaria had 806 kilometres of railroads, of which 494 kilometres belonged to the state and 312 kilometres to private companies. There were 31 kilometres under construction.

The post-office in 1890 forwarded 3,698,000 letters, 876,000 postal cards, 3,466,000 printed inclosures and samples, and 77,000 money orders of the declared value of 17,353,000 francs.

In 1891 there were 4,710 kilometres of telegraph lines belonging to the state, with 8,484 kilometres of wire. There were transmitted over the wires 742,295 domestic dispatches, 181,895 international and 23,203 official dispatches.

**Proposed Change in the Law of Succession.**—The Constitution of Tirnova makes the princely dignity hereditary in the family of the prince duly elected by the National Assembly, confirmed by the suzerain power, and approved by the signatories of the Berlin Treaty. In case of a vacancy the election of a new prince shall take place under the same conditions and with the same forms. The prince first elected may belong to a different confession from the state religion, but his successor must be a member of the Greek Orthodox Church. The Bulgarian jurists decided that this last rule did not apply to a new prince, and consequently did not incapacitate Prince Ferdinand, a Catholic, when he was elected to succeed Alexander of Battenberg. The son of an elected prince, however, could not succeed to the throne unless he was a member of the Orthodox Church. An attempt to sow the seeds of religious rancor had been made by pro-Russian intriguers, who accused the

Prince and his mother of proselyting designs, and the visit of the latter at Sofia was made unpleasant by the outcry against the services of her chapel. The diplomatic world was dumb-founded in the latter part of 1892 when the Bulgarian Prime Minister laid before the ordinary Sobranje a project for amending the Constitution in order to permit the Prince to bring up his heir, if he should have one, in the Catholic faith. It was understood that Ferdinand was anxious to found a dynasty, a desire that augured well for the security of his position, and the accomplishment of which would tend to consolidate it, even though an alliance with a Catholic princely family was found most desirable, since the attitude of the Czar shut the Prince out from any suitable match in an Orthodox family; but to permit the Catholic Church to stipulate that a born Bulgarian prince must be a Catholic and require the Bulgarians to alter their Constitution, with the probable result of establishing a Roman Catholic dynasty on the throne, seemed doubly hazardous. The constitutional amendment, as reported by the committee of the Sobranje on Dec. 19, 1892, runs as follows:

The Prince of Bulgaria and his descendants can profess no other religion than the Orthodox religion. Nevertheless, a prince ascending the Bulgarian throne by right of election, and also his first successor, if they belong to another religion, may retain it.

This was agreed to by the Chamber, with only 13 dissenting votes. The Russian ambassador at the Porte had suggested to the Bulgarian exarch in Constantinople that he should menace those who voted for the revision with excommunication. The latter made the proposition to the Bulgarian Government that the Holy Synod should be invited to deliver an opinion on the ecclesiastical bearings of the amendment before the Great Sobranje took action upon it, but refrained from positive measures. Dragan Zankoff, the exiled chief of the Russophile party, issued a manifesto appealing to patriots, especially officers and soldiers of the army, to rise and deliver the country from the clutches of false friends and avert the general danger that threatened the whole Bulgarian people. An exposure of Russian intrigue published by Jacobsohn, the former dragoman of the Russian legation at Bucharest, had done much to keep alive the popular distrust of the Russians. The Metropolitan Clement on Feb. 26 delivered an incendiary sermon at Tirnova urging the people to oppose the Government as far as lay in their power, in consequence of which members of his congregation and other citizens sent a deputation to request him to refrain from inciting revolution; and when he declared in a speech to the crowd assembled before his residence that he would continue in the same course, he was forcibly carried off and imprisoned in a monastery, and a telegram signed by the mayors of Tirnova and other towns and several members of the Sobranje was sent to the Stambuloff, requesting the Government to regard his removal as an accomplished fact, since the people declined to submit to a bishop who had always ignored the true interests of Bulgaria. The exarch, who had abandoned his opposition to the proposed change in the Constitution, promised to move in the matter should it be established conclusively that

Mgr. Clement had abused the sanctity of the Church in order to excite the population. The question of his removal or the infliction of any ecclesiastical penalty was brought before the Holy Synod, and the Government refused to sanction his illegal deposition by the people, but was ready to have him tried for incitement to insurrection.

The first declaration of the Russian Government in regard to the Bulgarian crisis was an official *communiqué*, printed in the "Government Messenger," defining its position in the following language:

Since these leaders of the Government now propose to convene the Sobranje in order to modify Article XXXVIII of the Constitution of Tirnova, and thus encroach upon the religion of the country, the Imperial Government, while adhering to the principle of non-intervention in the internal affairs of the principality, can not remain a dumb witness of an experiment which encounters active opposition among the Bulgarian people. The Imperial Government expresses its earnest desire that the voices which have made themselves heard among the clergy and the well-disposed citizens will serve as a warning to all Bulgarians, without distinction of party, and ward off a danger threatening the whole people, which is on the point of renouncing the most sacred traditions of centuries. The Imperial Government is convinced that the contemplated revolution in the ecclesiastico-political life of the principality will achieve no favorable results, and will have only sad consequences in the future, inasmuch as it will produce internal dissensions, and will seriously disturb the moral relations of the people.

This *communiqué* was sent to the Russian ambassadors, accompanied by a circular letter stating that the Imperial Government had obeyed considerations of a paramount order in refusing to recognize a *régime* deprived of legal sanction, which it had always regarded as contrary to the interests of the Bulgarian nation. The ground is taken that a decision of a Bulgarian Assembly with reference to the dynastic question is subject to dispute because the treaty of Berlin establishes no reigning dynasty in the principality. It stipulates how the Prince shall be elected, and that the same conditions and procedure shall be observed in choosing a successor in case of a vacancy, but contains no provision that "gives to the power of the Prince an hereditary character." The circular defines the special position of Russia in the following terms:

But it is not merely as one of the signatory powers of the Treaty of Berlin that Russia believes it is her duty to raise her voice in the present circumstances. By profoundly wounding the religious feelings of the Bulgarian nation, the measure proposed by the Sofia Government would deal a severe blow at the work of liberation, in the service of which Russia has not spared her blood. The proceedings employed by those who at present govern the principality are known. They will permit these rulers perhaps to gain their ends. But it is our duty none the less to stigmatize as it deserves an undertaking tending to retard the free development of the national life, in disregard of the principles and historic traditions which lie at its foundation. No power would show itself indifferent toward a positive attempt against an order of things which it had sought to cement at the price of the greatest sacrifices. It certainly was not in order to implant in Bulgaria the present *régime* that Russia created the principality by force of arms. Persuaded that the blow now being dealt at the Bulgarian Constitution can only drag in its train fright-



ful consequences, we have wished to warn those who are destined to endure them.

The Metropolitan Clement was tried, in July, on the charge of inciting the people against the Prince and Government. The incriminating passage in his sermon was: "The people will punish persons in high places for any injury done to our faith." This was adjudged to be seditious, and he was sentenced to perpetual exile. The Russian Government, after the adoption of the constitutional amendment, presented a demand for the payment of 2,000,000 rubles due from Bulgaria, on account of the Russian occupation in 1878-'79. If this was paid, there would remain due, under the treaty of June 28, 1883, the sum of 3,018,250 rubles, besides a smaller amount for arms furnished to Bulgarians. When a similar demand was made by Russia in 1889 the Bulgarian Government had the money already deposited to meet it, but this time it was prepared to present claims for money intrusted by Bulgarians to the Russian legations or banks or left with the Russian Government to aid the war of liberation, which more than offset the amount still due to Russia.

**Marriage of Prince Ferdinand.**—Before the Great Sobranje had met to ratify the constitutional revision, the Prince, accompanied by his chief minister and the Minister of Foreign Affairs Grekoff, free from all apprehension of political disorder, paid a visit to the Court of Vienna. The attentions paid to the Prince and the conferences of Stambuloff with the Emperor and Count Kalnoky gave proof of the determination of Austria to prevent, by armed force if necessary, the interference of any foreign power in Bulgaria. The raising of a loan of 26,000,000 francs for Bulgaria in Berlin afforded a fresh indication of the policy of the triple alliance to preserve the *status quo* in the Balkans. The princess that Ferdinand had chosen was related to the Austrian imperial family. It was Marie Louise, the eldest daughter of the Duke of Parma, a Bourbon of the Spanish line, whose mother, a princess of Bourbon-Artois, protested as regent against the annexation of the duchy to Sardinia in 1859, when the duke was eleven years old. The mother of the Princess Marie Louise was likewise a Bourbon, of the house of the Two Sicilies. His marriage into a family whose fortunes were peculiarly connected with the Roman Church absolved Ferdinand of the odium of insisting that his prospective heir should be reared as a Catholic, and his own descent on the maternal side from the Orleans Bourbons was an additional reason. The princess was born in Rome, Jan. 17, 1870. The marriage took place at the residence of the Duke of Parma at Viareggio, Italy, April 20.

**Revision of the Constitution.**—The Great Sobranje met May 15 to act upon several amendments of the Constitution proposed by the Government, for the consideration of which the ordinary Sobranje had authorized the convening of a Grand National Assembly, the fourth one held since the foundation of the principality. The Assembly was called not merely for the purpose of modifying the statute relating to the religion of the Prince's successor, but also for introducing changes in the system of representa-

tive government that might be considered suitable to Bulgarian conditions, though undemocratic, if Bulgaria was not ruled by a dictator whose powers they enlarge. These changes consist in the extension of the duration of the ordinary Sobranje from three to five years, and the reduction of the number of its members from 320 to 161, with a corresponding diminution of members in the Great Sobranje, which had twice as many as the ordinary Chamber. The proportion to population was 1 to 10,000 for the regular Chamber, and 1 to 5,000 for the Constitutional Congress, whereas the amended law makes it 1 to 20,000 and 1 to 10,000 respectively. The necessary quorum in the Sobranje for the enactment of any measure is henceforth to be fixed at a third of the total number of Deputies. The voting is to be open, but the Chamber may decide on secret voting at the demand of 10 or more Deputies. In addition to these amendments it was proposed to change the title of highness, bestowed on the Prince by the Constitution as originally made under the direction of Prince Dondukoff Korsakoff, to that of royal highness. Prince Ferdinand's desire to assume the title of king was vetoed, probably by the friendly powers which have not yet been able to obtain the legalization of his position as Prince of Bulgaria. Another amendment, while continuing to prohibit the creation of hereditary titles in Bulgaria, empowers the Prince to bestow orders and decorations for merit, thus giving legal sanction to the order of civil merit introduced by Prince Ferdinand and that of St. Alexander which his predecessor established. Under special circumstances the Prince is empowered to raise a loan of 3,000,000 francs, or to make an expenditure of 1,000,000 francs without previous authorization from the Chamber, but subject to its subsequent approval. An increase in the number of Cabinet ministers is authorized by a special enactment of the ordinary Sobranje. The object of this proposal was to legalize the intended appointment of a minister of agriculture and a minister of public works. The various constitutional amendments were embodied in a bill, which was passed unanimously on May 28, and on the following day the Great Sobranje was closed with an address by the Prince, in which he said:

The unanimous consent with which my people have accepted the law for the change of the Constitution is a fact patent to all, and a clear proof of the unbounded love of the Bulgarians for their beautiful country, as well as of the tact and wisdom with which they know how to protect their rights and their freedom, and to preserve their political independence.

**Elections.**—The elections for the Sobranje took place on July 30. In the new house of 161 members the Government secured 152 seats. This enormous majority, taken in connection with the fact that nearly four fifths of the electors abstained from voting, reveals the arbitrary nature of the Stambuloff *régime*, and indicates what are the causes of revolutionary uprisings, military conspiracies, and ecclesiastical incendiarism, and the motives that led to the flight of Zankoff, the imprisonment of Karaveloff, the court-martial and execution of Panitza, the retirement of Radoslavoff, and the violent removal of the Metropolitan Clement.

## C.

**CALIFORNIA**, a Pacific coast State, admitted to the Union Sept. 9, 1850; area, 158,360 square miles. The population, according to each decennial census since admission, was 92,597 in 1850; 379,994 in 1860; 560,247 in 1870; 864,694 in 1880; and 1,208,130 in 1890. Capital, Sacramento.

**Government.**—The following were the State officers during the year: Governor, H. H. Markham, Republican; Lieutenant-Governor, J. B. Reddick; Secretary of State, Edward G. Waite; Treasurer, J. R. McDonald; Comptroller, Edwin P. Colgan; Attorney-General, W. H. Hart; Surveyor-General, Theodore Reichert; Superintendent of Public Instruction, James W. Anderson; Railroad Commissioners, William Beckman, J. M. Litchfield, and James W. Rea; Chief Justice of the Supreme Court, W. H. Beatty; Associate Justices: T. B. McFarland, A. Van R. Paterson, C. H. Garoutte, Ralph C. Harrison, J. J. De Haven, and W. F. Fitzgerald, appointed by the Governor to succeed J. R. Sharpstein, who died Dec. 28, 1892.

**Finances.**—According to the report of the State Treasurer, there was a balance in the treasury on July 1, 1890, of \$3,565,259.36; the total receipts for the year ensuing were \$8,231,298.93, and the total expenditures \$7,955,689.94, leaving a balance on July 1, 1891, of \$3,840,863.35. For the year next following the total receipts were \$7,309,430.94, and the total expenditures \$7,900,069.99, leaving a balance of \$3,250,229.30 on July 1, 1892. These figures include all the funds held by the State Treasurer. The separate receipts and expenditures of the more important of these funds were as follow: General fund—balance on July 1, 1890, \$1,830,636.85; receipts for the year ensuing, \$3,721,855.55; expenditures, \$3,585,249.91; balance on July 1, 1891, \$1,967,242.49; receipts for year ending July 1, 1892, \$2,712,189.98; expenditures, \$3,496,572.91; balance on July 1, 1892, \$1,182,859.56. School fund—balance on July 1, 1890, \$420,160.64; receipts for the year ensuing, \$2,661,505.70; expenditures, \$2,632,211.98; balance on July 1, 1891, \$449,454.36; receipts for the year ending July 1, 1892, \$2,845,372.19; expenditures, \$2,387,168.09; balance on July 1, 1892, \$907,658.46. Interest and sinking fund—balance on July 1, 1892, \$194,126.84; receipts for the year ensuing, \$203,403.87; expenditures, \$183,482.50; balance on July 1, 1891, \$214,048.21; receipts for the year ending July 1, 1892, \$114,299.12; expenditures, \$157,370.79; balance on July 1, 1892, \$170,976.54. State school land fund—balance on July 1, 1890, \$48,140.17; receipts for the year ensuing, \$197,793.02; expenditures, \$189,505.12; balance on July 1, 1891, \$56,428.07; receipts for the year ending July 1, 1892, \$198,951.71; expenditures, \$194,846.40; balance on July 1, 1892, \$60,533.38. The large reduction in the general fund balance is due to unusual demands made by many of the counties for aid granted by the State for the care of aged persons and orphans. Claims for this aid should have been paid in

former years, but, owing to imperfect knowledge of the law, have never before been presented.

The State debt on Jan. 1, 1893, was \$2,533,500, of which all except \$5,000 is represented by funded debt bonds of 1873. These became due on Jan. 2, but no provision had then been made by law for their redemption. The Legislature of 1891 passed an act providing for refunding them at a lower rate of interest, but made it operative only after its approval by the people at the November election in 1892. At this election a majority of the voters refused their approval, and the Legislature of 1893 was obliged to devise some other means for sustaining the credit of the State. There were in the hands of private individuals \$251,000 of these bonds, for redeeming which an appropriation was made; but as there were no funds in the State treasury for meeting the remaining \$2,277,500, which were held by the school fund and university fund, an act was passed by which the State agreed to pay to these funds 6 per cent. interest on the amounts held by each, and provision was made for levying annually a tax sufficient to raise the necessary amount.

Owing to the very liberal appropriations made by the Legislature, the tax rate for 1893 was increased by the State Board of Equalization to 57.6 cents on each \$100. The total amount to be raised by this tax for State expenses was \$6,460,939.

**Legislative Session.**—The regular biennial session of the Legislature began on Jan. 2 and ended on March 14. On Jan. 18 both Houses, in joint convention, elected Stephen M. White, Democrat, on the first ballot, as United States Senator to succeed Charles N. Felton, Republican, the vote being as follows: White, 61; Felton, 12; George C. Perkins, 11; Thomas R. Bard, 9; D. C. Reed, 8; Thomas V. Cator (Populist), 7; Widney, 6; scattering, 5. One result of the session was the passage of an act to promote the purity of elections. It provides that every candidate, upon filing his certificate of nomination, shall also file the names of five persons selected to receive, expend, audit, and disburse all moneys contributed or furnished for the purpose of aiding his election, and forbids any expenditure for such purpose by any person except the candidate himself and the five persons so named as his committee. Within twenty-one days after the official canvass of the election returns the committee is required to file with the Secretary of State or the county clerk, as the case may be, a sworn itemized statement, showing all its receipts, with the names of the persons contributing, and showing the names of all persons to whom money has been paid and the character of the services which they have rendered therefor. A similar sworn statement of his personal receipts and expenditures shall be filed by the candidate himself within fifteen days after the election is held. Such statements shall be recorded in the respective offices where they are filed, and shall be open to public inspection. Vouchers



must be filed for all expenditures except in the case of sums under five dollars. Any candidate who shall fail to file such a statement, or who shall make a false statement, shall, in addition to the other penalties prescribed by law, forfeit any office to which he may have been elected at the election mentioned in the statement, and also any State office of which he was already the incumbent. Neither the candidate nor the committee shall pay any money or incur any expense to promote his election, except for holding public meetings for the discussion of public questions, for printing and circulating specimen ballots, handbills, cards, and other papers, for advertising, postage, expressage, telegraphing and telephoning, for supervising the registration of voters, and watching the polling or counting of votes cast at the election, for salaries of persons employed at office or headquarters, and necessary expenses of maintaining the same, for rent of rooms necessary for the transaction of business of the candidate or committee, and for necessary incidental expenses not exceeding \$100, if expended by the candidate, or \$1,000, if expended by the committee. The total amount that any candidate or committee may expend is also limited to a fixed percentage of the salary of the office that the candidate seeks. Any candidate who makes any payment contrary to the provisions of the act shall forfeit the office to which he is elected, and any other State office which he may then hold. Any person may bring suit against any candidate to have his right to any office forfeited for violation of this act. Numerous other stringent regulations are made, and numerous offenses against the fair conduct of elections are defined and punished.

Another act provides for the reassessment of property for all taxes made after 1879 wherein the original assessment has been declared invalid or may hereafter be so declared. In recent years the State has found great difficulty in collecting taxes from some of the railroad corporations, its assessments, after long litigation, being often declared invalid by the courts. By this act the State attempts to recover the amounts so lost, and to prevent future litigation.

The term of office of the Supreme Court Commissioners was extended for another period of four years, the regular docket of this court being still too large for the judges to dispose of without great delay to litigants. The office of Commissioner of Public Works was established for the term of four years, its incumbent being required to perform such duties as the Governor shall direct in the examination of lands subject to overflow by flood waters and in the preparation of plans and estimates for constructing works to control such flood waters. The sum of \$30,000 was appropriated for his use in this work.

State officers and employees were forbidden to create any deficiency in excess of any appropriation made by law, except in case of actual necessity, and then only upon written authority of the Governor, Secretary of State, and Attorney-General. The State will not be liable for any indebtedness incurred contrary to this regulation.

Employers were forbidden to require from their employees more than six days' work in

seven. Subject to the approval of the electors residing therein, the county of Riverside was created out of the southwest part of San Bernardino County and the northern part of San Diego County; the county of Madera out of the northern part of Fresno County; and the county of Kings out of the western part of Tulare County.

Constitutional amendments were proposed for submission to the people at the next general election, changing the State capital from Sacramento to San José, provided the State shall receive a gift of 10 acres as a site for the Capitol, and a gift of \$1,000,000 as a building fund therefor; authorizing the Legislature to provide by general law for the establishment of new counties; establishing an educational qualification for voters; exempting from taxation young fruit and nut-bearing trees and grapevines, and the property of free public libraries and free museums; making the President and Professor of Pedagogics of the State University members of the State Board of Education; and fixing the compensation of legislators at \$1,000 and mileage, instead of the present *per diem* allowance.

Legislation respecting the State debt, the State series of school text-books, and hydraulic mining is elsewhere considered.

Resolutions were adopted favoring the annexation of the Hawaiian Islands.

Other acts of the session were as follow:

To abolish all fees or commissions paid by the State to any officers for services in the assessment, equalization, auditing, and collection of *ad valorem* taxes.

To prevent combinations to obstruct the sale of live stock.

Requiring all street-railroad companies hereafter granted franchises in public streets to allow mail carriers in discharge of their duty to ride free.

Authorizing suits against the State and regulating the procedure therein.

Establishing a naval battalion, to be attached to the National Guard of the State.

Making prize fighting a felony punishable by a fine of not less than \$1,000 nor more than \$5,000, and by imprisonment not less than one year nor more than three years.

Revising the law governing the State militia.

Creating a commission for investigating and reporting upon the Torrens Land-Transfer act of Australia.

To provide for the planting, maintenance, and care of shade trees upon streets, lanes, alleys, courts, and places within municipalities, and of hedges upon the lines thereof, and for the eradication of certain weeds within city limits.

To compel savings banks to publish every two years a sworn statement of all unclaimed deposits.

Making the ninth day of September and the first Monday of October legal holidays.

Establishing a tax on collateral inheritances, bequests, and devises.

Making it unlawful to refuse admission to places of amusement.

Abolishing the State Board of Forestry.

Establishing a board of commissioners of building and loan associations.

Requiring the State Board of Prison Directors to fix from time to time the price of jute goods manufactured at the State Penitentiary, and forbidding sales of such goods to any but consumers. [This law, being in restraint of trade, is probably unconstitutional.]

Appropriating \$98,000 for the erection of an additional wing to the main building of the California Home for the Care and Training of Feeble-Minded

Children at Glen Ellen, Sonoma County, for the female department.

Appropriating \$145,000 for completing the building of the Preston School of Industry at Ione.

Appropriating \$100,000 for completing the female ward of the Mendocino State Asylum.

Appropriating \$117,500 for a new building and other improvements at the Southern California Insane Asylum.

Appropriating \$15,000 for completing and preserving Sutter's Fort.

Appropriating \$75,000 for a new building for the State Normal School at Los Angeles.

Appropriating \$25,000 for the completion and printing of a volume expository of the resources of the State, to be distributed at the World's Fair, Chicago.

Appropriating \$63,500 for a new building and other improvements at the Deaf, Dumb, and Blind Asylum.

Appropriating \$100,000 for additional improvements at the Reform School for Juvenile Offenders at Whittier.

**United States Senator.**—On June 21, by the death of Leland Stanford, the State lost the services of her senior Senator in Congress. As the Legislature was not then in session, Gov. Markham, on July 22, appointed ex-Gov. George C. Perkins as his successor until the meeting of the next Legislature.

**Education.**—The following public-school statistics for the years ending June 30, 1891, and June 30, 1892, are contained in the last report of the Superintendent of Public Instruction:

ITEMS.	1891.	1892.
Children between 5 and 17 years .....	285,775	298,897
Number attending public schools.....	208,808	218,359
Number attending private schools....	22,587	21,001
Number not attending any school.....	59,380	59,537
Children of all ages enrolled in public schools.....	229,986	238,106
Average daily attendance .....	153,599	158,875
Male teachers .....	1,181	1,222
Female teachers .....	4,478	4,669
Monthly salary, male teachers.....	\$82 11	\$82 96
Monthly salary, female teachers.....	\$66 48	\$66 12
Average school year in months.....	8 05	7 95
Number of schoolhouses .....	3,174	3,232
Total school revenue.....	\$6,039,553	\$6,322,965
Total school expenditures.....	\$5,112,500	\$5,351,891

The series of public-school text-books prepared under the direction of the State Board of Education, and published and sold by the State at cost prices, has not given entire satisfaction to teachers or pupils. In his report to the Legislature of 1893 the Superintendent of Public Instruction recommended that many of these books be revised or wholly rewritten, and, in accordance with his suggestions, an act was passed authorizing the Board of Education to revise the first, second, and third readers, the English grammar, the United States history, and the advanced arithmetic, and to compile a primary history of the United States. For these purposes \$25,000 was appropriated from the School-book fund.

**Statistics.**—The following statistics, showing the resources of the State for the year 1892, are compiled from the "San Francisco Chronicle": Assessed valuation of all property, \$1,275,816,228; assessed value of real estate, \$797,221,036; assessed value of improvements, \$249,630,321; assessed value of personal property, \$187,008,874; assessed value of railroads, \$41,956,000; total indebtedness of all counties, \$6,256,301; total deposits in savings banks, \$120,782,643;

total deposits in commercial banks, \$110,782,617; total deposits in private banks, \$1,858,908; total deposits in all banks, \$233,424,168; total merchandise imports at San Francisco, \$46,209,985; total merchandise exports from San Francisco, \$42,799,100; quicksilver product, 27,259 flasks; whaling catch of San Francisco fleet, \$1,250,000; wheat crop (Agricultural Department estimate), 38,554,000 bushels; wine receipts at San Francisco, 10,219,096 gallons; brandy product, 2,000,000 gallons; barley crop, 12,333,000 bushels; raisin crop, 57,162,000 pounds; prune crop, 30,000,000 pounds; wool crop, 34,000,000 pounds; hop crop, 39,750 bales; fresh fruit shipped east, 108,828,667 pounds; orange crop 1892-'93, 7,500 car loads; canned goods put up in the State, 971,000 cases; area of fruit trees now planted, 401,415 acres; area under ditch, 4,500,000 acres; area actually irrigated, 3,550,000 acres; average value of irrigated land, \$150 an acre; number of artesian wells, 3,500; area in peaches, 54,834 acres; area in prunes, 49,626 acres; area in oranges, 59,006 acres.

**Irrigation Congress.**—On Oct. 10 an international irrigation congress met at Los Angeles, at which more than 200 delegates were present, representing Kansas, Nebraska, Illinois, Tennessee, Washington, Arizona, New Mexico, Texas, Iowa, Connecticut, Montana, Wyoming, Oklahoma, Mexico, Ecuador, Prussia, France, Hungary, and New South Wales. Its session continued for five days. Various phases of the irrigation problem were fully discussed, and resolutions were adopted expressing the general results of the conference. The following plan for future action was recommended and accepted:

There shall be appointed by the National Executive Committee of the Irrigation Congress a commission for each State and Territory in the arid or semiarid regions, consisting of 5 members each, who shall be competent and experienced men. These commissions shall at once enter upon a careful investigation of the conditions existing in each of their States or Territories, and then formulate plans looking to the adoption of a national policy, to be supplemented by appropriate local laws. The results of the investigations of the several commissions shall be submitted to the next Irrigation Congress, and upon these reports the final and definite declarations of the people of the Western States and Territories may be based.

**Hydraulic Mining.**—Early in March, through the efforts of Congressman Caminetti, a bill was passed by Congress to promote the resumption of hydraulic mining in the State, and to restore the former navigable conditions in the Sacramento and San Joaquin river systems. The following is a synopsis of the measure:

A commission of 3 members of the corps of engineers of the United States army is created to mature, adopt, and execute plans to carry out the purposes of the measure and to prescribe rules and regulations therefor. These will include methods of restraining material now in the rivers and tributaries, as well as that now in place which may be moved by future operations under the law; the determination of the practicability of storage sites for *débris*, or water, or as settling reservoirs in tributaries, or in the basin sloughs and swamp lands; the examination of mines now working or hitherto worked, without injury, to ascertain the results of experience therein; inspection from time to time of the channels of the river systems, to note the effect of mining operations and erosion generally.



Other duties of the commission are to be: The limitation of the amount of *débris* washed from the mines to the capacity of the restraining works erected; the exercise of power to modify any permission granted, or, when public interests demand, to absolutely revoke the same; the enforcement of the orders thereof, when violated, by process in the courts, in addition to the forfeiture of the rights previously secured, and the execution of the law when parties mine without lawful permission.

The term "hydraulic mining" is declared to have the meaning applied thereto in California. Such mining carried on in territory tributary to the river systems mentioned, directly or indirectly injuring their navigability, other than as permitted by this law, is prohibited and illegal.

To obtain permission to mine, a verified petition must be filed.

If a majority of the members of the commission concur in a decision favoring the granting of permission, the order shall specify in detail what impounding or other restraining works shall be built and maintained at the expense of the petitioner and of what material, and in general shall set forth any further requirements and safeguards for the protection of the rivers and the lands adjoining.

Authority is conferred for conference with any State commission on the subject of drainage, reclamation of lands, or the working of hydraulic mines.

Soon after the enactment of this law the Legislature passed an act permitting the resumption of hydraulic mining in the State whenever and wherever it can be carried on without material injury to the navigable streams and the lands adjacent. By another act, provision was made for the appointment of a *débris* commissioner having authority to consult with any board of engineers of the United States respecting the adoption of plans for the construction of works to impound mining *débris*. The sum of \$250,000 was appropriated, whenever a like sum shall be appropriated by Congress, to be used in the construction of works to restrain or impound such *débris*.

**Midwinter Exposition.**—On Aug. 24 ground was broken in Golden Gate Park, San Francisco, preparatory to the erection of buildings for holding a grand exposition on the Pacific coast. The project had begun to take shape several months before, when Mayor Ellert appointed a committee of 50 citizens of San Francisco to consider the matter. The outlook appeared so favorable that the committee decided that the plans should go forward, and an executive committee of 9 persons was appointed to have full charge of the enterprise. Liberal pledges of financial assistance were made, and Congress was induced to pass a resolution admitting free of duty all exhibits coming from foreign countries for the exposition, and permitting foreign exhibitors at the World's Fair at Chicago to remove their exhibits to San Francisco; in fact, giving to foreign exhibitors at this fair the same privileges as at Chicago. The ceremonies on Aug. 24 were attended by a great concourse of people, and throughout the State much enthusiasm was manifested for the enterprise. The plans include an administration building, a mechanic arts building, a manufacturers' building, an agricultural building, and a fine arts building. These five structures will be grouped about a central concert valley, from the center of which is to rise an electric tower 260 feet in height, and

in beauty of architecture as well as in dimensions will compare favorably with many of the lesser buildings at Jackson Park. Many of the exhibitors at Chicago have manifested their intention of transferring their exhibits to San Francisco. The exposition is called the California Midwinter International Exposition. It will open on Jan. 1, 1894, and continue six months.

**CANADA.** See DOMINION OF CANADA.

### CAPE COLONY AND SOUTH AFRICA.

The colony of the Cape of Good Hope, founded by the Dutch in 1652, became a dependency of Great Britain in 1806. Representative government was established in 1853, and responsible government in 1872. British Caffraria was annexed to the colony in 1865, Basutoland in 1871, the Transkei and other parts of independent Caffraria, with Fingoland, in 1875, and more recently Tembuland, including Galekaland and Walfisch Bay. Griqualand West, which was detached from the Orange Free State and annexed to the British Empire in 1871, after diamond mines were discovered in it, is also now incorporated in Cape Colony. Pondoland, a native territory with 200,000 inhabitants, is administered by a resident commissioner of the Cape Government. The Transkeian territories are also governed as native districts under resident magistrates. Basutoland has been detached from the Cape, and preserves its native mode of government, subject to the direction of a resident commissioner. The Governor of Cape Colony is also High Commissioner for South Africa, directing the affairs of Basutoland, the crown colony of British Bechuanaland, the Bechuanaland Protectorate, and British Zambesia.

**Cape Colony.**—The Governor is Sir Henry Brougham Loch, appointed in 1889. The ministry was composed in the beginning of 1893 of the following members: Premier, Cecil Rhodes; Colonial Secretary, J. W. Sauer; Attorney-General, H. J. Rose Innes; Secretary for Native Affairs, P. H. Faure; Commissioner of Crown Lands and Public Works, Sir J. Sivewright; Colonial Treasurer, J. X. Merriman. The legislative power is exercised by a Legislative Council, consisting of 22 members elected for seven years, and a House of Assembly of 76 members elected for five years. To be elected to the Council a man must own £2,000 worth of real property or personal property of twice that amount. The members of both Houses are elected by male citizens who are occupiers of houses of the annual value of £25, or who receive a salary of £50, or wages of £25 with board and lodging. The number of registered voters in 1891 was 76,562.

**Area and Population.**—The area of Cape Colony proper is 191,416 square miles. The population, as determined by the census of April 5, 1891, is 956,485. The population by the census of 1875 was 720,984. The European population has increased from 236,783 to 336,938, which is at the rate of 2.63 per cent. a year, the rate of increase for the whole population being 2.03 per cent. Including the dependencies, excluding Pondoland, the total population in 1891 was 1,527,224, of whom 376,987 were of European origin and 1,150,237 belonged to the native races, Hottentot, Caffre, Fingo, or Bechuana, excepting 247,806 of mixed blood and 13,907

Malays. Of the whites, 27,667 were English by birth, 6,646 Scotch, 6,540 German, and 4,184 Irish. Of the European population, 74,015 were agriculturists, 77,118 were domestics, 31,177 followed industrial, 17,922 commercial, and 14,253 professional occupations; 155,333 were dependent, and 7,089 of unknown occupation. The population of Cape Town, the capital, in 1891 was 51,251, or with suburbs 83,718. Kimberley had 28,718 inhabitants, and Port Elizabeth 23,266. The number of arrivals by sea in 1891, counting only adults, was 11,509, while the number of adults who departed was 8,415.

**Commerce and Production.**—The foreign trade of the Dutch republics and of other parts of the interior of South Africa must pass through either Cape Colony or Natal. The Cape levies a duty on most imports, averaging 20 per cent. of their value, allowing a rebate on those destined for the Boer republics. In 1892 the value of the imports was £9,500,000, including nearly £1,250,000 for transit beyond the customs union. The exports, including Transvaal gold, were nearly £12,250,000 in value. The total value of the imports, including specie, in 1891 was £8,582,776, and of exports £11,131,024. The value of merchandise imports was £7,518,437; of exports of native products, £10,934,974. The exports of the principal South African products for 1891 were valued in the custom-house returns as follow: Diamonds, £4,174,208; wool, £2,264,498; hides and skins, £489,929; ostrich feathers, £468,221; Angora hair, £355,426; copper ore, £254,184; wine, £20,183. The aggregate value of the diamonds exported since 1867 is £56,693,000.

The production of wheat in Cape Colony for the year 1890-'91 was 2,894,482 bushels; of tobacco, 10,993,200 pounds; of wine, 6,012,522 gallons; of brandy, 1,423,043 gallons; of raisins, 2,599,147 pounds; of wool, 56,038,659 pounds; of mohair, 6,833,660 pounds. The number of hides and skins was 3,228,094. The Colony had 2,210,834 head of cattle, 444,147 horses, 96,345 mules and asses, 16,706,106 sheep, 6,628,037 goats, and 154,880 ostriches. The quantity of public land alienated up to the end of 1891 was 94,265,893 acres, while 40,979,890 acres still belonged to the Crown. In 1891 titles were given for 3,724,750 acres.

**Navigation.**—The number of ocean vessels entered in 1891 was 796, of 1,464,720 tons, of which 572, of 1,320,164 tons, were British. The number cleared was 771, of 1,426,887 tons, of which 551, of 1,282,981 tons, were British. The number of coasting vessels entered was 1,386, of 2,537,375 tons, and cleared 1,386, of 2,523,942 tons. The number of vessels registered in the colony in 1892 was 25, of 2,836 tons.

**Railroads, Posts, and Telegraphs.**—The railroads belonging to the Government had in 1892 a total length of 2,250 miles. There are 177 miles of private railroads. The western system, starting from Cape Town and running to the diamond district of Griqualand West, with an extension running into British Bechuanaland in the direction of the British South Africa Company's territory, is joined by cross lines to the lines running from Port Elizabeth and East London to the border of the Orange Free State, beyond which they join the line

that extends through the Free State and into the South African Republic, terminating at Pretoria. Direct communication between the capital of the Transvaal and Cape Town was opened on Jan. 1, 1893. The Government expended £16,949,722 in the construction of these lines, the cost per mile being £8,968. The receipts were £1,896,376, and the expenses £1,117,649 for 1891, when there were carried 4,342,547 passengers, and 672,760 tons of freight. The Government receives a net profit of about 4½ per cent.

There were 12,353,040 letters, 7,187,167 newspapers, 370,579 postal cards, 1,699,920 books and samples, and 603,792 parcels carried by the post-office in 1891. The receipts were £252,199, and the expenses, including the telegraph service, £282,273. The number of telegraph messages transmitted during 1891 was 1,317,021. The telegraph lines had a total length of 4,930 miles. A project for the continuation of the telegraphs of the Cape and the South Africa Company from the present terminus at Fort Salisbury through the continent of Africa is entertained by the promoters of the South Africa Company. The line would cross Portuguese East Africa on the Zambesi, and extend through Nyassaland and the lake region to Uganda and thence to the Nile, connecting with the Egyptian and European telegraphs, reducing the cost of telegraphing from South Africa from 9s. to 2s. a word.

**Finances.**—The revenue for the year ending June 30, 1891, was £5,557,019, including loans amounting to £1,413,143. The amount produced by taxation was £1,654,583; receipts from the services, £2,098,351; from the colonial estate, £348,143; fines, stores issued, etc., £42,829. The total expenditure was £6,436,007, of which £1,220,963 went for the service of the debt, £1,117,953 for expenses of the railroads, £152,430 for defense, £234,364 for police, and £126,831 for the civil establishment, while £1,913,504 were expended under act of Parliament. The estimated ordinary expenditure for 1892-'93 is £4,642,986. The development of the Transvaal gold fields has benefited the revenue of Cape Colony greatly; but expenditure has increased at an equal pace, although the competition of Natal is likely to prevent a further large growth of the revenue from this source. The revenue for the year ending June 30, 1893, was £5,008,241, and the expenditure £4,689,424. The public debt of the colony on Jan. 1, 1892, amounted to £23,206,206, exclusive of £1,632,962 of debts of harbor boards and corporations guaranteed by the colony. Nearly three quarters of the debt was raised for railroad construction. In January, 1893, a new loan of £1,454,611 was raised at 3½ per cent. interest.

**A New Ministry.**—The ministry, in consequence of dissensions among its members, resigned, and a new one was constituted on May 3 as follows: Premier, Cecil Rhodes; Treasurer-General and Minister of Agriculture, Sir Gordon Sprigg; Commissioner of Crown Lands, — Laing; Attorney-General, W. P. Schreiner; Colonial Secretary, P. H. Faure; Secretary of Native Affairs, — Frost. The Cape Parliament was opened on June 20. On July 1 the Bechuanaland Protectorate entered the customs union, and the postal service of British Bechuanaland



was taken over by the Cape Government. The Government gave considerable attention to the subject of immigration, studying specially the methods pursued in the United States. The question of regulating the influx of Asiatics also engaged its attention. The restriction of the franchise recently enacted called forth a protest from the Malays, who sent a petition signed with 10,000 names to the Imperial Government requesting the Queen to veto the act.

**Natal.**—The Constitution granted to the colony of Natal in 1856, when it was set apart from the territory of Cape Colony, was modified in 1875 and 1879 by the introduction of the representative system of government, under which the Governor is assisted by an Executive Council and a Legislative Council. The former is composed of the chief justice, the officer commanding the troops, the colonial treasurer, the attorney-general, the secretary for native affairs, and 2 members of the Legislative Council selected by the Governor. To these the manager of the state railroads and the colonial engineer have since been added. The Legislative Council originally consisted of 13 appointed and 15 elected members. Under the acts of 1883 and 1889 the number of members was increased to 31, of whom only 7 are nominated. Sir Charles Mitchell was succeeded as Governor in July, 1893, by Sir Walter Hely-Hutchinson, Governor of the Windward Islands since 1889, and before that of Barbadoes, Malta, and Fiji.

**Area and Population.**—The area of the colony is estimated at 20,460 square miles. The population in 1891 was 543,913. The number of Europeans had increased since 1879 from 22,654 to 46,788, the East Indians from 16,999 to 41,142, and the native population from 319,934 to 455,983. Durban, the capital, has a population of 25,512. Since 1879 there have been 7,197 immigrants brought from Europe, whose passages were paid in part or altogether by the Government. The number of assisted immigrants in 1891 was 581.

**Commerce.**—The total value of the imports by sea in 1891 was £3,335,831; of the exports, £1,371,240. Over 75 per cent. of the trade is with Great Britain. The export of Angora hair in 1891 was 526,854 pounds; of hides and skins, 808,825; of wool, 27,688,314 pounds; of raw sugar, 36,846 hundredweight; of rum and spirits, 85,605 gallons; of coal, 30,358 tons. The total value of native produce exported was £970,650. For the year ending June 30, 1892, the total value of the imports was £3,690,734. The exports, exclusive of those in transit, were valued at £1,184,118. Of the total area of the colony, 8,250,000 acres have been granted to Europeans, besides 750,000 acres sold on deferred payments and 700,000 acres held on pastoral leases, while 2,250,000 acres are reserved for the natives, and 1,000,000 acres remain unalienated. The area cultivated by the Europeans in 1892 was 102,678 acres. The product of sugar in 1892 was 26,111 tons, a considerable increase over that of the preceding year. Most of the sugar manufactured is consumed in the colony or sent across the inland borders. There were 1,368 acres planted to tea, the cultivation of which has been recently introduced. The yield of tea in 1892 was 341,380 pounds. Coal, bark,

and fresh fruit figure with tea among the comparatively new exports. Wheat, maize, and other cereals and green crops are largely cultivated. The natives had 294,339 acres under cultivation in 1892. During 1891-'92 there were 120,000 tons of coal raised, of which one half was exported. The coal compares favorably in quality with the best that is imported from England, and the demand for export has led to the opening of new collieries. The iron deposits in the colony are also beginning to attract notice. Sheep farming has increased in spite of the low price of wool, on account of which the farmers stored much of their wool in 1892, instead of exporting it. Gold is mined in small quantities. Leather and woollen manufactures have recently been established. The *Acacia mollissima*, which yields a valuable tan bark, and other useful trees are being extensively planted.

**Finances.**—The revenue of the Government for 1891 was £1,336,112, of which £673,090 were derived from railroads, £291,257 from customs, £19,518 from excise, £45,024 from sales of public lands, £44,614 from the post-office, £15,122 from telegraphs, £23,223 from stamps and license fees, and £77,936 from the native hut tax. The total expenditure was £1,361,387, the chief items being £653,435 for the railroads, £91,118 for public works, £32,994 for education, £70,649 for defense. The permanent expenditure from loans for the year was £904,184. For the year 1891-'92 the revenue was £1,392,455, and the ordinary expenditure £1,280,965. The amount of the public debt on June 30, 1892, was £7,170,354. The expenditure for the maintenance of the military force of 739 officers and men in 1891 was £64,534, two thirds of which the Imperial Government paid.

**Responsible Government.**—After legislative deliberations and discussions with the British Colonial Office extending over several years, the Natal Legislative Council on May 11, 1893, passed a bill to establish responsible government. The new Constitution was proclaimed by Sir Charles Mitchell, the Governor, on July 4, when the Legislative Council was prorogued. The question of responsible government was decided after a sharp and prolonged electoral contest by the election of two members in its favor in the constituency of Newcastle in February, giving a majority of 4 in the Legislative Council. The general election held in September, 1893, had given the same majority to the opponents of the measure; but the elections in two districts had been annulled, and on the final vote they were reversed. The home Government had insisted that full responsibility for the defense of the colony should rest with the natives. The Governor is to act also as paramount chief of the natives, and remains Governor of Zululand. The Legislative Council on June 23 passed a resolution condemning the decision of the Imperial Government to restore the banished Zulu chiefs before the expiration of their sentences, as likely to lead to a renewal of disturbances and bloodshed and produce a bad effect upon the natives in Natal.

**British South Africa Company.**—The British South Africa Company, having a capital of £1,000,000, obtained by a royal charter grant-

ed Oct. 29, 1889, the right to administer and exploit the region south of the Zambesi and north of the South African Republic declared to be within the British sphere of influence in 1888, comprising Matabeleland and Mashonaland. The company was formed for the purpose of working mining and other concessions and developing the commercial resources of Zambesia, and it undertook to extend northward from Bechuanaland the railroad and telegraph systems of Cape Colony, and to encourage immigration and colonization and promote trade and commerce. When by the Anglo-German agreement of 1890 and the Anglo-Portuguese agreement of June 11, 1891, all the regions east of the twentieth degree of longitude, except a small part conceded to Germany, and west of the possessions of Portugal on the east coast were included in the British sphere of influence, the company undertook the task of developing, and was granted sovereign rights over the whole of South and Central Africa north of the Transvaal and British Bechuanaland and south of the Congo Free State and German East Africa, except Nyassaland. This vast region is known popularly as Zambesia, and is divided by the river Zambesi into Northern and Southern Zambesia. Except a strip along the Zambesi extending as far as their settlement at Zumbo, the Portuguese are precluded from claiming territory south of the Zambesi west of longitude  $32^{\circ} 30'$  east of Greenwich, or the English territory east of longitude  $33^{\circ}$ , the line following that meridian and, farther south, the slope of the Manica plateau, with a deflection that leaves to the Portuguese their station of Massa-Kessi, but gives to the English Mutassa.

It was the great natural wealth of the part of their territory that here borders on the Portuguese possessions, especially the gold reefs of Mashonaland and Matabeleland, that attracted the capital and enterprise of the South Africa Company. The company extended the railroad from Kimberley to Vryburg, a distance of 126 miles, and then transferred this section, which is in British Bechuanaland, to the Cape Government, and proceeded to extend it 98 miles farther to Mafeking. This section also will probably be taken over by the Cape, with a view to the eventual incorporation of British Bechuanaland in the colony. For the extension beyond Mafeking the Imperial Government has agreed to contribute, on condition that no competing line shall be allowed, £10,000 a year for ten years toward the extension to Gaborones, and an equal amount for the section between that point and Palapye. The telegraph was extended from Mafeking 800 miles to Fort Salisbury in Mashonaland along the route on which a road was built by the pioneer expedition, which reached Mount Hampden on Sept. 12, 1890. The expedition numbered 1,500 able-bodied men, including the police who accompanied the expedition and were disbanded on reaching the gold-fields. Stations were established at Mafeking, Ramutsa, Palapye, Maclutse, Tuli, Tati, Lunde, Charter, Victoria, and Salisbury, and forts were built in Matabeleland and Mashonaland at Tuli, Charter, Victoria, and Salisbury. A mail and passenger service was established which brought Salisbury within eight weeks' communication with Eng-

land, which will be made much shorter when a railroad is built through Portuguese territory to connect Mashonaland with the port of Beira. A company was organized for the construction of this railroad, which is provided for in the Anglo-Portuguese agreement, and the first section of 75 miles, crossing the belt infested with the tsetse fly, was built before the summer of 1893. After arriving in Mashonaland the pioneers disbanded and set to work prospecting and staking out mining claims under the concession obtained from Lobengula, the Matabele king, who was recognized as the native sovereign by right of conquest of the countries of the Mashonas and Makalakas surrounding Matabeleland. Before March, 1893, the pioneers had discovered 5 different gold-fields and registered 15,500 mining claims, in 2,000 of which shafts had been sunk. The gold ledges were found to extend over 400 miles. Claims were entered also for mines of copper, silver, zinc, tin, antimony, arsenic, and lead, and deposits of nitrate of potassium and of plumbago were discovered. The country was found to be a remarkably promising region for grazing and agriculture. Townships were surveyed at Salisbury, Victoria, Hartley Hill, and Umtali, and a trek of Boer farmers was permitted to enter from the Orange Free State, to whom the company allotted farms. A town was built at Fort Salisbury, with a bank, hotels, churches, and a hospital. A government for the civil administration of the whole country was organized, and revenues were collected from licenses of traders, miners, and professional men, from the postal and telegraph services, and from sales of lots in the towns. There were 3,000 white settlers in the country in the spring of 1893.

Farms representing a total area of 2,000,000 acres had been granted, and the demands had so increased in number that a price of 9*d.* an acre was asked in addition to the annual quitrent of £3 for a farm of 3,000 acres.

**War with the Matabele.**—The Matabele are an offshoot of the Zulu race who conquered the rich grazing-country which they call their own, and have been accustomed to dominate and plunder the neighboring tribes and live by robbery and the labor of captured slaves. Though they are a composite race, the product of inter-marriages with captive women or boys adopted into the tribe, and have not more than 5,000 pure Zulus among their 200,000 of people, they are the equals of the old Zulus in physical strength and vigor and in the love of battle and proud confidence in their martial prowess. They have the old skill with the assegai, and having never found a foe that could stand before their battle rush, they believe one Matabele to be a match for four Englishmen, and that their native weapons in their hands are superior to machine guns and repeating rifles handled by whites, who have been known to retreat, whereas they have faced firearms and won the day, and never have been beaten. They preserve the Zulu military system, the whole nation being a territorially organized army, having four divisions corresponding to the districts, in each of which one of the chief indunas is both commandant and magistrate, while the kraals are nothing but regimental camps, which have one, two, or three indunas over them, according to their size. A hut in



the center of each kraal is the arsenal in which are kept the assegais and war shields of the regiment. The members of the regiment are always on the spot ready for the call to arms, except in the case of some regiments that have



A MATABELE LADY.

grown small from losses or from age, which are brought up to their normal strength by drafts of young men who remain inhabitants of other kraals. The vigilant chief of this military organization is King Lobengula, who is an absolute monarch, exercising power of life and death over all his subjects, the fountain of justice, power, and honor. He is said to be a man of intellectual force, enlightened and progressive, a capable organizer and administrator, a cunning diplomatist, and an incessant worker, keeping all the affairs of his little kingdom well in hand. He is about sixty years old, a man of huge frame, dignified and agreeable in manners. Some say that his disposition is mild and his policy one of peaceful progress toward civilization. His liking for white men has long been a notable trait in his character, which was exhibited in his admission of the English to Mashonaland, where his people would come into a contact with the whites free from subjection. Some, however, represent Lobengula as false and bloodthirsty, and it is said that, like other Zulu tyrants, he has maintained himself in power by ruthlessly putting to death most of his near relatives. Conflicting accounts have been given of the character of the Matabele as a people. Their history shows them to be a tribe of robbers and slave hunters, whose chief occupation was making raids, sometimes beyond the Zambesi, and killing the young men, carrying off the women and

children, and driving away the cattle of other tribes, or imposing upon them a regular tribute. The Mashonas, who are not much skilled in war and have no king nor military organization, but are industrious producers and possess remarkable facility in mechanical work, were subjugated and enslaved by the Matabele. But when the Matabele tyrant gave the English permission to settle in Mashonaland, his people could no longer expect to live on the labor of these people or continue long their predatory customs. The promoters of the South Africa Company hoped that they would learn to depend on the abundant resources of their country, composed of grassy plains where immense herds of fine cattle range, all the absolute property of the king, and in which millet is grown with little labor, though only to be converted into the native beer, all of which must be delivered up to the king. While some who knew these people believed them capable of and ripe for peaceful development, like the Basutos or Bechuanas, others depicted them as incorrigible savages, unable to live without bloodshed, and even given to cannibalism. When a new regiment is formed Matabele law forbids the young men of the kraal to marry until they have won from the king the Zulu ring by washing their spears in blood and thus proving themselves men. The company had built plenty of strong places and provided an abundance of improved arms and perfected a militia organization, in order to be ready not merely for an outbreak of the young men of the royal guard, whose turbulence was with difficulty restrained by Lobengula, or an incursion of a young regiment ambitious to prove their title to the estate of warriors, but for a war with the whole military force of Lobengula, numbering at least 20,000, perhaps 25,000 trained men under thorough discipline.

Lobengula's change of attitude after the arrival of the expeditionary force caused the officers of the company to redouble their military precautions, and acted as a serious check upon the enterprise. He denied that he had granted the right to settle, or conveyed a title to any land, or abandoned his sovereign rights over Mashonaland and its people, and repudiated the treaty and concessions as construed by them by sending back the 10,000 rifles, and renounced the allowance of £100 a month which he received as a consideration. He had taken this position when the whites first entered Mashonaland, and there was indeed nothing in the treaty that gave the South Africa Company the right to rule in the country or to occupy and convey land, though such right was conceded in the royal charter. Against his protest, and with a display of military force, they had taken possession of the country, and made use of the labor of the Mashonas, who had previously toiled under the Matabele yoke. Lobengula dreaded to engage in an armed conflict with the British, and did his best to restrain the rage of the young fighting men. At length their impatience at his dilatory policy rose to such a pitch that he was compelled to put the question to a test whether he had resigned his sovereign rights over the Mashonas if he would remain King of the Matabele. Outside of the districts claimed by the British as their territory, the Matabele were suf-

ferred still to harass the Mashonas and Makalaka. The Mashonas who lived within the protection of British forts had become defiant. Early in 1892 a Matabele impi entered Mashonaland and killed a chief and a large number of men, carrying off the women and children into captivity. The Administrator of Mashonaland sent a warning to Lobengula, who replied that he was punishing the theft of his cattle, and that his impi had strict orders not to interfere with the white man. In July, 1893, Lobengula, yielding to pressure, ordered an impi into Mashonaland to chastise the Mashonas for another theft of cattle. The Matabele fell upon the native settlements near Fort Charter, killing the men, burning the kraals, and carrying off the young women. The king's orders were to take all the women and cattle they could, but not to molest his friends the whites, or touch their property. They ravaged the country between Fort Charter and Fort Victoria, burned the grain and kraals around those places, and on July 8 pursued fugitives into both places, and hunted fleeing Mashonas up to the walls of the latter fort, where there was a force of 400 men, demanding



A MATABELE WARRIOR.

of the commander the surrender of the slaves of the king whom he harbored. This demand was promptly refused. The whites were as eager for the inevitable conflict as the savages. Capt. Lendy ordered the Matabele to return to their own side of the border within a certain number

of hours. They asserted their right to be in the country and were slow in withdrawing. Captain Lendy led 40 mounted riflemen in pursuit of a returning impi, and to punish their insolence, the British attacked them, killing 2 indunas and 30 men. Dr. Jameson, the Company's Administrator of Mashonaland, sent a message to Lobengula demanding reparation for the invasion of British territory and for cattle belonging to white men which the Matabele had driven off. To this he sent a friendly reply; but at that time he did not know of the shooting of his indunas and warriors. On Aug. 20 another message was received from Lobengula, in which he said he had sent his impis to punish the Makalaka for stealing his cattle, and that he would not return any cattle or pay for any damage unless Rhodes, the managing director of the South Africa Company returned to him the captives, with their women and children, cattle, goats, and sheep, that the Victoria people were keeping from him. If he had known beforehand what he now knew, he said, he would have ordered his people to take everything belonging to the whites that they could lay their hands on. Sir Henry Loch's message asking him to punish the indunas who were responsible for the violation of the white men's territory he answered diplomatically by denouncing the whites as the aggressors and insisting on his rights over Mashonaland. When the Company's officials tendered an installment of the king's subsidy he refused to receive what he called "blood money." The British Government promised to uphold the officers of the company in their determination not to surrender the fugitives, but cautioned them to confine themselves to defensive measures. Soon, however, an aggressive policy was adopted, with the sanction of the imperial authorities. Dr. Jameson sent an ultimatum to Lobengula, and both parties began to prepare for hostilities. A regiment of imperial troops was moved up the country toward Mashonaland, and reserves were sent out from England. A Boer trek had recently arrived in the north, but the Boers declined to engage in a war with the Matabele as allies of the English, and made arrangements to return to their own country. The Matabele continued their raids throughout Mashonaland without check. The Boers, who had settled in the south, returned to the Transvaal by order of Commandant Raaf, of Tuli. Lobengula, who had sent his strongest impi on a raid beyond the Zambesi, recalled it quickly, and before the middle of September impis were advancing toward the border to attack Victoria and Tati. The latter post was deserted by the whites, who abandoned most of the mines and farms everywhere to seek refuge within the fortifications at Victoria, Charter, and Salisbury, which were provisioned for a long siege. The Matabele sent all their women, children, and cattle back from the border districts for safety. Before Oct. 1 some of the impis, which had collected along the border, entered British territory and ravaged the native settlements. The Company then had 1,000 men and 600 horses in Mashonaland. Chief Khama sent a large body of his native soldiers, trained in the use of firearms, to re-enforce the Bechuanaland police, and under their protection the miners returned to



work on the Monarch reef. In the Transvaal, where public feeling was hostile to the Company, an American filibuster, named Whittaker, enrolled a force of 330 white men, all of British origin, to serve with Lobengula. A few lawless and adventurous Boers were willing to join these volunteers, to whom Lobengula promised farms. In the beginning of October a police patrol exchanged shots with a party of Matabele scouts across the Shashi river. When Dr. Jameson had procured additional horses from the Orange Free State and the Transvaal, he sent out two divisions each of 400 mounted men, armed with Winchesters and with Maxim and other machine guns, from Fort Victoria and Fort Salisbury, with the object of attacking Lobengula's forces in Matabeleland, and, after effecting a junction, marching upon Bulawayo, the king's kraal. The officers were men experienced in African warfare, such as Major Sir John Willoughby, Major Forbes, Capt. Lendy, and Captain Hayman, of the Cape mounted rifles. Major Goold Adams, commanding the border police, took 220 men from the garrisons at Maclutse and Fort Tuli, and was joined at Tati by 200 of the Bechuanaland police, while Major Gray undertook to raise 150 more, and Khama furnished 1,500 trained men armed with Martini-Henry rifles. Major Adams, who had two or three field guns, as well as several machine guns, was ordered to advance at once upon Lobengula's capital and



FORGING POINTS FOR ASSEGAIS.

co-operate with the other two columns. On Oct. 15 the advance guard of the Fort Salisbury column encountered a party of Matabele who were guarding cattle and put them to flight. About the same time a detachment of 400 of the native levies, led by whites, attacked a position held by a body of Matabele, but after an engagement, in which the Matabele lost 30 men, the Company's force retreated.

Cecil Rhodes hastened to Mashonaland to assume the direction of the operations. Lobengula sent envoys to treat with Major Goold Adams, who was advancing to the pass leading to Bulawayo; but when the delegates entered Tati they were seized as prisoners, two who attempted to escape being shot. The relentless and irreconcilable spirit in which the colonists had opened the campaign impelled the Imperial Government to interfere. Sir Henry Loch was ordered to the scene of hostilities to supersede Cecil Rhodes as commander-in-chief, and after his arrival all operations and negotiations were conducted by him under instructions from the Marquis of Ripon, Colonial Secretary.

**Swaziland.**—The native State of Swaziland is inclosed on three sides by the territory of the South African Republic, and on the east is separated from the sea by Tongaland, part of which, by the Anglo-Portuguese agreement of June 11, 1891, was included in the English sphere of influence, while the rest is attached to the Portuguese province of Lorenzo Marques. The area of Swaziland is estimated at 10,000 miles. The native population is about 60,000. Boers of the Transvaal hold titles to farms and winter grazing-grounds, and there is a settled trading and pastoral population of about 600 whites, which is increased in winter to 1,500. The king, Ungwam, at the age of twelve, succeeded Umbandine in 1890, and the native government is directed by the queen regent, who has a council of 40 chiefs. In the treaty of 1881, in which the independence of the Transvaal Republic was recognized, the English Government, which had befriended the Swazis in their difficulties with the Zulus, inserted a clause by which the independent and autonomous existence of the Swazi nation was affirmed. By a convention concluded in 1884 between the Transvaal and the British governments the independence of Swaziland was guaranteed under their joint protection. In 1890 a convention was concluded which vested the government of the whites in a mixed commission, consisting of the resident agent of the Swazi nation, as chairman, and representatives of Great Britain and the South African Republic. The Resident Adviser and Agent of the Native Government in 1893 was Theophilus Shepstone; the Transvaal member of the commission, D. J. Esselen; the British representative, Col. Martin. The revenue of the state for 1891-'92 consisted of £14,000 contributed by the protecting governments, and £3,370 raised by taxation. The expenditure was £17,080.

The convention of 1890 was concluded for three years, ending Aug. 8, 1893. The Transvaal Government denounced it, giving the required six months' notice, necessitating a new settlement or a reversion to the *status quo ante*. A conference between the British High Commissioner and the President of the South African Republic to arrange a final settlement as plenipotentiaries of their respective governments was appointed to be held at Colesberg, Cape Colony, on April 18, 1893. A modification of the convention in favor of the Transvaal had been promised in 1891 by the Salisbury Government, which undertook that, if President Krüger, of the Transvaal, would prevent the threatened great Boer trek which endangered the British claim to Mashonaland, it would consider the question before the expiration of the three years. Already in 1890 the British Government had been prepared to hand the administration of Swaziland over to the Boers, but was prevented by popular clamor, on the proof of mining and other interests in Swaziland belonging to British subjects, from carrying out its preliminary agreement; and, instead of it, assented to the Boer project of building a railroad to the sea through Tongaland to Kosi Bay. The Cape Colonists were anxious to debar the Boers from all railroad communications, except through their colony, and to force the South African Republic to join the South African customs union, from

which Natal also held aloof. The people and Government of Natal supported the claims of the Boers in Swaziland, with the exception of direct railroad communication with the sea through Portuguese territory, expecting that the Boer Government would consent in return to extend to the gold-fields and the capital the railroad that Natal had constructed to the border of the Transvaal. One of the chief objects of the Transvaal Government in endeavoring to obtain possession of Swaziland, for which more valuable interests in the north had been sacrificed, was to secure ultimately a seaboard and harbor. This aim the imperial and colonial British authorities still expected to defeat. In order to strengthen its case the Transvaal Government, since 1890, had managed to acquire nearly all the valid property rights and concessions of value that had been held by English subjects. This was easy, because the gold mines that had originally attracted British immigration had not proved productive.

President Krüger and Sir Henry Loch conferred at Colesberg and agreed to the basis of an agreement, which could not be concluded definitely until it was ratified by the Transvaal Volksraad. The existing arrangements for the government of Swaziland were continued temporarily, and a period of three months from the ratification of a new convention was allowed before the introduction of the new system. They parted on April 21, and on June 5 met again in Pretoria. The Volksraad rejected the conditions imposed by the British plenipotentiary regarding the autonomy of the Swazis. The convention was concluded and signed on June 8. The convention provides for the cession of Swaziland and the transfer of the protectorate to the South African Republic. The native Swazi Government and all the existing rights of the Swazis are preserved. The sale of liquor to them is prohibited. All Europeans resident in Swaziland on April 30, 1893, are admitted to full citizenship in the South African Republic. No restrictions on the importation of products of the British colonies into Swaziland will be permitted, except in regard to brandy. The Transvaal Government agrees to forego its right to build any railroad to the coast. In connection with the convention an assurance was given by the representative of the Transvaal Government regarding the entry of the republic into the customs union, and a promise was made of satisfactory connections with the Natal Railroad now terminating at Charlestown.

**German Southwest Africa.**—The German protectorate on the southwest coast of Africa embraces the region west of the boundaries agreed upon between Germany and Great Britain in 1884 and 1890, extending from the Orange to the Cunene river, with a coast line of 930 miles, along which no practicable harbors have been found, except Walfisch Bay, which is British, Sandwich Harbor, and Angra Pequena. The total area is estimated at 340,000 square miles, and the population at from 200,000 to 250,000. The coast lands and various concessions and privileges have been held by the German Colonial Company for Southwest Africa, which has not made much progress in developing the resources of the country, and has hindered the

enterprise of German and foreign mining companies. In 1892 a concession for Damaraland, in the north, which is adapted for cattle-raising, and through which passes the trade route to the Zambesi that has been conceded to Germany by Great Britain and Portugal, was granted to a company composed mostly of Englishmen. A project for a railroad from Walfisch Bay to Bechuanaland it was impossible to carry out on account of the opposition of the Cape authorities, who had bespoken a monopoly for the Bechuanaland extension of the colonial system.

The depredations committed by a Hottentot robber chief, Hendrik Witbooi, upon the Hereros, and his insolent behavior toward the German authorities, at last impelled Capt. von François, the German Imperial Commissioner, to undertake a punitive expedition against his stronghold at Hoornkrans, and thus inaugurate a vigorous policy that would restore the respect of the natives for German authority. The Hereros had repeatedly broken their treaty engagements, and in the beginning of 1893 one of their chiefs, Kambasembi, had gone so far as to stop an expedition sent out by the Colonial Company to prospect for minerals, and to compel the imperial commissaries, Mine-Inspector Duft and Lieut. von Bülow, to return, allowing the others to proceed only because they pretended to be Englishmen. Capt. von François reached the mountain fastness of Hoornkrans by a circuitous route, and carried it by storm on April 12. The Hottentots lost 80 killed and 100 wounded, including many women and children, who fell victims to the sudden attack and indiscriminate firing. On the German side 1 man was killed and 3 were wounded.

**Orange Free State.**—The smaller of the two Boer republics, which is separated from Cape Colony by Orange river and from the Transvaal by Vaal river, and has Basutoland and Natal on the east, and Griqualand West on the west, has maintained its independence by a policy of subservience to Great Britain and by preserving the good will of the Dutch of Cape Colony, with whom its people have closer relations than have the Boers of the Transvaal. It has an area of 48,326 square miles, and in 1890 had a population of 77,716 whites, divided into 40,571 males and 37,145 females, and 129,787 natives, of whom 67,791 were males and 61,996 females, making the total population 207,503. Of the whites, 51,910 were natives of the Free State, and 21,116 of Cape Colony. Every adult white male is a full burgher, having a vote for President, who is elected for five years, and for a representative in the Volksraad of 57 members, who are elected for four years, one half being replaced every two years. There is an increasing immigration movement, chiefly from Germany and England.

The revenue for the year ending with February, 1892, was £386,589, and the expenditure £407,610. For 1892-'93 the estimated revenue is £263,000 of ordinary receipts. Including unexpended balances the total revenue is £447,671, while the expenditures are estimated at £434,120. The chief sources of revenue are the following: Import duties, £100,000; stamps, £38,000; transfer dues, £23,000; quitrents, £15,500; native poll tax, £13,000. The chief items of ex-



penditure are: Public works, £90,518; salaries, £45,930; education, £34,500; post-office and telegraphs, £28,030; police, £11,376; artillery, £4,968. The public debt amounts to £65,000, while the property of the Government, consisting of telegraphs, lands, buildings, etc., is valued at £417,000, besides £70,000 of shares in the National Bank.

The land of the Free State is suited rather to grazing than agriculture, and the people follow pastoral pursuits mainly, though grain is produced in considerable quantity by native labor. There were 6,000 farms in 1890, stocked with 248,878 horses, 276,073 oxen, 619,026 other cattle, 6,619,992 sheep, 858,155 goats, and 1,461 ostriches. There are rich coal mines, and gold has been found, as well as various precious stones, especially diamonds, of which the value produced for 1890 was £223,960; for 1891, £202,551. These and ostrich feathers now supplement the staple exports of wool and hides.

F. W. Reitz, then Chief Justice of Cape Colony, was elected President of the Free State on the death of Sir John Brand, and took the oath of office on Jan. 11, 1889. In 1893 he consented to re-election for a second term.

**South African Republic.**—The Boers of the Transvaal, who defeated British regulars at Majuba Hill, and regained in the treaty of March 21, 1881, their political independence of which they had been deprived in 1877, have had to contend with British influence in a new form, since their country has developed into one of the chief gold-producing regions of the world. The area of the South African Republic is about 120,000 square miles. The imperfect census of 1890 makes the white population 119,128, of whom 66,498 are males and 52,630 females. The natives in 1892 were estimated to number 139,295 men, 175,610 women, and 334,665 children; in all, 649,560. The influx of miners and other immigrants has since increased the total population to over 1,000,000. In 1890 the white population of the gold fields was 20,993. The capital, Pretoria, has 5,055 white inhabitants. Johannesburg, the center of the main gold field, had in 1892 a resident population of about 15,000. The revenue of the Government increased from £663,433 in 1887 to £1,577,445 in 1889, and then fell off to £1,229,060 in 1890, and £967,191 in 1891. Fluctuations in the receipts for mining licenses, which have become the largest source of income, are the principal cause of the decline. The revenue from the gold fields was £727,132 in 1889; £492,830 in 1890; £405,397 in 1891; and £277,677 for the first six months of 1892. The total revenue for this half of 1892 was £598,026, and the estimated revenue for the whole year £1,073,093. The expenditure increased with the receipts from £621,073 in 1887 to £1,226,135 in 1889, and the increase was not checked in the following year, when it amounted to £1,531,461. In 1891 it was reduced to £1,350,073, and in the first half of 1892 the disbursements were £473,441. On June 30, 1892, the Government had an unexpended surplus of £333,604 remaining. The estimate of expenditure for the whole year was £1,127,457. Besides mining licenses, the sources of revenue are sales of land, quitrents, customs, a native hut tax, stamps, and transport licenses. The Government lands have an aggregate area

of 5,660,744 acres. They were estimated in 1884 to be worth £400,000, but as they include the Barberton gold fields their value is now several millions sterling. A loan of £2,500,000 bearing 5 per cent. interest was negotiated with Rothschild in 1892, making the public debt on June 30, 1892, £2,858,695, including a debt of £192,271 paying 3½ per cent. interest that is due the British Government.

The principal exports, besides gold, are wool, cattle, hides, ostrich feathers, and ivory. The dutiable imports were valued at £721,353 in 1886, £2,204,327 in 1887, £3,748,830 in 1888, about £5,000,000 in 1889, and \$5,500,000 in 1890. The import duties amounted to £398,190 in 1890, and in 1891 to £316,610. The export of gold through Natal and Cape Colony was £1,851,905 in 1890, and in 1891 it was £2,901,470.

The railroad from Norvalspoor, on Orange river, to Vaal river, running through the Orange Free State for 334 miles, was extended, by agreement between Cape Colony and the Transvaal Government, to Pretoria, whence a line has been built to Johannesburg. The Natal line, now terminating at Charlestown, is to be carried into the Transvaal. A railroad has been built from Delagoa Bay to the eastern border of the Transvaal, and of the continuation to Pretoria 75 miles have been completed, leaving 218 miles yet to be built. There are 2,560 miles of telegraph lines.

The Constitution of the Transvaal Republic, adopted in 1858, has been modified several times. The most important changes have been made to satisfy the demands of the mining population, which demanded a share in the government. Originally there was one Chamber or Volksraad, and only male whites who were born in the country or had been residents for sixteen years had votes. Now the legislative power is vested in two Volksraads of 24 members each elected for four years. There are 2 members in each chamber from each of the 5 principal electoral districts, 1 member from each of the 12 smaller districts, and 1 from the Witwatersrand and 1 from the Barberton mining community. Only male citizens born in the Transvaal sixteen years of age, or those who have resided fourteen years in the republic, are entitled to vote for members of the First Volksraad, while for the other chamber male Protestants thirty years of age who have resided four years in the country and own real estate may qualify as electors by becoming naturalized on paying a fee of £5 and taking the oath of allegiance. The President and the Commandant-General are each elected by the direct suffrage of the electors for the First Volksraad, and the State Secretary and nonofficial members of the Executive Council, of which the Commandant-General is the head *ex officio*, are chosen by the First Volksraad. The State President is S. J. Paul Krüger, who was elected for the third term of five years in 1893. The Commandant-General is P. J. Joubert; the other members of the Executive Council, N. J. Smit and M. A. Wolmarus; the State Secretary, Dr. W. J. Leyds. There was a sharp contest in the presidential election between the supporters of the President and the partisans of Gen. Joubert, and the latter challenged the returns by which Krüger was declared re-elected. An official scrutiny was con-

cluded by the Executive on April 12, by which it appeared that Krüger received 7,881 votes and Gen. Joubert 7,009. As the Joubert party continued to throw doubt upon the result, President Krüger declared that he would not enter upon the office until the scrutiny was confirmed by the Volksraad. This was done, and he was sworn in on May 12.

**The Gold-Fields.**—The number of white men employed at the end of 1892 in gold mining in the districts of Witwatersrand and Heidelberg, which embrace Johannesburg, Boksburg, Krügersdorp, Florida, Doornkop, and Heidelberg, was 2,952, and the number of blacks was 21,619. There were 2,440 stamps in operation, and the output for the last quarter of 1892 was 313,612 ounces, having a value of £1,100,329. In the De Caap mines at Barberton 12,645 ounces, worth £43,250, in Little Leteba 6,346 ounces, worth £22,309, and in Lydenburg 6,108 ounces, worth £21,508, were produced, making the total output for that quarter of the principal gold fields 342,653 ounces, worth £1,201,028. When gold was first discovered, in 1886, in conglomerate beds on the southern slope of the Witwatersrand range, which is the watershed between the east and west coasts of Africa, there was a rush of gold-seekers, who supposed that gold could be obtained as easily as from the alluvial deposits in California and Australia. Claims were staked off and bought and sold at extravagant prices, and companies were formed for the purpose of gambling in shares on the London Stock Exchange. The directors who were in earnest were not experienced in the business, and few of the managers of the mines were experts in gold-mining. Even those who were were ignorant of the new and peculiar character of this reef. The machinery sent out was not suitable, and the lack of trained persons to work it, and the costliness of supplies and transportation, made the expenses of operation disproportionately high. When the fever of speculation died away and no more money was to be had from the pockets of European shareholders the managers applied themselves to the problem of making the mines pay dividends. They require unusually costly and elaborate mining plants and reduction machinery, and the management must be economical, because there is no remarkably rich ore. The product of the Rand in 1887 was 35,000 ounces, valued at £120,000. In 1892 the yield had grown to 1,200,000 ounces, valued at £4,250,000. The Transvaal now ranks below the United States, Russia, and Australasia as a gold-producer, but experts believe that the product will go up to £10,000,000 a year in the Witwatersrand alone. Hamilton Smith, an American mining engineer, who has made a study of the main reef, from which 2,000,000 ounces of bullion have been extracted, or two thirds of the total product of the district, finds that the outcrop has a length of 11 miles, with an average thickness of 5 feet, and that the dip is about 35 degrees. He believes that the beds of "banket" or conglomerate, in which the gold is found in fine particles adjoining the pebbles, continue in probably the same thickness and richness throughout the formation, but that the trough of the basin is much deeper than the ledge can be mined. If, as is likely, it is possible

to sink the mines to a depth of 5,200 feet along the dip, or 3,000 feet below the surface, the gold that can be obtained from the main reef would be £215,000,000 in value. The mining claims under the Transvaal laws are staked out on the surface of the ground. The owners of the mines that are in active operation neglected to obtain rights to the ground for more than a short distance below the outcrop, as a monthly license fee must be paid for every claim. Other capitalists have acquired claims on the dip, and a syndicate has been formed, with a capital of £1,000,000, to sink vertical shafts on the "deep-level" claims and raise the ore to the surface. Of the 36 mining companies now working, the main reef 21 are making a profit, and several others are in a fair way to become profitable. The average yield is 12½ pennyweights per ton of ore, though in their reports the mining companies have claimed a higher percentage.

**CHEMISTRY. Chemical Theory.**—In a review, made in his presidential address before the chemical section of the British Association, Prof. Emerson Reynolds described the chemical work of the year as substantial in character, although almost unmarked by discoveries of popular interest. In this category may be placed the measure of success which M. Mersson has attained in the artificial production of the diamond form of carbon, apparently in minute crystals similar to those recognized by Koenig, Mallard, Daubrée, and Friedel, in the supposed meteorite of Cañon del Diablo, Arizona. Not less interesting or valuable are the studies of Dr. Perkins on electro-magnetic rotation; of Lord Rayleigh on the relative densities of gases; of Dewar on chemical relations at extremely low temperatures; of Clowes on exact measurements of flame-cap indications afforded by miners' testing lamps; of Horace Brown and Morris on the chemistry and physiology of forage leaves, by which they have been led to the conclusion that cane sugar is the first sugar produced during the assimilation of carbon, and that starch is formed at its expense as a more stable reserve material for subsequent use of the plant; and of Cross, Bevan, and Beadle on the interaction of alkali-cellulose and carbon bisulphide, in the course of which they proved that a cellulose residue can act like an alcohol radical in the formation of thiocarbonates. "When we consider the drift of investigation in recent years," Prof. Reynolds continues, "it is easy to recognize a distinct reaction from extreme specialization in the prominence now given to general physico-chemical problems and to those broad questions concerning the relations of the elements, which I would venture to group under the head of 'comparative chemistry.' Together, these lines of inquiry afford promise of more definite information about the real nature of the seventy or more entities we term 'elements,' and about the mechanism of that mysterious yet definite change in matter which we call 'chemical action.'" Thus, a curious side-light seems to be thrown on the nature of the elements by the chemico-physical discussion of the connection existing between the constitution of certain organic compounds and the colors they exhibit. While we have no knowledge of the origin of the chemical elements, much suggestive work has recently been



accomplished in the attempt to apply the principle of gravitation, which explains the relative motions of the planets, to account for the interaction of the molecules of the elements. The first step in this direction was suggested by Mendeleef in his Royal Institution lecture of May 31, 1889, wherein he proposed to apply Newton's third law of motion to chemical molecules, regarded as systems of atoms analogous to double stars. The Rev. Dr. Haughton has followed up this idea mathematically, and has shown, in a series of papers recently published, that the three Newtonian laws are applicable to explain the interactions of chemical molecules, "with this difference, that whereas the specific coefficient of gravity is the same for all bodies, independent of the particular kind of matter of which they are composed, the atoms have specific coefficients of attraction which vary with the nature of the atoms concerned." The laws of gravitation, with this proviso, were found to apply to all the definite cases examined, and it was shown that a chemical change of combination is equivalent to a planetary catastrophe. The author then proceeded to a comparative study of the elements carbon and silicon.

The most remarkable outcome of what he calls "comparative chemistry" is described by Prof. Reynolds as the periodic law of the elements, which asserts that the properties of the elements are connected in a periodic function with the masses of their atoms. Concurrently with the recognition of this principle other investigations have been in progress, aiming at more exact definitions of the characters of the relations of the elements, and ultimately of their respective offices in Nature. Among inquiries of this kind the comparative study of the elements carbon and silicon appears to the author to possess the highest interest. Carbon is the great element of organic nature, while silicon, in union with oxygen and various metals, forms about one third of the solid crust of the earth, and is unquestionably the most important element of inorganic nature. The chief functions of carbon are those which are performed at comparatively low temperatures; hence carbon is essentially the element of the present epoch. On the other hand, the activities of silicon are most marked at very high temperatures; hence it is the element whose chief work in Nature was performed in the distant past.

A discussion on the dry-dust theory of explosion in mines was opened in the British Association with a paper by Prof. H. B. Dixon, who said that opinions on the subject may be grouped under three heads: (1) That although it is possible to stir up and ignite a cloud of dust, the flame dies out and is not explosive; that is, that a mixture of coal dust and air is not of itself explosive. This is the view held by Mallard and Le Chatelier. (2) That although a mixture of coal dust and air is not of itself explosive, a very slight addition of fire damp, insufficient to be recognized by the Davy lamp, will render the mixture explosive. This view is supported by the experiments of Abel. (3) That a mixture of fine coal dust and air is of itself explosive, and that the explosion, once started in such a mixture, can be propagated as far as the mixture extends. In relating the facts and experi-

ments that bear upon these views Prof. Dixon dealt specially with the explosion in the Seaham colliery in 1880, and showed that the only parts of the mines untouched by the explosion were those which were damp and therefore free from dust. It was impossible to explain the method of propagation of this explosion otherwise than by the dust theory. After explaining and illustrating Mr. Hall's experiments in which a cannon was fired at the bottom of an old shaft in which coal dust was suspended, the author said that in some cases explosions could be brought about by these means, and in others not, suggesting that the effect was largely dependent on the character of the coal dust. Mr. Galloway brought forward a number of facts bearing in favor of the coal-dust theory, and recommended a repetition of the experiments. Mr. Hall said that the higher the quality of the coal the greater was the liability of explosion. Prof. Thorpe said that in an explosion caused by flour dust, which had reduced a mill to a heap of dislocated bricks, he had received an object lesson that had converted him to the coal-dust theory. Experiment had shown him that coal dusts vary greatly in their capacity of exploding. Remarks from other speakers were mostly in favor of the coal-dust theory.

The Permanent International Commission appointed at the International Chemical Congress of 1889, in Paris, to consider the unification of chemical nomenclature, adopted, in 1892, 46 resolutions embodying the conclusions to which, on consultation with a special subcommittee, they had arrived. These resolutions, or rules, relate only to compounds of which the constitution is known, those of unknown constitution being reserved for further consideration. The first one, the most important and comprehensive of the list, recommends that, besides the usual processes of nomenclature, an official name be established for each body, under which it may be found in all tables and dictionaries; and that authors, besides the name which they may choose, insert in their memoirs the official name in parentheses.

The American Association for the Advancement of Science has recommended the following more important changes in the spelling, pronunciation, etc., of chemical terms, accompanying each recommendation with a statement of the reasons for which it is made: *Aluminium* instead of *aluminum*; *cesium* without the *a* of the diphthong; *columbium* instead of *niobium*; *glucinum* in preference to *beryllium*—both of these on grounds of historical priority; *sulfur* instead of *sulphur*; the termination *ic* to be used for metallic derivatives only when there is a contrast with *ous*; the termination *ol* to be used exclusively for alcohols; the termination *id* instead of *ide*, dropping the final *e*; likewise the termination *in* instead of *ine*; words used in the metric system ending in *meter* to be pronounced as compound words, each element retaining its own accent, as mil'lime'ter; Latin prefixes to be used, to the exclusion of Greek, with derivatives of *valence*, *arsin*, *stibin*, *phosphin*, *hydrogen sulfid*, to supersede such cumbersome terms as *arsenivretted hydrogen*, etc.; to retain the final *me* in *gramme*, and so avoid confusion with *grain*.

In discussing the subject of the carburization

of iron, John Parry shows that the theory of gaseous solution may be applicable to the solution of carbon in molten, semifluid, or merely heated iron, apart from possible cases of dissociation and chemical combination. Solution, he says, is simply the even distribution of one body in another, or such distribution as that of permanently gaseous matter through space. It may be urged that the theory is not applicable to semifluid or merely heated iron. No definite line can, however, be drawn; it is obvious that the different grades of temperature are simply approximations, more or less, to the ideal fluid condition.

Of the two theories on which the process of dyeing has been explained, one—the mechanical view—regards the process as a simple absorption, similar to that by which animal charcoal takes up gases and liquids and retains them in its pores; while the other theory traces the effects to definite combinations. Neither of these theories being wholly satisfactory, M. Witt has put forward a hypothesis in which he assimilates tinctorial operations to the phenomena of solution, or to combination in indefinite proportions. He maintains that the coloring matter is dissolved in the fiber, which becomes dyed only if its affinity for the dye is greater than that of the previous solvent. If the solvent powers of the fiber and of the water are approximately equal a kind of equilibrium is established, and the dye does not become completely exhausted. If the solvent power of the fiber is less than that of the water there is no dyeing. In this case the solvent power of the water may be decreased by adding sodium chloride, or sulphate, etc.; or the solvent power of the fiber may be heightened, for example, by chloring wool, or by depositing sulphur upon it, or by mercurizing cotton.

The origin of color and fluorescence has been discussed in the English Chemical Society by W. N. Hartley and H. E. Armstrong. Mr. Hartley assumes that it can not be stated in general terms that color is due to special methods of atomic arrangement; but the statement may be applied in a restricted sense to certain organic compounds, especially to those included in the class to which organic dyes belong. The author points out that all organic coloring matters are endothermic compounds, and considers this to be the physical cause of what Armstrong terms "reactivity," or "high-potential." It is shown that anthracene is not colorless, but has a true greenish-yellow color in addition to its fluorescence. The conclusions are drawn from the author's experiments on fluorescence that alcoholic solutions of quinine exhibit a beautiful, bright violet fluorescence; that hydrochloric acid is not fluorescent; that quinine hydrochloride and chloroform are feebly fluorescent, but without distinct color; that both hydrochloric acid and chloroform can extinguish those rays which are the cause of fluorescence in quinine; that some alkaloids may be recognized by the degree and color of their fluorescence; that normal alcohols of the ethylic series and the fatty acids are fluorescent; that glycerol has a bright fluorescence; that benzene has a pale blue, azobenzene a greenish-blue fluorescence; that rock-crystal has a pale bluish-violet, flint glass a strong blue, and crown glass a very brilliant blue fluorescence;

and that substances which are not fluorescent in strong solutions may become so on dilution, particularly if they exert a very powerful absorption of the ultraviolet or invisible spectrum. Mr. Armstrong holds that in those cases in which the constitution is fairly well established, colored substances are all of one type. From this basis he starts to inquire whether all colored organic substances are not similar in type.

G. Hinrichs considers that the researches of an entire century have established the fact that if we take  $O = 16$ , the atomic weights of almost all the elements border very closely upon whole numbers; for others, such as copper and chlorine, the value is close upon a whole number and a half. "We may affirm," he says, "that the most precise determinations of all the elements are exactly what they ought to be if all the elements had been formed from a single primitive substance."

**Chemical Physics.**—Liquid oxygen, as it appears in Prof. Dewar's experiments, is a non-conductor of electricity, and is a high insulator. The spectrum of the spark taken in the liquid is a continuous one, showing all the absorption bands. The lines A and B of the solar spectrum are due to oxygen, and came out strongly when the liquid was interposed in the path of the rays from the electric lamp. Both gaseous and liquid oxygen have substantially the same absorption spectra. This is a very noteworthy conclusion, considering that no compound of oxygen, so far as is known, gives the absorption spectrum of oxygen. The persistency of the absorption spectrum through the stages of gaseous condensation toward complete liquidity implies a considerable persistency of molecular constitution. When the evaporation of liquid oxygen is accelerated by the action of a high expansion pump, and an open test tube is inserted into it, the tube begins to fill up with liquid atmospheric air, produced at the ordinary barometric pressure. In his lecture at the Royal Institution Prof. Dewar took a cup made of rock salt and put in it some liquid oxygen. The liquid did not wet rock salt, but remained in a spheroidal state. The cup and its contents were placed between and a little below the poles of an electro-magnet. Whenever the circuit was completed, the liquid oxygen rose from the cup and connected the two poles. Then it boiled away, sometimes more on one pole than on the other, and when the circuit was broken it fell off the pole in drops back into the cup. It was also shown that the magnet would draw up liquid oxygen out of a tube. A test tube containing liquid oxygen, when placed in the Hughes balance, produced no disturbing effect. The magnetic moment of liquid oxygen is about 1,000 when the magnetic moment of iron is taken as 1,000,000. On cooling, some bodies increased in magnetic power. Cotton wool moistened with liquid oxygen was strongly attracted by the magnet, and the liquid oxygen was sucked out of it on to the poles. A crystal of ferrous sulphate, similarly cooled, stuck to one of the poles. Fluorine is so much like oxygen in its properties that the author ventures to predict that it will turn out to be a magnetic gas. Nitrogen liquefies at a lower temperature than oxygen, and one would naturally expect the oxygen to come down before the nitrogen when air is liquefied, but



this is not the case. They liquefy together. In evaporation, however, the nitrogen boils off before the oxygen. Between the poles of the magnet all the liquefied air goes to the poles; there is no separation of the oxygen and nitrogen. Liquid air has the same high insulating power as liquid oxygen. The phenomena presented by liquefied gases offer an unlimited field for investigation. At  $-200^{\circ}\text{C}$ . the molecules of matter have only one half of their ordinary velocity, and have lost three fourths of their energy. At such low temperatures they seem to be drawing near what might be called "the death of matter," so far as chemical action is concerned; liquid oxygen, for instance, has no action on a piece of phosphorus, or potassium, or sodium dropped into it. The author once thought, and publicly stated, that at such temperatures all chemical action ceased. That statement requires some qualification, because a photographic plate placed in liquid oxygen can be acted upon by radiant energy, and at a temperature of  $-200^{\circ}\text{C}$ . is still sensitive to light.

In H. E. Baker's experiments on the influence of moisture on chemical action, ammonia was dried as completely as possible by freshly ignited lime; on then subjecting it to the action of phosphoric anhydride very little of the gas was absorbed. Hydrogen chloride was dried first by sulphuric acid and finally by a week's contact with phosphoric anhydride. On mixing ammonia and hydrogen chloride, dried in this way, no ammonium chloride fumes were produced, and no contraction was indicated by the mercury gauge attached to the apparatus; it was therefore concluded that ammonia and hydrogen chloride do not combine when dry. Union at once occurs, however, on introducing a small quantity of moist air. In like manner sulphur trioxide would not unite with lime, barium monoxide, or copper oxide. Furthermore, no brown fumes were produced on mixing dry nitric oxide with dry oxygen.

While making his experiments on the production of alloys by contact of the constituent metals, W. Hallock applied his method to some chemical reactions—the common freezing mixture of salt and ice, sodium and potassium nitrate, potassium, calcium and ammonium chloride, and sodium and potassium hydrate—the materials all having first been cooled far below the centigrade zero so as to assure perfect dryness. The result was always the same—liquefaction and union at temperatures below the melting point of either substance, but above that of the product. The questions were suggested: Wherein do the results differ from the new method of forming alloys? and, Are the metals combining to form alloys in the new way a freezing mixture? The result of a test made with potassium and sodium indicated an affirmative answer to the latter question. In experiments in which ice is used it is hardly safe to suppose a chemical action between solids, but rather that the vapor from the ice attacks the metal, forming the hydrate which unites with other ice, forming a solution, which is then further acted upon by the metal. In view of these and other considerations, it is suggested that perhaps many substances have a slight vapor tension at temperatures considerably below their melting

points, and are surrounded by a thin atmosphere of their own vapor over their clean surfaces, and that it is only necessary to bring two such atmospheres to interpenetration in order to initiate the reaction, which will then continue, provided the product escapes easily and does not clog the operation. Mr. Hallock believes that chemical action may take place between solids wherever the product or products are liquid or gaseous, even though the reagents are solid, with perhaps the added condition that both the reagents be soluble in the liquid produced. If this be true, his new method of forming alloys is simply a special case of this general principle.

The power of different metals to occlude hydrogen has been determined by G. Neumann and F. Streinz, as follows: Palladium is capable of absorbing hydrogen to the extent of 502.35 times the volume of the metal; platinum sponge, 49.30 times its volume—a figure that varies considerably from that found by Graham; gold, in different experiments, from 37.31 times to 46.32 times its volume—a value higher than that ascertained by Graham; silver, according to the authors' experiments, none—according to Graham, 0.211 times its volume; iron, in a state of fine division, 19.17 times its volume; copper,  $4\frac{1}{2}$  times its volume; nickel, 17.57 volumes. The absorption of hydrogen by cobalt is rather large, and the metal, when charged with hydrogen, becomes incandescent in a current of oxygen. The occlusive power of some metals for hydrogen decreases on a repetition of the experiments. The attention of the authors was called to this subject by the view that lead, as the negative pole of a secondary element, is capable of occluding hydrogen. On testing the metal, it occluded, in one experiment, 0.15 time, and in the other, 0.11 time its volume of the gas. Neumann has examined the behavior of the precious metals with oxygen. Silver absorbed 4.09 volumes; while Graham found the absorption to be from 6.15 to 7.4 volumes; gold absorbed 48.49 volumes, while Graham observed no absorption—a difference attributed by Neumann to the temperatures of the experiments; platinum occluded 77.14 volumes. With palladium the author found a formation of suboxide, since the residue, after treatment with oxygen, contained 6.99 per cent.; while  $\text{Pd}_2\text{O}$  contains 7.33 per cent. He believes that the absorptions of oxygen depend on a power of the metals to become oxidized at about  $450^{\circ}\text{C}$ ., the temperature of the experiment.

The observation of A. S. Johnson, made in 1876 and 1879, that hydrogen gas, occluded in copper turnings, is a source of error on the side of excess in hydrogen determinations, is confirmed by Neumann. Mr. Johnson found that metallic copper occludes varying quantities of hydrogen, according to the state of its surface; that alternate oxidation and reduction of the same copper tends gradually to diminish the weight of the occluded hydrogen; that copper, which has occluded hydrogen, parts with its occluded gas when heated to redness in pure nitrogen, but does not part with it when heated to redness in a vacuum; that pure copper occludes no hydrogen; and that the presence of sulphur tends to increase occlusion.

It is well known that the amount of gas capable of being held in solution by a given liquid is

directly proportional to the pressure exerted, unless chemical combination takes place between the gas and the solvent. Inasmuch as the pressure at any point within a fluid incapable of being compressed is proportional to the depth of that point below the surface of the fluid, it is obvious that the water deep down in the ocean must be capable of dissolving greater quantities of air than water at the surface. It is mathematically calculated by A. E. Richardson—on the basis, however, of the coefficient of absorption for pure water, which will give a result exceeding that of sea water—that a cubic foot of water at the extreme depth of the Pacific Ocean would be capable of absorbing 29 cubic feet of air measured at normal pressure, or about one twenty-seventh of its own weight. "Nor does there seem any reason to suppose that this amount is not absorbed, for the atmospheric gases must permeate the whole of the ocean's depth, in order that deep-sea fishes may obtain the oxygen necessary for the preservation of their existence. At a depth of 1,580 feet water absorbs its own volume of air (measured at atmospheric pressure). Thus in all water below this depth more than its own volume of air is dissolved. We have thus a second but submerged atmosphere.

Prof. Camelley, in 1884, using a metachromatic scale, constructed by W. Ackroyd, found indications that the color of compounds is a periodic function of the atomic weight. In 1892 Mr. Ackroyd stated, as his view of the law of color and constitution, that in a series of molecules with a constant radical, R, and a weight-variable radical, R', the color varies in a definite order, increase of the weight-variable radical R' causing change of color toward the black end of the color scale, viz., white, blue, green, yellow, orange, red, brown, black. Several substances, including binary compounds, crystallized salts, periodic series of compounds, isomorphous compounds, and colored nonmetallic elements, are cited as conforming to this law, which the author phrases: increase of absorption of light in the order of the metachromatic scale is accompanied by increase of molecular and atomic volume. At the present stage of the inquiry it is difficult, on account of the uncertainty in some cases as to what may be the molecular weight of compounds that can not be vaporized, to say what are the real exceptions to this law.

Dr. S. Rideal described to the British Association the results of his experiments to determine the iodine value of sunlight in the high Alps. The experiments were made at St. Moritz, in the Engadine, at a height of about 7,000 feet. From comparison of the results with some obtained in Manchester, England, at the same time of the year (January), it appears that as much sunshine falls upon St. Moritz in one day as upon Manchester in ten days. It is this larger amount of sunshine, doubtless, that renders St. Moritz so favorable a health resort. It appears from some experiments made in the Alps by Prof. Dixon and Dr. Kohn that above a certain height the amount of sunlight, as determined by the liberation of iodine, does not increase.

It was observed by A. W. Hoffmann, in 1874, that charcoal—especially animal charcoal—can exert a strong oxidizing action. Cazeneuve made similar observations on boiling certain

substances with animal charcoal, when their color was changed, and the charcoal retained the color firmly but yielded it up again to boiling alcohol. The idea that the oxidizing action of carbon was concerned in the decolorizing action was at once suggested. On experiments made for this purpose it was found that charcoal which had been previously ignited and cooled in a current of dry nitrogen or in carbon dioxide had less decolorizing power than such as had been cooled in the air. Cazeneuve is of opinion that the residual oxygen in the charcoal burns the coloring matter. On the other hand, while Birnbaum and Bomasch recognize a chemical process in the matter, the decolorizing action of animal charcoal is explained by F. Schiller on purely physical principles.

The report of the committee of the British Association on the action of light on the hydracids of the halogens in the presence of oxygen deals with an investigation of the conditions necessary to start the decomposition of hydrochloric acid in the presence of oxygen. Experiments show that the presence of metallic salts is of great influence in the matter; the action of metallic chlorides is a subject of special study.

**New Substances.**—An important new series of compounds, the thionylamines, in which two new hydrogen atoms of the amido group of the primary amines are replaced by the radicle thionyl SO, are described by Prof. Michaelis. The thionylamines of this series are colorless fuming liquids that boil without decomposition and emit a powerful odor. They are decomposed by water into the original amines and sulphur dioxide. The amines of the aromatic series likewise form thionylamines with thionyl chloride; and the hydrochlorides, unlike those of the fatty series, react with equal facility. The lower members of the aromatic thionylamines are yellow liquids which distill without decomposition; the higher members may likewise be distilled without loss under diminished pressure. Alkalies convert them into the original amines and a sulphite. In the presence of the moisture of the air, or of a small quantity of added water, the thionylamines are converted into compounds of the amines with sulphur dioxide. In seeking to ascertain whether a similar kind of compound to the thionylamines is formed when thionyl chloride is allowed to act upon the amines of the acid radicles, Prof. Michaelis and Dr. Siebert have obtained a nitrite as the main product, with sulphur dioxide and hydrochloric acid as by-products. As the two latter are gaseous substances, it is evident that the reaction affords a convenient method of preparing the nitrites in a state of purity.

A series of compounds formed by the direct union of nitrogen peroxide with certain metals are described by MM. Sabatier and Senderens as having been recently discovered and investigated by Mr. Mond and his coworkers. It was observed that when vapor of peroxide of nitrogen of tolerable purity was allowed to stream at the ordinary temperature over metallic copper, cobalt, nickel, or iron in the finely divided and pure condition obtained by the reduction of their oxides by hydrogen, rapid absorption of the nitrogen peroxide occurred with the formation of definite compounds. These compounds are



solid nonvolatile substances, and are represented by the general formula  $M_2NO_2$ , where M stands for either of the four metals mentioned. The discoverers propose the name *metaux nitrés*, or, in English, *nitro-metals*. Nitro-copper is unalterable in dry air at ordinary atmospheric temperature. When heated in pure nitrogen it is dissociated. It is useful in liquefying nitrogen peroxide. If a quantity of it be placed in one limb of a Faraday V-tube and heated, the nitrogen peroxide liberated collects as a liquid in the cool limb. In moist air it deteriorates rapidly, is enveloped in red fumes, and its surface becomes green. Hydrogen is without action on it in the cold, but when it is heated to  $180^\circ$  C. large quantities of ammonium nitrite and free ammonia are produced. Dry ammonia gas reacts at the ordinary temperature with some energy upon it. With sulphureted hydrogen at the ordinary temperature heat is evolved, and the water sulphur and a blue sulphide of copper are separated. Nitro-copper thus appears to be of a kindred nature with the metallic carbonyls, the nitrogen peroxide being held in a similar manner to the carbonic oxide of those compounds. It may be employed as a convenient means of storing nitrogen peroxide, with a certainty of being able to liberate it by a comparatively slight rise of temperature. Metallic cobalt burns energetically in the cold in nitrogen peroxide. When the nitrogen peroxide vapor is diluted with nitrogen, the heat of the reaction is modified, and the formation of nitro-cobalt occurs in a regular manner. It is a black solid. Its reaction with water is very violent, but less nitric oxide is produced than in the case of nitro-copper. Heated in an atmosphere of nitrogen it deflagrates violently and burns with a very brilliant flame. It forms a dangerous explosive when mixed with a combustible substance. Nitro-nickel is more difficult to procure in a pure state. It closely resembles nitro-cobalt; is black; reacts with water, giving out nitric oxide; and deflagrates with explosive force when heated in a current of inert gas. Nitro-iron is still more difficult to isolate, the energy of the action often bringing about a brilliant deflagration and destruction of the product.

Turacin is the name given to soluble animal pigment containing copper, which Prof. A. H. Church has discovered in the feathers of the plantain-eater bird, or turaco. It is a colloid substance, which retains, when precipitated, an immense proportion of water. Consequently, when its solution in ammonia is precipitated by an acid the coagulum formed is very voluminous. One gramme of it is capable of forming a solid mass with 600 grammes of water. But, while soluble in pure water, it is insoluble in presence of mere traces of saline matter. When heated to the boiling point of mercury it becomes black, is no longer soluble in alkaline liquids, and ceases to yield, on the application of stronger heating, the purple vapors which the unchanged turacin gives off under the same circumstances. Treated with concentrated sulphuric acid, it is dissolved with a fine crimson color and yields a new compound, the spectrum of which greatly resembles that of hæmatoporphyrin, the substance obtained by the same treat-

ment from hæmatin; to which the author gives the name turacoporphyrin. But, unlike the derivative of hæmatin, it seems to retain some of its metallic constituent. The percentage composition of turacin is probably one which corresponds nearly to the formula  $C_{82}H_{81}Cu_2N_9O_{22}$ .

Copper, according to Prof. Church, is widely distributed in the animal kingdom, but only one organic compound besides turacin has been as yet recognized in animals. This is a respiratory product, discovered by Léon Fredericq, and called by him hæmocyanin. It has been observed in several genera of crustacea, arachnida, gasteropoda, and cephalopoda, but has not probably ever been obtained in a state of purity.

Carbide of boron, as isolated and described by Dr. Mühlhäuser, of the University of Chicago, is an extremely stable substance, and capable of resisting the action of almost all the usual solvents and reagents. It was prepared by heating boron anhydride with the hard kind of carbon employed for making the terminals of electric arc lamps, and appears in the form of black graphitoidal spherules, having a bright metallic luster, frequently aggregated so as to resemble a bunch of grapes in shape. When reduced to powder it closely resembles graphite in outward appearance, blacking the fingers in a similar manner with a coating that has the same bright metallic luster and greasy feel. Examined under the microscope it appears bluish black and transparent, and reflects light with chromatic effects. When heated to a high temperature the powder cakes, forming a solid mass, which is readily malleable and capable of being rolled. At a very high temperature it fuses into a liquid resembling molten metal. It burns with great difficulty in oxygen, but is combustible with chromate of lead. It is insoluble in all the ordinary solvents, but fused caustic or carbonated alkalies attack it with formation of borate of the alkali and liberation of the carbon.

The statement made three years ago that the hydrate of hydrazine may be preserved in closed vessels unaltered for any length of time is now modified by Herr Schrader, who says that it decomposes sooner or later, with the production chiefly of ammonium hydrate. The reactions between the hydrate of hydrazine and a large number of metallic oxides are described by Herr Schrader in his paper. In them the strong reducing properties of hydrazine are exhibited in a marked degree, and the reaction is frequently explosive. A series of double sulphates containing hydrazine sulphate and the sulphate of a metal are characterized by the general formula  $R''SO_4(N_2H_4)_2H_2SO_4$ , where  $R''$  may represent copper, nickel, cobalt, iron, manganese, zinc, or cadmium. These double sulphates, which contain no water of crystallization, and are further distinguished from the double salts containing ammonium by their difficult solubility, are readily prepared by the admixture of solutions of the constituent simple sulphates. Difficulty was found in preparing double chlorides of fixed composition containing hydrazine chloride. Good crystals of very soluble double chlorides are easily obtained, but so many appear capable of existence that the conditions for the formation of salts of definite constitution have not yet

been ascertained. Two new compounds are described—the sulphocyanate and the sulphocarbamide. The latter possesses fairly strong acid properties.

Of the organo-metallic compounds of magnesium, the dimethyl, diethyl, and dipropyl compounds were obtained by Dr. Löhr, of Tübingen, in 1890. The work has been continued in the same laboratory by Dr. Fleck, who now describes the diphenyl compound, and gives additional information concerning the others. The magnesium alkyls are of a somewhat similar nature to the well-known zinc methide and ethide, but differ in the nature of certain of their reactions, and their chemical activity is even considerably superior to that of the zinc alkyls. They are all spontaneously inflammable in the open air, and the methyl compound is described by Dr. Löhr as igniting spontaneously and burning in carbon dioxide gas, from which it is capable of extracting the oxygen in combination. The three fatty alkyls are best prepared by the action of the alkyl iodides upon magnesium amalgam. They all react in a most violent manner with water. In the case of magnesium diphenyl  $\text{Mg}(\text{C}_6\text{H}_5)_2$  even when the substance is covered with ether, and small pieces of ice are slowly added, the reaction occurs almost explosively. The substance is consequently extremely hygroscopic, and attracts moisture from the atmosphere very rapidly when covered with a layer of benzene. When freely exposed to the air it at once burns to magnesium oxide and a carbonaceous mass. If, however, the composition is covered with benzene and exposed to dry air for some days, an oxy-compound,  $\text{Mg}(\text{OC}_6\text{H}_5)_2$ , is formed as a brown solid. Bromine reacts with great energy to form bromides of magnesium and phenyl, but the intermediate compound—bromo-magnesium diphenyl, corresponding to zinc iodo-ethide—is not formed; and incapability of forming mixed halogen-alkyls is one of the most characteristic distinctions between the magnesium and the zinc alkyls.

The properties of amidophosphoric acid,  $\text{PONH}_2(\text{OH})_2$ , the primary amine of orthophosphoric acid, and those of several well-crystallizing salts, obtained from the chloride of diphenylphosphoric acid, are described by H. N. Stokes, in "The American Chemical Journal"; the acid crystallizes in tabular or short prismatic crystals, which are insoluble in alcohol, but readily soluble in water, to which they impart a sweetish taste. The solution is easily distinguished from phosphoric acid by its yielding no precipitate with silver nitrate. It evolves no ammonia upon treatment with caustic alkalies, but merely forms the salt of the alkali metal. The solution slowly decomposes into ammonium phosphate. The solutions of the acid and neutral salts of the alkali metals yield many corresponding acid and neutral amidophosphates of other metals by double decomposition with soluble salts of those metals.

Besides the powerful affinity of hydroxylamine,  $\text{NH}_2\text{OH}$ , already described in the "Annual Cyclopædia," causing rapid action, Mr. Labry de Bruyn has discovered many interesting properties in that substance. If the liquid is heated under ordinary atmospheric pressure in contact with the air, it explodes with great

violence when a temperature between  $60^\circ$  and  $70^\circ$  C. is obtained; if air is excluded, it may be heated to  $90^\circ$  C. without accident, when regular decomposition into gaseous products occurs. Explosion, however, usually follows at once if this temperature is much exceeded, and generally after a short time if the source of heat is removed as soon as the temperature has reached  $90^\circ$  C. The decomposition induced at this temperature is accompanied by evolution of heat. The crystals are without odor. They react with considerable violence with the halogen elements, the reaction in the case of chlorine being accompanied by production of flame. With metallic sodium brilliant incandescence occurs. Warm zinc dust reduces hydroxylamine to ammonia so rapidly that if any considerable quantities are employed a violent explosion follows. Highly oxidized compounds react with the crystals in a most energetic manner, with the accompaniment of brilliant flame and detonation. Other reactions described by the author amply demonstrate the remarkable chemical agency with which anhydrous hydroxylamine is endowed. The melted substance is capable of dissolving a considerable volume of ammonia gas; and carbon dioxide and sulphureted hydrogen are so soluble in it that viscous liquids are produced that remain liquid even at  $-10^\circ$  C.

Two well-crystallized compounds of the lactides derived from salicylic acid and the next higher (cresotinic) acid with chloroform are described by Prof. Anschütz, of Bonn. Chloroform being so loosely united with the lactides that the temperature of boiling water is sufficient to dissociate them, the compounds may be employed for obtaining pure chloroform, and for preserving chloroform in a solid form, in which it is not prone to decomposition. The lactide of salicylic acid has long been supposed to be formed when the acid is treated with oxychloride of phosphorus. Prof. Anschütz, however, shows that the product of this reaction contains many substances in addition, but by working under special conditions he has succeeded in isolating pure salicylide. Owing to the property which salicylide possesses of combining with chloroform, it may be extracted from the white solid product of the reaction with phosphorus, after drying by means of chloroform. The compound is deposited from the chloroform solution in large colorless crystals belonging to the tetragonal system. It possesses the composition  $\text{C}_6\text{H}_4\cdot\text{COO}_2\cdot\text{CHCl}_3$ . The chloroform readily escapes upon warming, in very much the same manner as the water of crystallization contained in many crystallized salts. The free salicylide remaining is a solid substance melting at  $261^\circ$  C. In a similar manner, phosphorus oxychloride reacts with the three cresotinic acids, with formation among other substances of lactides, which may be isolated in the same way in the form of their chloroform compounds. The pure lactides are readily obtained from the chloroform compounds by warming to  $100^\circ$  C., with evolution of pure chloroform.

A new series of compounds, in which the hydroxylic hydrogen of phenols is replaced by the element titanium, are described by M. Livy. Their discovery was the result of a color reaction of titanous acid in contact with sulphuric acid



containing a little phenol. Titanium phenylate,  $\text{Ti}(\text{C}_6\text{H}_5\text{O})_4$ , is obtained in the form of rhombohedral crystals of the color of bichromate of potash, which yield on pulverization a powder still more yellow. The analogous compounds with the cresol phenols, thymol, naphthol, resorcinol and salicylic acid, have also been prepared. They are all red or brownish-red substances possessing properties similar to those of titanium phenylate.

**New Processes.**—Previous to the appearance of M. Moissan's paper on carbide of silicon, Dr. Mühlhäuser, of Chicago, had made a series of experiments on the preparation of the compound on a large scale, for the purpose of its manufacture. His process consists in heating a mixture of silica or silicate of alumina and carbon by means of the electric furnace to the temperature of  $3,500^\circ \text{C}$ . The crystals obtained possess many of the properties, particularly the hardness of the diamond. According to the materials employed in manufacture they are colorless, or colored yellowish green, bluish green, or pale blue. The name carborundum is suggested for the substance. Upon the large scale the cheaper materials sand and coke are employed, with the addition of common salt as a flux. The product of the reaction, which is distinguished by some remarkable features, is an ellipsoidal hardened mass, surrounding the carbon high resistance, which is found, on making a section, to consist of six distinct layers. The first, close against the carbon high resistance bar, is a zone of graphite, in hollowed hexagonal plates, pseudo-morphs of silicon carbide, from which they are produced by dissociation at the extremely high temperature of the bar, silicon escaping as vapor. The second and largest zone consists of the crystals of silicon carbide, in elongated aggregates, radiating in all directions from the axis of the ellipsoid, the individual crystals being bluish or yellowish green, and of various sizes up to a centimetre in diameter. Surrounding this zone of crystals is a narrow zone of amorphous carbide of silicon, outside of which is a layer of nodules of minerals produced from the impurities during the reaction. The fifth layer consists of the remains of uncombined mixture; and the sixth is the crust of common salt. The crystals obtained by employing silicate of alumina are usually colorless or pale blue, and have been used by M. Nikola Tesla in his new lamp for the transformation of electric waves into waves of light.

Gaseous iodine and hydrogen have been found by Prof. Victor Meyer and Herr Bodenstein to unite with comparative readiness without the aid of the condensing agents.

The question of the action of light upon pure hydriodic-acid gas was definitely decided. Bulbs exposed upon the roof of the Heidelberg laboratory during the summer months became filled in a few days with brilliant crystals of iodine. After ten days' exposure, 58 per cent. of the gas had been dissociated, and at the end of the summer 99 per cent., or practically all. The fact that the waves of light are so active in effecting dissociation made it necessary for the thermal experiments to be performed in the dark. They revealed many interesting facts, chiefly of technical bearing.

By attaching to the electric furnace a condensing tube of copper shaped like the letter U, so arranged as to be surrounded by an outer jacket of cold water constantly changing under high pressure, M. Moissan has been enabled to distill and condense most of the elements which have been found refractory. A piece of metallic copper weighing more than a hundred grammes having been placed in the inner crucible of the furnace and subjected to the arc, brilliant flames shot forth from the aperture through which the carbon terminals were inserted, accompanied by copious yellow fumes, the result of the combustion of the issuing vapor of copper. Nearly thirty grammes of copper were volatilized in five minutes. Metallic copper was afterward found condensed in an annular deposit of globules under the cover of the furnace, and a large proportion of the volatilized copper in the condensing tube in almost a pure state. Silver was brought to full ebullition in a few moments, distilled with ease, and a portion of it was condensed in the form of small globules of various sizes, while another portion was deposited in the form of arborescent fragments. Platinum fused in a few minutes, began soon afterward to volatilize, and condensed in the U-tube in brilliant little spheres and fine dust. Aluminum distilled readily, and condensed in the form of a gray powder containing admixed spherules exhibiting brilliant metallic luster. Tin likewise distilled with facility, and the condensed product usually contained a considerable proportion of a curious fibrous variety, of the metal. Gold emitted abundant light yellowish-green fumes, and was deposited in the condenser in the form of a powder exhibiting a purple sheen. The powder consisted of minute regular spheres, which under the microscope appeared to reflect the yellow color. Three distinct annular deposits were observed on the under side of the cover of the furnace. Manganese was remarkably volatile, and iron was readily distilled and deposited in the form of a gray powder, with numerous small particles exhibiting brilliant surfaces interspersed. Silicon volatilized rapidly and condensed in minute spheres and dust. Carbon was almost immediately converted into graphite, which distilled over and was deposited in light semitransparent plates exhibiting by transmitted light a chestnut color. The refractory alkaline earths appear likewise to be capable of distillation in the electric furnace. Lime was distilled rapidly, and magnesia more slowly, with brilliant fumes of various tints.

Tungsten may be readily prepared in solid ingots in M. Moissan's electric arc furnace. A mixture of tungstic acid and carbon after ten minutes' subjection to the arc gives a button of the metal. If care be taken to have an excess of tungstic acid, pure tungsten is obtained; otherwise a carbide is produced, which must be refined. Metallic molybdenum was obtained by the reduction of the oxide with powdered charcoal. It is, however, not quite free from carbon, and requires refining. More difficulty is met in preparing metallic vanadium. Even after twenty minutes' action of the arc only a trace of reduction is apparent on the surface of the mixture of oxide and charcoal. Upon increasing the tension of the arc by trebling the strength of the cur-

rent, complete reduction occurs, but the resultant metal combines, as in the case of tungsten, with a large quantity of carbon. It would appear, therefore, that at these high temperatures, these refractory metals combine with carbon to form definite binary compounds.

The success of the Brin method of isolating oxygen indirectly from the atmosphere by the agency of barium peroxide has provoked attempts to find other substances that will do the work as well and cheaply. Superiority is claimed by Herr G. Kassner for calcium plumbate. His method is first to expose this substance in the form of spongy porous pieces to the action of moist furnace gases, at a temperature not exceeding 100° C. The calcium plumbate under these conditions rapidly absorbs the carbon dioxide contained in the furnace gases, and is thereby decomposed with formation of calcium carbonate and free peroxide of lead, and without any change of form, the spongy pieces still retaining their shape and texture. The product of this first operation, when fully saturated with carbon dioxide, is transferred to a strong red-hot retort, where oxygen is rapidly disengaged. When the peroxide of lead has given up most of its available oxygen, carbon dioxide is evolved and is separated from the oxygen as long as that continues to go over by passing it over a further quantity of calcium plumbate. The residue is then, by driving a current of air through the retort, reconverted into calcium plumbate for use in another operation. In a plumbate of calcium process patented by Peitz, pure carbon dioxide is used instead of furnace gases; and a paper has been published on the subject by Le Chatelier.

A method of increasing the illuminating power of coal gas by introducing pure oxygen into it is to be adopted at the Huddersfield gas works, England. It was suggested by Mr. Edward Tathan, of Australia, in 1890, that a stable gas of high illuminating power could be obtained by adding oxygen to warm, heavy oil gas. The fact was experimentally verified in the same year by Dr. L. T. Thorne. Preparations have since been made for practically testing the applicability of oxy-oil gas to the enrichment of coal gas, for which works have been erected at Huddersfield and at Salisbury Square, London. The oxygen is introduced into the oil gas by an automatically adjusted arrangement soon after it leaves the retorts and while it is still warm; the mixed gases then pass together through the condensers. The oxy-oil gas is stored in special holders, so arranged as to admit it into the coal gas just before its entry into the station meter. The results so far obtained are highly satisfactory, and still better have been realized at Salisbury Square.

Osmium has been melted by MM. Joly and Vézès, at the temperature of a very powerful electric arc, in a similar manner to that in which ruthenium is melted. To avoid loss of metal by oxidation and the formation of the poisonous volatile tetroxide, the operation is performed in the electric furnace of Ducretet and Lejeune, in which the metal is heated in a carbon crucible placed in a closed chamber traversed by a stream of carbon dioxide, when it melts at the requisite temperature without seri-

ous volatilization. After fusion the element presents a brilliant metallic surface, the blue color of which is slightly tinged with gray. It breaks with a crystalline fracture, and is distinguished by its remarkable hardness, exceeding that of ruthenium and iridium, and cuts glass and scratches quartz. It also after fusion retains its bright surface, apparently proof against the attacks of atmospheric oxygen. All of the refractory metals of the platinum family have now been obtained in liquid form. Of them all osmium is the most refractory, its melting point being considerably higher than that of ruthenium. It resembles that metal very much in many of its properties, particularly in the ready formation of a volatile tetroxide. It, however, differs in aspect entirely from ruthenium, exhibiting a remarkable blue metallic luster, while ruthenium is more white than platinum. The six metals of the platinum group appear to resemble one another more particularly in pairs, ruthenium and osmium having many physical and chemical attributes in common; rhodium and iridium are similarly nearly allied, and palladium and platinum form the third pair. In many respects, however, osmium exhibits a peculiar and somewhat isolated character, more akin to that of the metalloids elements. Indeed, Deville and Debray termed it the metalloid of the platinum group; Berzelius compared it to arsenic, and Dumas to tellurium.

**Atomic Weights.**—In a memorial paper on Richard Servais Stas, read before the English Chemical Society in December, 1892, Prof. J. W. Mallet, after reviewing the work of that chemist, particularly in the determination of atomic weights and his inquiry concerning the possible dissociation of the elements at high temperatures, considered the objects to be aimed at and the methods to be pursued in future work. He advocated the repetition by competent hands of some one at least of Stas's fundamental results, making no distinction between rare and common elements, and aiming at the determination of the atomic weights of all with the least possible delay and the highest attainable degrees of accuracy. Certain of the elements—for example, tellurium and cobalt—particularly call for a more searching and exact investigation of their atomic masses. In a number of cases the accepted value is based upon the investigation of only a single interchange; it is desirable that in such cases other and independent methods should be resorted to. It is eminently desirable that an attempt be made to determine directly the ratio of hydrogen to each of the halogens without bringing in the atomic mass of oxygen. The metals of the yttrium and didymium groups should be further investigated. It is time that the foundation be made for a more minute and critical study of the periodic system of classification, for which closer than the roughly approximate values hitherto used should be employed. The author advocates the substitution of the expression "atomic mass" for "atomic weight," as being a more precise term; and he urges that all atomic masses be expressed in terms of the mass of the hydrogen atom taken as unity, strongly objecting to the change advocated by many to O=16.

Prof. Seubert has made a redetermination of



the atomic weight of osmium, by which the true value of the constant is fixed at 190.3 and it given a place at the head of the platinum group instead of at the end of it.

In his new system of atomic weights, founded in part on the direct determination of the molecular weights, A. Leduc has found the atomic weight of oxygen—the density of the gas with reference to air being 1.10503, and that of nitrogen 0.97203—to be 15.88. He has more recently determined the molecular volume of carbon monoxide, with reference to oxygen under normal conditions, to be close upon 1.0001. Hence we are led to admit that nitrogen and carbon monoxide, by reason of the proximity of their critical points, have, to within about  $\frac{1}{10000}$  part, the same molecular volume. The atomic weight of nitrogen is hence deduced as 13.97, while the determinations of Stas lead to the value 13.94; that of silver as 107.17; that of chlorine as 35.21; that of bromine as 79.39; that of iodine as 125.96; and that of carbon as 11.916.

As the result of eleven series of experiments embodying 43 determinations, Theodore W. Richards computes the atomic weight of copper—O=15.96 as 63.44; O=15.87 as 63.09. In his investigation every reaction was assumed to involve some constant error, and every substance to contain some constant impurity, till the contrary was proved.

**Chemical Analysis.**—An account of an investigation of the composition and properties of the dangerous explosive iodide of nitrogen has been published by Dr. Szuhay, of the University of Buda-Pesth. The substance was obtained by adding excess of aqueous ammonia to a concentrated solution of iodine in potassium iodide in the form of a very fine powder, which was found to be capable of safe purification by washing with a dilute solution of sodium sulphate. The filter should be protected from draughts of air, which are liable to induce explosion. The purified substance—in a moist condition, because it can not be dried without explosion—was analyzed by decomposition with a solution of sulphurous acid of known strength, and estimation of the amount of iodine and ammonia in the solution. Its composition was proved to be  $\text{NHI}_2$ , as Dr. Gladstone and Bineau had determined it. This conclusion as to its composition is also supported by the fact that Dr. Szuhay has been able to prepare a silver derivative of the compound by replacing the hydrogen atom with silver. The silver compound is a black flocculent substance, quite as explosive as iodide of nitrogen itself. When it is carefully dried, the least rise of temperature provokes explosion. It also detonates on being struck, or even when brought into gentle friction with any other substance. When warmed under water, or when treated with dilute acids, it is quietly decomposed. Evidence was adduced by the author to show that potassium, sodium, and barium replacement compounds are capable of existence in solution.

A comparison of the results given in the "School of Mines Quarterly" by Dr. Waller, of Columbia College, of his recent determinations of the dissolved salts in the water of the Great Salt lake with those obtained by Gale, Allen, Bassett, and others, shows that the salinity is constantly changing; and a closer examination

reveals the fact that there is a variation from place to place. This is ascribed to local differences in the amount of evaporation, and to the influx of springs which are not seen at the surface. For some of the constituents the water is nearly at saturation point. Differences of temperature are also apt to cause slight differences in composition.

In the determination of the acidity due to the fixed and the volatile acids of wine by J. A. Müller, the determinations of potassium bitartrate and of tartaric acid, succinic acid, and tannin having been effected, the acidity of the fixed acids enables the analyst to find the quantity of the other acids, such as the malic, or of acid salts that may be present. On the other hand, the standard of the volatile acids shows whether the wine examined is sound or diseased.

The method of Dr. Robert Koch for the detection of cholera bacilli requires that, while observing the well-known precautions, a little of the suspected water be added to a solution of peptone and allowed to stand at 37° C. If there are in the material any cholera bacilli capable of development, they increase rapidly at the temperature mentioned in from six to twelve hours. In consequence of their avidity for oxygen, they collect on the surface of the liquid, where under certain circumstances they form a fine film, distinctly visible. On the microscopic examination of a drop of the liquid from the surface the characteristic comma bacilli are seen in prodigious numbers. The bacilli will also develop in their characteristic colonies in from twenty-one to twenty-four hours when dropped upon gelatin plates.

A quantitative method of separating iodine from chlorine and bromine, by D. S. Macnair, is based on the fact that, when treated with chromic acid mixture, silver iodide is converted into the iodate, while silver chloride and bromide are converted into the sulphate.

On account of the generally great stability of organic fluorides, the determination of fluorine in gaseous compounds presents some difficulties. In a method recommended by Maurice Meslaus, when the combustible organic fluorides are burned in oxygen, the fluorine is transformed into hydrofluoric acid if the molecule contains the quantity of hydrogen necessary for this transformation. We may then perform a volumetric determination of this acid by means of an alkaline solution, or convert it into calcium fluoride and thus weigh the fluorine.

Meeting some difficulty in removing suspended finely divided particles of clay from water, Francis Watt, after experimenting with various precipitates which could be produced in the water and carry down with them the troublesome particles, found the formation of aluminum hydrate by adding alum or some other suitable aluminum salt and precipitation with lime water efficient. It then occurred to him that the method might be applicable for purifying water from micro-organisms. He, however, substituted ferric chloride for the alum. This was filtered in fully saturated solution through sterilized filter paper, and small quantities of the water were introduced into nutrient solutions. In practically every case no development of micro-organisms took place, even when the solutions were kept for more than a

week. Similar tubes were treated with the water before the addition of the iron solution, and growth in every case followed in eighteen hours. The experiments were repeated at intervals over a period of two years, and always with the same results. The process has been employed in public institutions and private houses in the Leeward Islands, with apparently good results.

Sodium peroxide is used as an analytical agent by J. Clark, who finds that by heating powdered minerals with it, the arsenic and sulphur may be made soluble.

**Chemical Synthesis.**—The fundamental hypothesis which has guided Raoul Pietet in his experiments in chemical synthesis, and the experimental variations of it, have enabled him to establish eight laws: 1. At very low temperatures (below  $-130^{\circ}\text{C}.$ ) no chemical reaction takes place, whatever substances are present. 2. All chemical reactions are manifested spontaneously at a certain temperature and under a certain pressure exerted upon the constituents; this is the temperature limit. 3. The same reactions may be obtained below the temperature limit if we apply auxiliary energy by the use of electric currents or discharges. 4. Exothermic reactions always present two phases: in the former we retain a control of the temperatures if we can remove from the combining bodies by radiation as much heat as is produced at the same moment by the simultaneous effect of the affinities of the extraneous energies introduced into the substances; in the second phase, the temperature rises suddenly until the reaction takes place above the temperature limit. The first phase is the reaction limit; the second phase is the reaction in mass. 5. Endothermic reactions are always limit reactions. 6. The dissociation of the products obtained by exothermic reactions corresponds to the laws of endothermic combinations, and reciprocally. 7. The temperature limit of chemical reactions is not in a known simple relation with the apparent energy of the phenomenon; on the contrary, the quantities of heat liberated seem to class the ascending order of the temperature limit, especially in one and the same family of substances. 8. The electric spark and current seem to be the best media for supplying extraneous energy to limited chemical reactions. With these eight practical laws we may establish a complete scientific programme for the discovery of a general method of chemical synthesis. We begin by bringing in contact the simple bodies, and defining experimentally the laws which govern their combinations. Next we shall study combinations of the binary compounds, ternary substances, etc., to constitute our dynamic tables. The successive experiments will discover the laws which govern the phenomena, and chemical reactions will be defined precisely and certainly. The present experimental results give a preliminary sanction to this programme.

**Bacteriological Chemistry.**—Speaking in the British Association of "The Present Position of Bacteriology," more especially in its relation to chemical science, Prof. P. Frankland showed that microscopical characteristics, even under favorable circumstances, were insufficient for the recognition of bacteria; consequently morphological methods have had to give way to chemical and physiological tests. Chemical tests, being

as yet few in number, are apt to be treacherous, but they are capable of considerable extension. The typhoid bacillus, for example, will give no reaction with indol, such as is characteristic of the cholera bacillus, and will not ferment glucose, but will coagulate milk. With regard to the chemical products of the action of organisms, the questions suggest themselves, Does the same substance yield different products with different bacteria? Do the same bacteria give rise to the same products with different substances? Experiments with pure cultures have shown that the same bacillus will give identical products with such chemically related bodies as glycerol, arabinose, mannitol, etc. It is probable that fermentability is due to the power possessed by a set of substances of yielding the same intermediate body which will give identical end products in all cases. This may explain why only those sugars which contain three carbon atoms or a multiple of three in their molecule appear to be fermentable. The production of all three varieties of lactic acid by fermentation of glucose by different organisms has been accomplished. The problems of selective fermentation were next dealt with. Its cause was to be sought for in the slight differences of solubility, etc., shown by active substances when in combination with optically active isomeric bodies. One isomer is not found always to be quite unfermentable; in some cases both isomers can be destroyed if time be allowed, one, however, always disappearing first. Of great interest is what may be called educational culture, by means of which new characteristics may be artificially impressed upon an organism. A species of bacillus morphologically identical with anthrax, but incapable of producing spores, may be obtained by cultivation of true anthrax in broth containing certain salts, such as potassium dichromate or nitrate. The new characteristics will even persist after passage through the bodies of animals. On the other hand, by various means the virulence of pathogenic organisms can be greatly increased, though it has not been found possible to produce pathogenie from nonpathogenic organisms. It becomes probable, therefore, that naturally occurring bacilli will acquire new characteristics according to alterations in the conditions of their growth. The occurrence of nontoxic associated with certain toxic organisms—for example, those of diphtheria, anthrax, cholera, and typhus—is suggestive in connection with this fact. It is possible that aerobic organisms may become so far modified as to be active in the absence of air. Much study is wanted in this direction. Speaking of the disinfecting action of light under different conditions, Prof. Frankland said that the generation of hydrogen peroxide from air and moisture under the influence of light, discovered by Richardson, seemed to play an important part in this action of sunlight, and the problem partly resolved itself into the study of the conditions of formation of this substance. The effect of different salts in modifying the bactericidal effects of sunlight was touched on, and, in conclusion, the necessity was urged upon chemists of a knowledge of biology and botany, to enable them to carry on bacteriological work, for which the first necessity had now become profound knowledge of chemistry and chemical



methods. In the discussion following the reading of Prof. Frankland's paper, Prof. Burdon-Sanderson advocated the establishment of an institute for research where chemists, biologists, and pathologists could mutually assist one another.

The fact that modifications may be produced in the physiological character of micro-organisms by natural or artificial means, and that they may become inherited and permanent, carries with it an important problem in the identification of bacteria, for the characteristic appearance of an organism may be so modified that its original parentage will be difficult to recognize. A race of sporeless anthrax or *asporogène* anthrax, possessing the same virulent properties as the original form, has been produced by Chamberland and Roux, Lehmann, and other investigators. Phisalix has produced sporeless anthrax by the continuous and successive cultivation of anthrax bacilli at 42° C., the process having been continued through twenty-five generations for five months. The twelfth generation yielded a variety incapable of producing spores except on being first passed through the body of a mouse, and the fourteenth generation established a race permanently incapable of producing spores. These *asporogène* cultures, however, unlike those of Chamberland and Roux, suffered an attenuation of their virulent properties, and the descendants of the twentieth generation were absolutely harmless as toward animals. The possibility, therefore, of pathogenic microbes losing their virulence, or of harmless saprophytes being trained up to acquire pathogenic properties, is one that must be taken into consideration; and when it is remembered that sunshine alone may produce such modifications in the physiological development of microbes as permanently to deprive certain pigment-producing bacteria of this property, and raise up instead a colorless race, the indulgence of this possibility becomes yet more within the bounds of legitimate conception.

Several observers having noticed that the development of putrefactive organisms is checked by the combined action of sunlight and oxygen, which was regarded as an outcome of an action excited by the organism, A. Richardson made experiments with urine in order to ascertain whether, when sterilization has been effected by light, any oxidizing agent, such as hydrogen peroxide, is formed, and whether such substance may not be the sterilizing agent. No hydrogen peroxide is produced by the action of oxygen on sterilized urine in the dark, but an appreciable amount is formed on exposing the urine to light; the production of the peroxide is hence independent of the presence of organisms. Substances such as manganese dioxide, which destroy hydrogen peroxide, greatly facilitate organic growth. The addition of hydrogen peroxide to fresh urine renders the liquid much less liable to change under the influence of organisms, while, if added to urine in which fermentation has already set in, the peroxide is rapidly decomposed.

The micro-organisms comprise chiefly in their constitution substances—albuminoid, cellulose, and mineral substances, which are isolated by incineration—which are heavier than water. If the living organisms float in liquids, such as wine, cider, or milk, the specific gravity of

which borders closely on unity, it is because they probably contain small quantities of gas. Considering the small dimensions of the bodies in question, the force that impels them to rise or sink in a liquid heavier or lighter than their protoplasmic substance is certainly very feeble. The tendency to separation may be intensified by submitting vessels containing fermentable liquids and organisms to rapid rotatory movement. The centrifugal force may be rendered several hundred times greater than the force of gravitation. Rotation, according to M. R. Lezé, classifies fermentable liquids, and determines the formation of a glutinous or gelatinous deposit at the outermost parts of the apparatus employed. On examining the muddy deposits under the microscope they are found to consist chiefly of a heap of living organisms. By this method M. Lezé has separated the organisms from a considerable number of liquids in course of fermentation. The organisms appear to separate the more easily the larger are their dimensions. To facilitate the separation, the liquid may be heated, or diluted with liquids lighter than water. This method of separating bacteria may find an application in bacteriological research.

**Vegetable Chemistry.**—Remarking upon the immense variety of substances produced in the vegetable kingdom, E. Warington observes that the plant is the finest chemical laboratory with which we are acquainted. While some kinds of chemical work are common to all plants, there is hardly a species which does not possess some special capacities, which does not produce some compounds different from its neighbors. The extent to which this specialization is carried and the immense variety of the products obtained are truly wonderful; and our wonder increases when we turn to the materials employed in this work, which are of the simplest kind—water, carbonic-acid gas, oxygen, nitric acid, and a few inorganic substances. Out of these the whole of the immense variety of vegetable products is constructed. The methods of plant chemistry are of supreme interest to the chemist and to the vegetable physiologist. The higher plants are in some respects unfavorable subjects for the study of plant chemistry. Their different parts have different functions, and the changes in progress are obscured by the fact that changes of a different type are going on at the same time, and in places very near to each other. In bacteria, however, we have the vegetable cell in its simplest form, and the life changes, so far as we know, in all the cells of every species living under the same conditions are the same. Moreover, these organisms grow freely in suitable solutions, and the chemical changes produced in the materials held in these solutions can be readily ascertained. We have thus in a study of the chemistry of bacteria a splendid opportunity for enlarging our knowledge of plant chemistry, and, indeed, of becoming acquainted with the fundamental reactions on which synthetic organic chemistry depends. The results, so far, of the study of the chemical work performed by bacteria have been remarkable. The immensely numerous species of bacteria have been found to exhibit an almost equally great diversity of action, and the study has widely

enlarged our conceptions of the chemical power of the vegetable cell.

The chemistry of the two nitrifying organisms furnishes an excellent example of the way in which certain special functions, indicating narrowly limited lines of work, are exercised by individual species of bacteria. By one of these organisms ammonium carbonate is oxidized and the nitrogen converted into a nitrite. By the second organism nitrites are converted into nitrates. The nitrous organism can oxidize ammonia to nitrite, but it can not change a nitrite into a nitrate. The nitric organism, on the other hand, oxidizes nitrites readily, but it can not oxidize ammonia. Both organisms are in all fertile soil, but the formation of nitrites is not usually perceived, as they are at once converted into nitrates. The organisms develop and perform their functions only when certain inorganic salts supplying phosphates, sulphates, potassium, calcium, and magnesium are present. The continued omission of one of these has been proved in several cases to bring about a cessation of growth and function. Nitrogenous food is amply furnished to these organisms by ammonia, the nitrite or nitrate of which is intentionally added to the solution. It is unnecessary to supply them with any carbonaceous food except carbonates, bicarbonates being preferred. The fact of the conversion of carbonates into organic cell substance has been proved in the case of the nitrous organism; it is at present assumed to be also true of the nitric organism. A third organism has been obtained from soil by Winogradsky, which possesses the remarkable power of assimilating the free nitrogen of the atmosphere. To accomplish this assimilation it is simply necessary to grow it in a solution containing sugar (dextrose) and the necessary salts, no combined nitrogen being supplied. Under these circumstances a vigorous growth of the bacillus takes place, the sugar undergoes a butyric fermentation, and at the end of the operation it is found that the culture has acquired nitrogen. We have no clew as yet to the mode in which the nitrogen enters into combination; but it is evident that in this case, as in the nutrition of the nitrous organism, the difficult piece of chemical work forms but a small part of a much larger reaction that is at the same time in progress, and with which it is essentially connected.

A paper by H. T. Brown and G. H. Morris deals with the occurrence, relations, and physiological significance of the starch, diastase, and sugars contained in foliage leaves. The work originated in an attempt to discover the explanation of the conditioning effect of "dry hopping," or the addition of a small amount of dry hops to finished beer. This was ultimately traced to the presence in the hop strobiles of a small but appreciable quantity of diastase, sufficient to cause slow hydrolysis of the noncrystallizable products of starch transformation left in the beer, and to reduce them to a condition in which they can be fermented by the yeast. The authors were then led to inquire into the first formation of the starch in the chloroplasts of the foliage leaf, the mode of its dissolution and translocation in the plant, and the nature of the metabolized products; the results obtained are antagonistic to the assumption made by Sachs, that all the

products of assimilation at some time take the form of starch. Only a small portion of the assimilated material exists at any one time as starch. The fluctuations in the amount of starch in leaves were also determined. Wortmann's recent denial that diastase plays any part in the dissolution and translocation of starch in leaves is pronounced incorrect. The authors show that instead of leaves containing little or no diastase, every leaf examined by them contained sufficient diastase to transform far more starch than the leaf can have contained at any one time. The products of the hydrolysis of starch by leaf diastase are identical with those formed by malt diastase, maltose having been directly separated from the leaves; leaf diastase does not convert maltose into dextrose, but the leaf contains an enzyme capable of inverting cane sugar. The amount of diastase present varies greatly in different plants, and within narrow limits even varies in the same plant at different times. It is very high in the case of the leguminosæ. Any conditions that favor a decrease in the leaf starch result in an increase of the leaf diastase; thus a marked increase in diastatic activity is observed in leaves kept in darkness. Contrary to Wortmann's statement, leaf diastase can attack the starch granule under certain conditions; no evidence could, however, be obtained of the disappearance of starch in killed leaves under the influence of the contained diastase, and the authors are led to conclude that the first stage of dissolution of the starch granule in the leaf is in some way or other bound up with the life of the cell. From experiments on the leaves of *tropæolum*, the authors draw the following conclusions: Cane sugar is the first sugar to be synthesized by the assimilatory processes. This sugar accumulates in the cell sap of the leaf parenchyma while assimilation is progressing vigorously, and when the concentration exceeds a certain point starch begins to be elaborated by the chloroplasts at the expense of the cane sugar. This starch forms a more stable reserve material than the cane sugar, and is drawn on only when the latter more readily metabolized substance has been partially used up. Cane sugar is translocated as dextrose and levulose and the starch as maltose. From the invert sugar derived from the cane sugar the dextrose is more readily used up for the respiratory processes, and possibly also for the new tissue building than is the levulose; hence in a given time more levulose than dextrose must pass out of the leaf into the stem.

**Miscellaneous.**—Increased attention is given to the study and utilization of the disinfecting properties of peroxide of hydrogen. Richardson has shown that the antiseptic action of the sun on urine is due to the production of this substance; for samples exposed to the sun remained clear, and on examination were found to contain it, while similar samples kept in the dark became turbid and contained none. Traugott has pointed out as a result of his investigations that it may be substituted for corrosive sublimate and carbolic acid in all cases where the period of contact is not less than from a quarter to a half an hour; but that it is not suitable when rapid disinfection is required. Being innocuous and not injurious to clothing, etc., it is a safer disinfectant for general application than the others, but its cost is



considerably greater. Heidenhain mentioned several years ago that he had used peroxide of hydrogen constantly as a gargle in cases of diphtheria, and Traugott relates that a 2-per-cent. solution of it with a young and vigorous growth of the diphtheria bacillus on blood serum destroyed the organism. If, however, two-days'-old cultures were similarly treated, contact for thirty minutes, even when repeated 3 times, was not sufficient for its annihilation. Thus its therapeutic value depends on its immediate application at the very outset of the disease; while it may be recommended as an important prophylactic during epidemics of diphtheria. Van Tromp mentions that an addition of peroxide of hydrogen in the proportion of 1 to 10,000 parts of water, when shaken up and allowed to stand for twenty-four hours, is usually sufficient to sterilize a water. Altheafer found that to insure sterility it was well to use larger proportions of the peroxide, or 1 to 1,000 parts of water. Experiments made with waters purposely infected with cholera and typhoid bacilli respectively showed that in both cases those organisms were destroyed after twenty-four hours in the 1 to 1,000 mixture. The dietetic value of the water is not affected by the addition of the peroxide, and no danger is incurred if the peroxide is pure.

Ammonia vapor is recommended by Riglet as an important means of disinfection. The author experimented with Koch's cholera bacillus, the typhoid bacillus, Loeffler's diphtheria bacillus, and the spores and bacilli of anthrax. Threads soaked in broth cultures of these various organisms were freely exposed in a room filled with ammonia vapor, while other threads were wrapped up in dry and damp cloths respectively before being submitted to the vapor, and in every case control threads were simultaneously exposed to air. Cholera bacilli were killed after two hours' exposure in the ammonia room, whether free or inclosed in dry cloths, while twice that time elapsed before they succumbed in moist surroundings. In ordinary air they were destroyed in three hours, but they were alive after two days when kept in moist cloths. Two hours' exposure in the ammonia vapor sufficed to destroy the typhoid bacilli, but six hours were necessary in moist surroundings, while twenty-four hours' exposure in ordinary air produced no effect upon them. Anthrax bacilli succumbed in three hours in the ammonia room, in five hours when wrapped in dry cloths, while they were not affected by a day's exposure in ordinary air. The spores were not destroyed till after being eight hours in the ammonia vapor, and were not affected in ordinary air. Diphtheria bacilli, whatever their environment, were annihilated in four hours by the ammonia vapor, while they survived twenty-four hours' contact with ordinary air.

In the case of the poisoning of 20 persons at Columbus, Ohio, in October, 1892, from eating canned corned beef, examination for mineral poisons formed by the action of the meat on the materials of the can yielded, according to Thomas K. Lewis, no traces of toxic substances. A systematic examination for ptomaines was then made, and gave evidence of the presence of such substances. After eighteen days the

same methods were employed without success, for no tests could be obtained. When the meat was first analyzed, it was found to be poisonous to animals to which it was given. Eighteen days afterward it was fed to animals without inducing symptoms of poisoning. Hence, the poison is supposed to have been decomposed during the interval.

The products of the sublimation of arsenic and the various allotropic modifications of the element have been investigated by Dr. Retgers. His experiments show that there is no amorphous modification of arsenic. The deposit called black amorphous arsenic, which is obtained during the sublimation of the element in a current of hydrogen and also in a number of high temperature decompositions of arsenic compounds is found to be microcrystalline, and exhibits distinct evidence that it consists of the ordinary regular variety. There are consequently only two known well-defined modifications of arsenic: the stable form, which crystallizes in hexagonal prisms, is silver-white and specifically heavy, and requires a comparatively high temperature for volatilization; and the specifically lighter and more volatile modification, which crystallizes in octahedrons and exhibits a black surface. These two forms correspond with the two modifications of phosphorus—the regular black variety with the regular yellow form of phosphorus, and the silver-white hexagonal form with the hexagonal red phosphorus. Evidence is adduced of the probable existence of a third crystalline modification of arsenic, the crystals of which belong to the monoclinic system. All elementary arsenic is opaque; the former observations of yellow and brown transparent arsenic are shown to relate to compounds that have been mistaken for the element. Information has been gained by Dr. Retgers concerning the little-known solid hydride of arsenic,  $AsH_3$ , and the suboxide,  $As_2O_3$ , the existence of which has hitherto been considered doubtful, but is now regarded by the author as reasonably established.

Four samples of powders sold for washing clothes were analyzed by W. J. Kinney, W. H. Wenger, and an associate. In three of them the principal ingredients were sodium carbonate, 45.2 to 49.2 per cent.; fatty acids, 25.6 to 26.4 per cent.; and water, 19.1 to 24.9 per cent.; and combined soda, 2.6 to 3.5 per cent. The fourth sample consisted of sodium carbonate, 26.9 per cent.; fatty acids, 44 per cent.; combined soda, 3.4 per cent.; fine sand, 16.3 per cent.; and water, 8.8 per cent. A portion of the water was necessarily in the soap, and the remainder was with the sodium carbonate, which had in each case been partly dried. No resin or borax was found in the soaps. The powders may therefore be generally described as mixtures of soap and dried washing soda, both powdered. While a small amount of such powders may properly be employed in conjunction with soap to remove the "hardness" of the water in washing, the substitution of any of them for soap must result in the gradual corrosion of cotton, linen, or woolen goods. Borax might be employed in place of soda in these preparations with great advantage; for it has no corrosive action on textile fabrics, and while it removes the hardness from the water it is also an excellent detergent.

**CHILI**, a republic in South America. The Chilian people declared their independence on Sept. 18, 1810, but independence was not established until April 5, 1818. Their Constitution was adopted in 1833. The legislative power is vested in a Congress consisting of a Chamber of Deputies and a Senate. The former is composed of 94 members in the proportion of one to every 30,000 inhabitants, elected for three years, by direct vote of the departments. The Senate consists of 32 members in the proportion of 1 to every 3 Deputies, elected for six years by direct vote of the provinces, one half of that body going out every three years. Electors must be twenty-one years of age, and be able to read and write. The executive is vested in a President, elected by indirect vote for the term of five years, and not re-eligible while in office. He is assisted by a Council of State, in which he nominates 5 members, while 6 are chosen by Congress, and by a Cabinet of 6 ministers, which in the beginning of 1893 consisted of the following members: Minister of the Interior, R. Barros Luco; Minister of Foreign Affairs, Worship, and Colonization, I. Errazuriz; Minister of Justice and Instruction, M. del Campo; Minister of War and Marine, Gen. L. Arteaga; Minister of Industry and Public Works, W. D. Larrain. The Ministry of Finance was vacant.

**The Army and Navy.**—According to a law passed on Jan. 2, 1892, the regular army is limited to 6,000 men, who are organized into 3 regiments of artillery, 3 regiments of cavalry, 8 regiments of infantry, and a corps of engineers. The army is commanded by 104 field and 855 inferior officers. The National Guard in 1892 numbered 51,090 men, of whom 42,120 belonged to the infantry and 8,970 to the artillery.

The navy consisted in 1892 of 3 ironclads, 3 deck-protected cruisers, 2 torpedo catchers, 3 corvettes, 2 gunboats, 10 first-class and 2 second-class torpedo boats, 2 dispatch vessels, 2 transports, 3 small gunboats, and 4 sailing vessels. The "Capitan Pratt," built in France at the cost of \$3,000,000, was completed in 1892. She is a steel ironclad of 7,000 tons, having a length of 327 feet, with 60 feet of beam and a draught of 20 feet, and is propelled by engines of 12,000 horse power which give a speed of 17 knots. The armament consists of 12 Canet guns, 20 Hotchkiss guns, and 5 Gatling mitrailleuses, the guns being worked by electricity. The navy was manned by 130 officers, 126 engineers, 215 employees, and 1,285 sailors.

**Finances.**—The budget for 1893 estimates the revenue at 65,020,000 pesos (1 peso=91 cents), of which 25,000,000 pesos are derived from export duties, 22,000,000 pesos from import duties, 14,000,000 pesos from railroads, 1,150,000 pesos from the agricultural tax, 800,000 pesos from stamps, 800,000 pesos from posts and telegraphs, 270,000 pesos from storage and wharfage, and 1,000,000 pesos from various other sources. The expenditure is estimated at 50,302,000 pesos, of which 13,174,204 pesos are for public works, 12,534,585 pesos for financial administration, 7,154,263 pesos for public instruction and justice, 6,480,308 pesos for the army, 5,627,786 pesos for the navy, 4,285,251 pesos for the interior, and 1,045,600 pesos for foreign affairs, worship, and colonization. An extraordi-

nary revenue of 10,589,000 pesos is estimated to accrue from the sales of lands and silver bullion.

The public debt on Jan. 1, 1892, amounted to 110,162,620 pesos, including an external debt of 46,655,489 pesos, an internal debt of 21,124,108 pesos, and 42,383,023 pesos of paper currency. In October, 1892, a loan of \$8,750,000 was raised in London and Paris, paying 5 per cent. interest, for extinguishing the floating debt.

**Commerce.**—The imports in 1890 amounted to 67,889,079 pesos, and the exports to 68,391,381 pesos. Of the total exports, 46,035,857 pesos went to Great Britain, 8,540,075 pesos to the United States, 6,356,470 pesos to Germany, 2,324,455 pesos to France, 2,164,725 pesos to Peru, 79,548 pesos to Brazil, 43,252 pesos to Italy, and 35,808 pesos to the Argentine Republic. The principal exports were: Niter, to the amount of 36,950,339 pesos; copper in bars, 7,618,840 pesos; silver, 4,335,218 pesos; wheat, 1,581,449 pesos. The principal imports and their values in 1889 were: Textiles, 10,887,636 pesos; sugar, 6,766,985 pesos; cattle, 5,083,715 pesos; coal, 2,992,905 pesos; iron goods, 2,895,630 pesos; sacks, 1,415,246 pesos; timber, 870,194 pesos; tea, 817,940 pesos; wine, 793,425 pesos.

**Communications.**—In 1892 there were 1,735 miles of railroads open for traffic, of which 686 miles belonged to the state. The Transandine Railroad is nearing completion; only the section of 42 miles between Santa Rosa and Mendoza is left to be built; 18 miles of the Chilian section, and 88 miles of the Argentine section are finished and open for traffic.

The post-office in 1890 forwarded 18,509,709 letters and postal cards, 32,446 samples, and 24,308,877 pieces of printed matter and journals.

The length of state telegraph lines in 1891 was 12,390 kilometres. In 1890 there were 619,429 messages transmitted over the wires.

**Political Troubles.**—Chili has been governed since the overthrow of Balmaceda by a coalition of the various elements that joined in the revolution, and a safe policy of peaceful recuperation and material development has been pursued which gave general satisfaction, especially to the Conservatives. A tendency to restore the influence of the latter in legislation finally roused the dormant jealousy of the Liberals, especially when the reaction in favor of clerical education which pervades many Catholic countries began to gain headway in Chili. The Congress in February, 1893, passed a bill to grant full amnesty to the Balmacedists, except the officers who took part in wrecking the "Blanco Encalada," and those who were concerned in the massacre at Los Canos. A measure passed in November, 1892, for the redemption of treasury notes in specie and the resumption of gold coinage could not be carried out, and Congress was called upon to modify the project for paying off the paper currency in silver coin. In order to avert a banking crisis and satisfy the claims of the bankers of Valparaiso and Santiago, the Government agreed in March to pay into the banks \$9,000,000 in treasury notes, the amount of the forced loans exacted by the Balmaceda Government. In the beginning of April a conspiracy against the Government was discovered. An attack was made on the Government buildings by a mob, and a quantity of con-



cealed arms fell into the hands of the authorities. The disorders in Santiago were easily put down, but the Minister of War, upheld by the President, decided to proclaim martial law in the provinces of Santiago, Valparaiso, and Aconcagua. The rest of the ministers refused to take the responsibility for this course, and on April 7 they offered their resignations. The persons who engaged in this seditious plot were arrested, except such as made their escape. Two of the latter took refuge in the American legation, the minister giving them the right of asylum, which in South American countries has been regarded as a diplomatic privilege, but is strongly objected to by the present Government of Chili. On instructions from Secretary Gresham, Minister Egan afterward withdrew the asylum. The Chilean Minister of Foreign Affairs complained that the American minister connived at the escape of one of the refugees, Blondlott Holley, in the disguise of a workingman, but the authorities in Washington did not consider the surrender of the accused persons to the Chilean authorities a necessary part of the important step they had taken in abandoning an established customary right with the object of placing the United States in accord with the Spanish American States in questions affecting their standing as civilized powers. The other refugee, Col. Fuentes, was captured while leaving the American legation. Several of the leaders of the conspiracy were tried and condemned to be executed. The United States consul at Valparaiso declined to sign a petition for the pardon of Briceno, the most prominent of these, as did all the European consuls except the Spanish, on the ground that he did not wish to interfere in the internal affairs of the country. President Montt, with the approval of the Council of State, commuted the sentence of Briceno to imprisonment for life. This act of clemency drew from the leaders of the old Balmaceda party a declaration of a desire to obliterate past differences and work in harmony with the Government in the common cause of restoring Chili to her former prosperous condition. The revolutionary attempt deterred the Government from carrying out the policy of conciliation which Congress had previously approved. The state of siege had been extended by act of Congress till December, and when Congress met in regular session on June 1, President Montt in his opening speech lamented the fact that the recent conspiracy prevented him from granting a general amnesty yet. He hoped, however, in view of the expressions of loyalty made by those who had opposed the Government, to be able to issue a decree of amnesty at an early date, and said that it was his earnest desire that all the sorrowful memories growing out of the civil war should disappear.

**The New Cabinet.**—President Montt declined to accept immediately the resignation of his Cabinet when it was proffered, and requested the ministers to continue to carry on the business of their departments until he could consult with the presidents of the two houses of Congress. He formally accepted the resignations of the ministers on April 17, having induced Errazuriz to undertake the task of forming a new ministry. The list was announced on the next day as follows: Premier and Minister of the

Interior, Isidoro Errazuriz; Minister of Foreign Affairs, Public Worship, and Colonization, Joaquin Rodriguez-Rosas; Minister of Finance, Alejandro Viel; Minister of Justice and Public Instruction, Pedro Montt; Minister of War and Marine, Ventura Blanco Viel; Minister of Industry and Public Works, Vicente Davila-Larrain. All the ministers were members of Congress, and the Cabinet was a combination of all the parties. There was a redistribution of portfolios before the Cabinet was finally constituted on April 26, as follows: Minister of the Interior, Pedro Montt; Minister of Foreign Affairs and Colonization, Blanco Viel; Minister of Justice and Instruction, Joaquin Rodriguez-Rosas; Minister of Finance, Alejandro Viel; Minister of War and Marine, Isidoro Errazuriz; Minister of Public Works, Vicente Davila-Larrain.

The question of redeeming the floating debt and paper currency was taken up by the new ministry and again brought before Congress. In the President's speech at the opening he stated that the estimated resources for 1894 were \$60,000,000 in paper and £1,500,000 sterling, while the expenses were estimated at \$49,500,000 in paper and £1,400,000 sterling, leaving \$11,000,000 to pay the floating debt, exclusive of moneys that were expected to be realized from sales of nitrate lands. He expected that before July, 1896, enough bullion would be amassed in the treasury to redeem \$38,000,000 of paper, leaving less than \$30,000,000 in circulation.

**Chilian Claims Commission.**—A treaty between the United States and Chili provides for the adjudication of unsettled claims between the two countries by a Chilian claims commission to be composed of three commissioners, one appointed by each of the governments and one appointed by a third party chosen by agreement between them. Domingo Gana, the Chilian minister at Washington, was appointed to act on the commission as the representative of his Government, and John Goode, of Virginia, was nominated commissioner for the United States, while the Swiss minister at Washington, Alfred de Claparède, was appointed by the President of the Swiss Confederation as the third commissioner and final arbitrator on matters on which the Chilian and United States commissioners differ. The task imposed on the commission was to pass on all claims for damages inflicted by citizens of Chili upon citizens of the United States or by citizens of the United States upon citizens of Chili. All claims were to be presented within two months of the first meeting of the commission, unless the commissioners extended the time for good reasons by virtue of express authority granted to them to allow a delay not to exceed two months. The commission must examine and pass upon every claim within six months from the time of its presentation. The expenses of the commission are deducted from the sums awarded. The American claims in some cases date from the Chilian war of independence, when arms and supplies were furnished to the insurgents which have never been paid for. Many claims belong to various periods in the succeeding fifty years of Chilian history, but the bulk of the money claimed by American citizens is due as compensation for property seized or destroyed in Peru by the invading Chilian army during the

war between Chili and Peru. Edward C. Dubois claims \$500,000 for the railroad from Chimbote to Huaraz, built by him and torn up by Admiral Patricio Lynch. The Central and South American Telegraph Company demands \$160,000 as compensation for the interference of the Balmain Government with its business during the late revolution. Other claims are from owners of shares in the nitrate beds. About 75 claims were made by Americans through the Department of State, but many of them are of doubtful merit. The claims of Chilians were comparatively insignificant in number and amount. The commission met in Washington in the office of the Bureau of American Republics, and began its work on Oct. 9, 1893.

**CHINA**, an empire in eastern Asia. The Government is an absolute monarchy under the Tsing or Manchu dynasty, which has reigned since 1644. The throne descends on the death of an emperor to the prince among the sons of his three first wives whom he has appointed his heir. When the young Emperor Tungchi died without issue, Jan. 22, 1875, the order of direct hereditary succession was broken for the first time since the foundation of the dynasty. He was his father's only son, and none of his father's brothers was eligible for the throne, because the law requires an heir to be younger than the person from whom he inherits. It was necessary, therefore, to select one of the sons of his father's younger brothers, and the choice—announced by the two Dowager Empresses, and said to have been recorded in his will—fell upon the son of Prince Chun, the seventh son of the Emperor Taoukwang. The infant Emperor, born Aug. 2, 1872, was proclaimed, and the Eastern Empress and Tungchi's mother, the Western Empress, became regents during his minority. The latter survived and ruled until after the Emperor reached his legal majority, in February, 1887, and after he married, on Feb. 26, 1889, she resigned the Government into his hands, March 4, 1889.

The Emperor is advised by a Grand Council, called the Chun-Chi-Chu, a Privy Council or Cabinet, the Nui-Ko, and a Ministry of the Imperial Household, the Tsung-yen-fu. The administration is carried on by six ministries, the Liu-pu Courts, which deal respectively with the civil service, finance, worship and ceremonies, war, justice, and public works. There is a Foreign Office, which deals with affairs connected with subject countries, while true foreign relations are referred to a board called the Tsungli-Yamen. The Tu-Cha-Yuen, or Board of Censors, is not only the supreme court of appeal for the empire, but is an important factor in the legislative and administrative machinery, because it has power to pass under review and publicly criticise any imperial edict, and address memorials to the Emperor upon errors or abuses in any branch of the Government.

The government and revenues of the provinces are to a great extent administered independently of the central authorities, but the latter retain dominion and control through their power to appoint and remove the administrators. The Governor-General of the imperial province of Pechili, at present Li-Hung-Chang, is also superintendent of the commerce of the ports of Tientsin, Chifu, and Niuchwang. The Governor-

General of the Liangkang, embracing Kiangsu, Kiangsi, and Nganwei, is superintendent of the southern ports. The governor-generalship of Minche comprises Che-Kiang, Fokien, and Taiwan or Formosa. Honan, Shantung, and Shansi have each a governor, like the individual provinces of a governor-generalship, while the great province of Szechuen, like the imperial province, is administered by a governor-general. Other governor-generalships are Lianghu, composed of the provinces of Hupeh and Hunan; Shankan, embracing Shensi and Kansu; Liangkwan, composed of Kwangtung and Kwangsi; and Yunkwe, containing Yunnan and Kweichau. Sintsang, or the New Territory, embracing the Tianshan districts, with Kulja or Ili, has a governor. In Manchuria there is a commander in chief of the field army, while Shingking, or Southern Manchuria, is administered by a commandant-general, and Kirin, or Central Manchuria, and Holunkiang, or Northern Manchuria, each by a governor, who is at the same time the Manchu general. The Li-Fan-Yuan, or subject countries, of Mongolia are ruled by military governors. Tibet is administered by native officials, who are supervised by two Chinese residents in Lhasa, and in Sining, or the Koko-Nor territory, there is a Chinese governor, while a garrison of several thousand Chinese troops, distinct from the native Tangut forces, is distributed in various places throughout the country. The Dalai Lama, or spiritual ruler of the country, can not be enthroned without the previous assent of the Emperor of China.

**Li-Hung-Chang.**—The international relations of China, as well as all the progressive movements of the empire in appropriating the Western arts and sciences, have been for twenty years mainly concentrated in the personality and labors of one man. His achievement has been so remarkable that a connected sketch of his life is desirable. Li is viceroy of the metropolitan province of Chihli, in which Peking is located, Senior Grand Secretary of State, High Imperial Commissioner of Foreign Affairs, Director-General of the Coast Defenses of the North and Imperial Navy, Northern Superintendent of Trade, and Commander in Chief of the Army of North China. These various offices are not merely nominal, but are watched over with the utmost vigilance by their executive, who is a man seventy-three years of age. Viceroy Li, according to the "Peking Gazette," was born at Seu-chew, in the Hofei district, in the year 1819, of pure Chinese blood, and has always been identified with the native party. He was among the first in the three successive literary examinations, and in 1847 was enrolled in the Hanlin or Imperial Academy, the highest degree in the empire. He was an official in the imperial printing-office when the Taiping rebellion broke out in 1851—a convulsion that almost ended the empire in twain, cost 20,000,000 lives, and 3,000,000,000 taels, and took thirteen years to suppress. In this struggle Li became prominent. First called into the field to act on the staff of the generalissimo, he was in the last years of the war the Governor of Kiang-su, which, with Che-Kiang, constituted the most important field of operations. Li's appreciation of Western military skill was shown in the part he took in the organization and use of the "Ever Victorious



Force," a Chinese legion armed, drilled, and disciplined according to European fashion, led first by the American Ward, who recruited the corps, and afterward by the more celebrated Gordon. Under both these leaders it fought with great valor and success, and was a prime factor in the overthrow of the Taipings. The last campaign, resulting in the capture of Nanking, the rebel capital, was conducted by Li in person, who had developed as much genius in the field as he had shown in council. From the very close of the Taiping war Li-Hung-Chang began that persistent labor for the adoption of the arts and sciences of the West which has furnished the keynote of his life. He at once began to memorialize the throne for the creation of an army and navy on the European model, and found a hearty supporter in Prince Kung, but an uncompromising opponent in the senior Empress Dowager, as also in the Board of Censors, who were saturated with the ancient Chinese traditions. In 1870 Li was promoted to the viceroyalty of Chihli, a province of 20,000,000 inhabitants, and made Senior Grand Secretary of State, which gave him direct supervision of international questions. The eyes of foreign powers had now begun to turn to him as best fitted to inspire the foreign and domestic policy of China, so far as one man could move the machinery of an enormously cumbersome system. It was by Li's authority that 30 Chinese boys were sent for education to the United States in 1872, and that the Tung-Wan-Kwan College was established at Peking under Dr. W. H. P. Martin, with the help of Prince Kung. The nucleus of this as a training school for interpreters already existed. It was now made a college for training in the arts and sciences of the West, under a large and able faculty. Li availed himself of the Russian war scare of 1880 to give his plans a great impetus. He was the authoritative leader of the peace party, and it was with much difficulty that he prevented China from rushing into a disastrous war. His powerful argument was not merely that the army and navy were not fitted to meet the forces of a Western power, but that the internal constitution of an empire extending over an immense area made the transmission of intelligence tedious and difficult. The telegraph was advocated as a factor of war power. This logic outweighed the Conservatives. Imperial authorization was given, and the work was pressed with extraordinary vigor under the charge of Mr. Paulsen, a distinguished Danish engineer and electrician. The system now has a network of about 10,000 miles; its nerves everywhere connect the provincial and commercial centers with Peking, and it is said to be administered admirably. Simultaneously with his agitation of telegraphs he began to work for railroads in the empire, but the opposition from all classes was overwhelming. A short line had been built by foreign capital in 1876 from Shanghai to Woosung, but this was bought and dismantled the next year by the Government. Li quietly began a propaganda among the high officials, and Prince Kung soon acceded to his views. The viceroy instigated various memorials to the throne, which were followed by others from himself. The power of his influence was specially shown when the late Tso-Tsung-Tang, the gen-

eralissimo of the Chinese armies, who had always been Li's bitter enemy and rival, adopted his opinions and urged on the throne the authorization of a railway system, as well as of other progressive movements. "Let railways and mines, and the construction of ships and guns, be undertaken at once, as a means of insuring our national prosperity and strength," were almost his dying words. While following up this agitation without ceasing, Li was active in remodeling the army and navy on a Western model, in establishing arsenals and dockyards, military and naval colleges, and in importing Western experts in the various scientific professions as instructors and leaders in the new movement. As administrator of foreign affairs his constant policy was peace even at the price of concession, so that the empire should have no break in her course of internal development. The various imbroglios with Russia, Japan, and France were honorably settled without recurring to arms, except in the case of the Formosa war with France, 1884-'85. This nominally ended with a victory for the French, but Li's crafty diplomacy at its close left the victors with scarcely a shred of honor or advantage. The Army of North China, which includes the flower of the troops, began to be armed with Remington breechloaders in 1876. The change has been progressing without break, and there are now 150,000 men equipped with the deadliest weapons, and officered by Germans or by Chinese trained in the military colleges, of which there are three, located at Tientsin, Fuchan, and Shanghai. In 1877, Li, as administrator of the navy, bought 4 ironclads which had just been built in England for the royal navy, but had been rejected as not up to the standard in speed. From this beginning the great viceroy has gradually formed a navy of 12 wholly or partly armored ships, provided with the best guns, and a large accessory fleet of cruisers, gunboats, and torpedo boats. It is the ambition of Li to build in Chinese navy yards, which have already begun to exist, and to this end he is actively pushing the opening of coal and iron mines, and the establishment of blast furnaces and steel plants. It was not till 1888 that an active beginning was made in railway enterprises. A small road, which had been operated as a tramway from the Kaiping coal mines to tidewater, was equipped for steam, and it was so successful that it was extended. From this nucleus a road has been built 200 miles long, from Tientsin into Manchuria. Its effect as an object-lesson opened the eyes even of the Board of Censors. Li concentrated every influence at Peking, and the result has been that another line is projected from Tientsin south along the coast; and a great trunk line from Peking through northwest China to Hankow, on the Yangtse river, though now in abeyance, will probably be constructed. Two large and well-equipped steel plants have been established at Hankow, on the Bessemer and Siemens-Martin methods. The railway era has just begun, and Li has now the advantage of being supported by such powerful officials as Chang-Chi-Tung, the Viceroy of Honan, and Liu-Ming-Chuan, the Governor of Formosa, who has begun railroad building in his province. It is also understood that Prince Chun, father of the Emperor, and the Empress-Dowager have

been brought into full sympathy with Li's plans. The policy proposed by Li is to build slowly and with Chinese capital, avoiding the incubus of a foreign debt. Joint-stock companies have been organized under the viceroy's encouragement for various industrial enterprises, such as silk, cotton, woolen, glass, and iron manufactures, and Chinese capitalists are learning and following the methods of Western finance as applied to industry. All this awakening has been mainly the work of Li-Hung-Chang, whose tenacity has never lost its grip, in spite of the numerous and almost insuperable difficulties that are imbedded in the very structure of Chinese society. He has now overcome the main obstacles, and he and his successors—for there are a number of able officials trained in his school of thinking—will have an easier task in hastening progressive movements throughout the empire.

**Area and Population.**—The area of China proper is estimated at 1,336,841 square miles, with a population of 349,250,000. Mongolia, with an area of 1,288,000 square miles, has about 2,000,000 inhabitants; Manchuria, 362,310 square miles in extent, has 7,500,000; Tibet, with an area of 461,000 square miles, is estimated to have 1,500,000; and the countries under imperial administration, containing 1,823,000 square miles, have a population of about 3,500,000. The number of foreigners residing in the open ports in 1891 was 9,067. There were 345 British commercial houses, in which 3,746 individuals were employed; 27 American, having 1,209; 31 Japanese, with 883; 24 French establishments, with 681; 82 German, with 667; 7 Portuguese, with 659; 5 Spanish, with 316; 1 belonging to Sweden and Norway, with 270; 12 Russian, with 146; 4 Italian, with 133 resident foreigners; and Austria and Denmark were represented by 5 concerns, employing 210 foreigners, while there were 36 Dutch and 111 other Europeans. About half of the foreign mercantile population is in Shanghai. The population of Peking, the imperial city, is variously estimated to contain from 500,000 to 1,650,000 inhabitants. The population of the other great cities is likewise very uncertain. The commonly accepted estimates for the largest of the treaty ports are: Canton, 1,600,000; Tientsin, 950,000; Hankow, 800,000; Foochow, 636,000; Shanghai, 400,000; Ningpo, 250,000.

**Finances.**—The accounts of the Imperial Government are not published, excepting the receipts from maritime customs. The revenue from ordinary sources for 1889 was estimated at 78,500,000 haikwan taels, the sources of which were: Land tax collected in money, 10,000,000 taels; commuted likin tax or transit duty on imported opium and other merchandise, 13,000,000 taels; maritime customs, 15,000,000 taels; salt duty, 12,000,000 taels; licenses, stamps, and registration, 15,000,000 taels; other sources, 3,500,000 taels. The income of the Government is more than this, and when a war or famine or other emergency arises the Government can multiply its receipts, especially by forced contributions from the officials who have grown rich in the provincial administrations. The Chinese Government has thus far avoided incurring a foreign debt beyond two loans, one of £627,675, contracted in 1874, and one of £1,604,276, issued in 1878, both secured on the customs revenue

and paying 8 per cent. interest. The internal debts amounted in 1882 to 30,000,000 taels.

**Navigation.**—During 1891 there were 33,992 vessels, of 27,710,788 tons, entered and cleared at the ports of China. Of these, 28,040, of 26,720,841 tons, were steam vessels. Of the total number, 17,718, of 17,438,995 tons, were British; 11,802, of 6,642,273 tons, Chinese; 2,520, of 1,911,897 tons, German; 604, of 515,236 tons, Japanese; 172, of 264,660 tons, French; and 113, of 67,095 tons, American. The heavy coasting trade is carried on in native junks and foreign-built vessels belonging to Chinese and under foreign flags. There is a large Chinese steamship company whose vessels ply between the ports of China and visit other ports of the East.

**Commerce and Production.**—The official returns for imports in 1891 make the total value 134,003,863 haikwan taels, against 127,093,481 taels in 1890, 110,884,355 taels in 1889, and 124,782,893 taels in 1888. The exports for 1891 were valued at 100,947,849 taels, against 87,144,480 taels in 1890, 96,947,832 taels in 1889, and 92,401,067 taels in 1888. The net imports are here meant, the value of re-exports having been deducted; but the values are based on the prices in the ports of China, which include the duty paid and the cost of landing and storage and the merchants' profit. When these are deducted, the value of the imports for 1891 is found to be 115,023,051 taels. The value of the exports, on the other hand, is placed too low, as the export duty, the exporter's profit or commission, and the cost of packing, storing, and shipping, should be added to obtain the true export value, which is 115,553,640 taels for 1891. For 1892 the official value of the imports was 135,101,198 taels, and of the exports 102,583,525 taels. The values in haikwan taels of some of the principal imports for 1891 and 1892 are given in the following table, the exchange value of the haikwan tael being in 1892 about \$1:

IMPORTS.	1891.	1892.
Cotton goods.....	53,290,200	52,707,432
Opium.....	28,333,156	27,418,152
Metals.....	7,254,443	7,180,866
Rice.....	6,597,259	5,826,415
Kerosene oil.....	5,267,051	5,049,553
Woolen goods.....	4,695,256	4,794,230
Fish.....	2,640,444	2,656,228
Sugar.....	1,774,111	2,447,807
Coal.....	1,703,293	2,007,685
Matches.....	1,596,591	1,423,396
Raw cotton.....	1,195,262	1,157,001
Timber.....	895,840	1,052,227
Seaweed.....	765,707	1,035,313
Bêche-de-mer.....	554,954	1,030,905
Aniline dyes.....	976,016	978,921
Ginseng.....	710,141	847,465
Flour.....	704,869	670,905
Machinery.....	900,500	593,449
Birds' nests.....	411,508	449,356
Mushrooms.....	402,865	433,014

The quantity of opium imported decreased from 77,227 to 70,929 piculs of 133½ pounds. The import of gray shirtings increased from 5,985,598 to 6,460,792 pieces, and in value from 10,206,236 to 10,992,034 taels; that of Indian cotton yarn from 1,138,084 to 1,254,490 piculs, and in value from 19,396,855 to 21,056,464 taels. Of the kerosene oil, 39,348,477 gallons, valued at 4,308,839 taels, was American, and 10,000,902 gallons, valued at 958,212 taels, Russian in 1891; and



in 1892 the American import was 31,884,013 gallons, valued at 4,081,706 taels, and the Russian 8,649,318 gallons, valued at 967,847 taels.

The values of the principal exports for 1891 and 1892, as returned by the Imperial Maritime Customs, were, in haikwan taels, as follow :

EXPORTS.	1891.	1892.
Silk :		
Raw white.....	22,109,749	23,810,567
Piece goods.....	6,262,554	6,899,906
Refuse.....	3,263,883	2,603,745
Raw yellow.....	2,405,742	2,082,252
Wild.....	1,513,670	1,479,225
Pongees.....	202,035	471,944
Cocoons.....	590,636	414,455
Other.....	552,962	579,167
Tea :		
Black.....	24,979,259	19,990,562
Green.....	3,545,911	3,486,604
Brick.....	2,323,755	2,313,179
Tablet and dust.....	174,659	193,155
Raw cotton.....	3,841,129	5,089,361
Straw braid.....	1,605,234	2,056,856
Brown sugar.....	1,997,563	1,609,192
Chinese clothing and shoes.....	1,406,485	1,592,969
Paper.....	1,570,709	1,572,524
Wool.....	1,111,704	1,545,432
Fur skins, skin clothing, and rugs.....	881,225	1,315,532
Beans.....	791,313	1,187,767
Firecrackers and fireworks.....	1,012,530	1,181,128
Chinaware and pottery.....	803,239	1,034,003
Tobacco.....	1,052,353	1,074,752
Matting.....	859,065	806,479
Fruits.....	517,653	665,793
Provisions and vegetables.....	597,640	742,515
Cassia lignea.....	405,265	559,329
Mats.....	454,563	485,574

The total export of tea in 1891 was 1,750,034 piculs, of which 636,407 piculs went to Russia, 411,284 to Great Britain, 275,696 to the United States, 178,460 to Hong-Kong, and 101,557 to Australia.

The trade with the principal countries in 1891 is shown in the following table, giving the values in haikwan taels ;

COUNTRIES.	Imports.	Exports.
Hong-Kong.....	68,155,959	37,707,661
Great Britain.....	29,628,097	13,771,337
Continent of Europe.....	4,331,413	14,390,501
United States.....	7,731,752	9,033,630
India.....	12,473,022	1,562,922
Russia in Europe and Asia.....	1,064,473	11,129,053
Japan.....	5,704,742	5,801,323

**Communications.**—The railroad from Tongku, at the mouth of the Peiho, to Tientsin, 27 miles, begun in 1888 as a result of the alarm caused by the French war of 1884, carried up to the Tungshan and Kaiping coal mines, a distance of 67 miles, for strategical and speculative commercial purposes, through the influence of Li-Hung-Chang, has since been prolonged toward the terminus of the Great Wall at Shanhaikwan, and is being pushed into Manchuria toward Kirin, as an answer to the Russian Transsiberian Railroad to Vladivostok and a warning that China will defend Manchuria against Russian aggression more strenuously than she did the provinces south of the Amur. At one time the superstitions and economic prejudices against railroads, which caused the short line from Woosung to Shanghai to be torn up in 1877, having again gained the upper hand in court and governing circles, the work was stopped, but the influence of Li-Hung-Chang finally triumphed.

The project of a branch road to the river port of Tungchow, 13 miles from Pekin, nevertheless had to be abandoned in submission to Chinese conservatism, and because some statesmen thought that a railroad to the capital would be likely to fall into the hands of a European enemy in case of war and be used to transport the invaders. The opposition to railroads in China arising from the dread that they would offend the *Feng Shui*, or spirit powers, and disturb the repose of the dead, has less practical force than the economic argument that they would throw millions of coolies, carters, and junkmen out of employment. The more intelligent of the leading statesmen, even those who are most strongly opposed to the spread of foreign influence and ideas, and favor the movement to exclude foreigners from the position they have already gained, are anxious to have a system of railroads that will enable the Government to collect forces and materials at threatened points in the event of war. Through their influence telegraphs have been extended into the remotest provinces, despite the superstitious objections of the ignorant. The Chinese system is now joined to the Russian, and messages can be sent to all parts of the world by the Chinese telegraph authorities, who made the prices by the overland telegraph to Europe 15 per cent. less than by cable. The long-expected era of railroads seemed to be at hand, and European financiers, manufacturers, and engineers rushed into a contest for contracts to float loans, furnish rails, and build the lines. The imperial sanction was retracted because cautious statesmen feared that to pledge the resources of the imperial treasury for a foreign loan and take a large additional number of foreigners into the service of the Government might give occasion for diplomatic and military interference, and that this danger to the security of the empire would more than counterbalance new and untried methods of transportation. These counsels appear to have convinced the Chinese that the network must not be undertaken until it can be built with Chinese capital and with steel rails manufactured in Chinese furnaces from Chinese iron.

**Defense.**—China has arsenals or dockyards fitted with the most modern appliances at Foochow, Nankin, Shanghai, Tientsin, Port Li, Wei-Hai-Wei, Port Arthur, and Kirin, which are capable of turning out turret ships, torpedoes, cannon of large caliber, Gatling guns, rifles, cartridges, powder, and gun-cotton. Her navy, especially the northern squadron, is a powerful force, provided the *personnel* and organization are equal to a conflict with European ships. The northern squadron consists of 4 seagoing barbette armor-clads, one of them having a displacement of 9,850 tons, 1 turret ship, 5 deck-protected cruisers, each of 2,200 tons, 4 torpedo cruisers, 23 first-class torpedo boats, 4 small torpedo boats, and 11 gunboats. In the Foochow squadron there are 9 cruisers ranging from 1,300 to 2,480 tons, besides 3 gunboats and 9 dispatch boats. The Shanghai flotilla contains 1 armor-clad frigate, 1 gunboat, and 6 floating batteries. The Canton flotilla consists of 13 gunboats. The Manchu army, or Army of the Eight Banners, which constitutes the ancient military force of the empire, numbers about 288,000 men, of

whom only 90,000 have been instructed in European tactics and armed with modern weapons, including the guard of 13,000 men at Peking. In each province of Manchuria and Mongolia is a separate body of troops, 23 independent commands altogether. Mongolia has also its native militia, numbering 117,000 men. The native militia of Tibet forms a force of 64,000 men, of whom 30,000 are constantly with the colors. The Chinese troops, or Army of the Green Flag, number 539,000 men, not including 98,000 *yung* or volunteers and 161,000 *lien-chun* or militia available in case of war. In the province of Pechili alone are 99,000 well-instructed soldiers, with 581 guns, of which 245 are of modern make. The province of Kwangsi and the island of Formosa are occupied by strong military forces trained and armed in European fashion. The troops of Eastern Turkestan and the territories of Kulja and Tarbagatai number 30,000 men, of whom 8,100 have received military training. The total numerical strength of the Chinese army is 1,038,000 men, but of these only 387,000 are supposed to be efficient enough for a campaign against disciplined troops. An English officer, Admiral Lang, was long employed in organizing the naval force, and a German military engineer, Gen. von Hanneken, in fortifying the coasts and improving the arsenals. Both have been dismissed, and Chinamen will continue their work.

**The Antiforeign Movement.**—There was in 1893 a recrudescence of the antiforeign and anti-Christian feeling that manifested itself in the outbreaks of 1891. Investigation of those occurrences proved that influential scholars, and even officials, were the prime movers, and that the scurrilous pamphlets and placards reviling the Christian religion were written by *litterati* of rank. Chu Han, the head of the propaganda in Hunan, seemed to have sympathizers in high places in Wuchong, Peking, and Tientsin, some of them mandarins even, who held official intercourse with foreigners. He was not punished or degraded in rank, only reprimanded in an ambiguous imperial proclamation which might be interpreted as covert praise. The murderers of Green and Argent were not brought to justice, and the leaders of the mob that drove the Europeans out of Ichang and sacked and destroyed their buildings were not even reprimanded. A pecuniary indemnity was paid for actual damages, and the outrages were condemned in formal proclamations. The European governments were not disposed to exact more, nor was the Chinese Government willing to yield more in the face of the truculent hostility to foreigners that pervades all classes in China at the present day. In former ages the Christian propaganda was carried on in China without hindrance, but since the treaties that closed the first China war in 1842 and the second in 1860 imposed on the Government the duty of countenancing and protecting the missionaries and their converts, and especially since the recent French war, the sight of a missionary or a native Christian is to Chinamen a reminder of national defeat and humiliation, and many of them consider Christianity a serious danger to the social system and the existence of the state, remembering the Taiping rebellion, by which over 20,000,000 of their countrymen perished, led, as it was, by a Christian

convert with the object of Christianizing China. On Dec. 2, 1892, there was an antiforeign riot at Ichang, a purely local and spontaneous outbreak, but an indication of the influence on the masses of the antipathy and distrust manifested toward Europeans in high quarters. Two weeks before, while workmen were digging the foundations for some houses that a foreigner was having built, one of them drove his spade through an old grave. An aged woman who was looking on denounced him as the desecrator of the tomb of her ancestor, and went round the town beating a gong and railing against foreigners. The authorities, at the instance of the British consul, warned her, and some days later, when she appeared again and incited a mob to throw stones at the new houses, posted a placard warning every one against interfering with foreigners. The town was full of students, and the proclamation simply spurred them on to disorder. They incited a mob to pelt a Scottish missionary named Cockburn when he appeared in the street on the following day, stopped work on the obnoxious buildings, and finally, when the foreign officials of the customhouse were receiving a new governor, they so inflamed the populace that the foreigners were mobbed and compelled to flee to the customhouse compound, into which some of the students forced their way, and were beaten after the gate was shut. The riot went no further because a party of blue-jackets was landed from the British warship "Esk." Not long after this a ferocious attack was made on the native Christians in the town of Teatsui, 70 miles northeast of Amoy. A band of ruffians, headed by *litterati*, fell upon a company gathered for worship, beat some of them to death, and subjected others to torture. The ringleader was arrested a few days later, and this so incensed the people that they made a fresh attack on the Christians residing in the city, and stoned the English missionary, the Rev. R. M. Ross, who fled to another city under the protection of an escort of soldiers furnished by the magistrate. Another antimissionary outbreak occurred at Szechuen, which was quelled by the authorities after the English ladies of the mission had been compelled to take to flight. An attempt was made to destroy the Italian convent at Hankow, which ended in failure. On July 1 two Swedish missionaries, named Wikholm and Johansen, were murdered at Sungpu, in the province of Hupeh, 56 miles from Hankow. They had come there in April to establish the first Christian mission in that fanatical town, and instead of making converts they went about in constant fear for their lives. They knew from their Chinese servants the day set for their murder, and asked the mandarins for protection, but got none. The Taotai at Hankow had learned of the plot, and warned the Swedish consul to call the missionaries away, but the latter said that the Chinese authorities were obliged by the terms of the treaty to protect missionaries. On the day named a mob surrounded the house of the missionaries and drove them out and over the roofs with stones, until they fell into the street and were beaten to death, a petty magistrate and a small military guard having feebly attempted to avert the tragedy. In the same month the Italian mission at Mienyang, 90 miles southwest



of Hankow, was destroyed in a riot; and a few weeks later the French Catholic mission at Lichuen, in the same province, was attacked, and the priests barely escaped with their lives.

**The Audience Question.**—In no capital in the world are the relations between the representatives of foreign powers and the government of the country similar to or as unsatisfactory as they are in Peking. The Chinese, in pursuance of their policy of seclusion, have arranged to shut out the members of the diplomatic corps from any direct communication with the Government itself. For the nominal purpose of discussion, but more frequently for the purpose of avoidance and delay, foreign questions must be presented to the Tsungli-Yamen, which is a numerous commission composed of officials whose real authority and experience are confined to other departments of the Government, and which does not pretend to decide the questions that are submitted to it. The functionaries who are responsible for the decision the ministers of the Western powers have no means of finding out. They are treated as unwelcome intruders, emissaries of the enemy, who obtained for them the footing that they have by superior force. No official of standing will associate with a European, and except for purely ceremonious visits the foreign diplomats never see the inside of a Chinese minister's house. At the end of the eighteenth century the British minister, Lord Macartney, was received by the Emperor. No audience was again granted till in June, 1873, the Tungche Emperor received the entire diplomatic corps. It was discovered later that Tse-Kung-Ko, where the audience was given, was the hall of tributary nations. The diplomatic corps pressed for a proper reception, but declined to be received again on such a mean footing, until in March, 1891, after they had secured the right to an annual audience, recorded in the imperial decree of 1890, they consented to have the observance take place in the same building—only for one time, they stipulated. Since the Chinese mind is impervious to the idea of the equality of nations, the diplomats have been inclined to recede from this position and accept the advantages of an annual repetition of the function, with the exception of the French and Russian representatives, who hold firmly to their declaration. In October, 1891, the Austrian minister presented his credentials to the Emperor in the Cheng-Kuan palace. In December, 1892, the newly appointed British minister, Nicholas Roderrick O'Connor, was received in the same palace and with somewhat more distinction.

**Famine and Flood.**—A severe drought, which lasted six months, reduced the population of the northern part of Shansi and a section of Mongolia to poverty and distress in the early months of 1893. The people of the famine-stricken region wandered southward in the hope of obtaining succor, and numbers perished of cold and hunger. Traders who met them bartered food for all their possessions, and even their children—a camel load of wheat for a girl of marriageable age.

In March the Hoang-Ho overflowed its banks, and flooded about 400 villages. In July and August more disastrous floods occurred in the valley of the Yangtse-Kiang and in the country drained by the Peiho and the Grand Canal. The

plain between Peking and Tientsin was converted into a lake, and countless people were swept away by the rushing waters. The loss of life would have been much greater but for the indefatigable labors of the Viceroy Li-Hung-Chang, and the great number of boats which he and the Taotai of Tientsin and the customhouse authorities were able to send out. At Kinchow, a city on the Yangtse below Ichang, the embankments of one of the tributaries of the great river gave way, and the escaping waters demolished hundreds of houses, and swept over the plains, carrying away whole villages and their inhabitants.

### CHRISTIAN ENDEAVOR SOCIETIES.

Including nearly a thousand societies in foreign lands, the secretary of the United Society of Christian Endeavor reports the whole number of local societies for 1893 as 26,284, with a membership of 1,577,040. Outside of the United States, there are in Canada 1,882 societies; in England, more than 600; in Australia, more than 525; in India, 71; in Turkey, 41; in New Zealand, 39; in Japan, 34; in Madagascar, 32; in Scotland, 30; in Mexico, 22; in the West Indies, 19; in Africa, 15; in China, 14; in Ireland, 10; in France, 9; in Samoa, 9; in the Sandwich Islands, 6; in Bermuda, 3; in Brazil, 2; in Persia, 2; and in Chili, Columbia, Norway, and Spain, 1 each. The net gain in the number of societies for 1893 was 5,276, against 4,806 in 1892. The model constitution has been translated, and is printed in the English, German, Swedish, Norwegian, French, Danish, Dutch, Spanish, Chinese, Japanese, Tamil, Telugu, Hindi, Hindustanee, Bengalee, Marathi, Arabic, Turkish, Bulgarian, Armenian, and modern Greek languages. The greatest proportionate increase in the number of societies in the United States in the past year was in New Mexico; the greatest absolute increase was in Pennsylvania. Besides the regular societies mentioned above, 4,136 junior societies are enrolled. Thirty evangelical denominations are represented in the fellowship of the societies, among which the Presbyterians lead in the number of societies, and are followed, in order, by the Congregationalists, Baptists, Disciples of Christ and Christians, Methodist Episcopal Church, Methodist Church in Canada, Presbyterian Church in Canada, Methodist Protestant Church, etc. Among the noteworthy events of the year's history of the society are mentioned the journey of President Clark around the world; the marked favor gained in all evangelical denominations save one; the emphasis given to systematic benevolence; the energetic support given to missionary and evangelistic work; the formation of senior societies of Christian Endeavor; the organization of floating societies of Christian Endeavor among the life-saving stations on the seacoast, of which there were 21; the formation and growth of the Traveler's Union of Christian Endeavor; the society among the policemen; the societies in the army and navy and among inmates of prisons and houses of correction; work for temperance; and open hostility to every plan for destroying in any way the sanctity of the Sabbath day. The publication work of the society, which is self-supporting, and the circulation of local Christian Endeavor papers and of the general denominational papers are

also mentioned. Local unions, in which the several church societies in a single city are represented in a joint organization, have been formed in several cities.

The twelfth International Convention of the Christian Endeavor Societies met in Montreal, Canada, July 5. Seventeen thousand delegates were in attendance. The meetings were held in two sections. The first leading subject discussed was "The Junior Christian Endeavor Society: Its Past, its Present, its Future," on which the Rev. J. W. Cowan, who founded the first junior society, spoke, describing the beginning of this movement. Other addresses were on "The Possibilities of the Junior Society," by the Rev. Dr. Wayland Hoyt; "Junior Methods of Work," by the Rev. H. N. Kinney; "Junior Christian Endeavor in Foreign Lands," by Mrs. Francis E. Clark. Other subjects discussed by speakers or in "parliaments" were "Soul-Winning"; "What Evangelistic Work is your Society doing?" The particular features of the Christian Endeavor Society—the pledge, the consecration meeting, and fellowship; "The Christian Endeavor Society the Typical Church Institution"; "Our Relationship to the Sunday School"; "Missions," under several subheadings; "Temperance"; "The Religious Press"; "Social Purity"; "Foes to Society"; "The Sanctification of Common Life"; "Every Man's Vocation a Call of God"; "Spiritual Power." The conception of a "Senior Endeavor Society" was explained by the Rev. C. P. Mills. President Francis E. Clark, the originator of the societies, who had been around the world visiting the organizations in all countries, addressed the convention on the subject of "Larger Things for the Year to come," and urged the three objects of the cultivation of a larger and more intelligent spirit of patriotism and good citizenship; a more practical exemplification of the missionary spirit; and an enlargement of interdenominational, international fellowship. Resolutions were adopted reaffirming the principles of personal devotion to Christ, the covenant obligation embodied in the prayer-meeting pledge, constant religious training for all kinds of service, loyalty to the local Church, interdenominational spiritual fellowship, and the free action of the individual conscience; recommending wherever feasible the holding of meetings at the life-saving stations and lighthouses and work among the police forces, charitable and reformatory institutions, commercial travelers, and men employed on railroads; inviting all societies that are on the basis of the prayer-meeting pledge and the consecration meeting to join the Christian Endeavor brotherhood by uniting with their own denominational title the interdenominational title; and condemning the opening of the gates of the Columbian Fair to the public at Chicago on Sunday.

**CITIES, AMERICAN, RECENT GROWTH OF.** This subject has been treated in every volume of the "Annual Cyclopædia since 1886, the total number of cities described in the six volumes preceding the present one being 397. In this volume the number is increased to 424.

**Alameda**, a city of Alameda County, Cal., on the east side of San Francisco Bay, 7 miles from San Francisco. It is south of Oakland, being

separated therefrom by San Antonio creek, and 3 bridges span that wide but shallow estuary. Its site is a peninsula 4 miles long and 1 mile wide, and on the outlying Bay Farm island. The peninsula (formerly styled Encinal de San Antonio) rises but a few feet above the sea level. On the bay shore there is a good sandy beach, and Alameda is a popular bathing resort; but on the creek shore there are salt marshes, and a rip-rap wall is greatly needed to keep out the sea. The population in 1870 was 1,557; in 1880, 5,000; in 1890, 11,000; in 1893, 14,000. The city owns its own electric plant, has an effective fire department, a free library, a good water supply from the artesian wells at Fitchburg and High Street, and a sewer system considered the best in California. Alameda has good public schools and a high school, the school property amounting to \$130,000. The traveling facilities are exceptionally good, the Southern Pacific having possession of two railway lines, which run alternately every fifteen minutes to Oakland and connect by ferries with San Francisco. An electric line passing through the middle of Alameda to Broadway, Oakland, is now being extended to Oakland's business center. There are 14 churches, 4 daily newspapers, 1 weekly, 2 banks, and several manufactories, as the Pacific Coast Oil Works, Pacific Coast Borax Company, which uses the crude borax mined near Death valley in San Bernardino County, the Clark Pottery, and planing mills. The Occidental Smelting and Refining Company, have also secured a 25-acre tract for a smelting plant, which it is estimated will cost \$1,000,000. The city has 50 miles of sewers, macadamized streets, and artificial stone sidewalks. About 75 per cent. of the inhabitants own their own homes, which are largely built of wood, brick and stone being unpopular in California on account of earthquakes. The oldest maps of the town (1854) show that it was originally located in the vicinity of High Street, and that the entire Encinal was owned by William W. Chipman and Gideon Aughinbaugh. Some years ago an appropriation was made by Congress for the improvement of Oakland Harbor, which included the building of a tidal canal through the isthmus that connects Alameda with East Oakland. A bill is now (1893) pending in Congress for an additional appropriation to finish the tidal canal and to dredge Oakland harbor. The climate of Alameda is equable, the thermometer ranging from 40° to 70° above zero. Almond, pepper, orange, and magnolia trees bloom out of doors, as well as the fruit trees of the temperate zone. Hon. J. A. Waymire's experiments in raising trees of various climes on his Oak Shade Tract have attracted much attention, but the raising of eucalyptus trees has been wholly abandoned on the Encinal and in many parts of California.

**Alexandria**, a city and port of entry of Virginia, county seat of Alexandria County, on the right bank of the Potomac, 7 miles below Washington. It is bounded on the west and south by Fairfax County, and by the last Federal census has a population of 14,339. In 1870 it had 13,570, and in 1880, 13,658. In 1669 a patent was obtained for the land on which the city now stands, and the first settlement, known as Bellehaven, was made in 1695. In 1749 William



Ramsey, John Carlyle, and others founded Alexandria, with jurisdiction over 66 acre lots, 9 streets, a market space, and 2 public landings, Lord Fairfax and Lawrence Washington being among the trustees. Public warehouses and wharves were built out of the proceeds of lotteries. In 1780 the articles of incorporation granted in the year previous took effect, with 12 councilmen, who elected the mayor and other officers from their number. In 1796 the town was made into four wards and policed. About the close of the century it was ceded to the Federal Government as part of the District of Columbia, and in 1804 it received a charter from Congress. In 1846 it was ceded back to the State of Virginia. During the period between 1791 and 1821 the city paid into the Treasury nearly \$4,000,000 in customs duties, and about \$173,000 on post-office account. The river, a mile wide at this point, affords an excellent harbor for the largest vessels. A report of the Board of Trade, published two years ago, shows the annual volume of business to be \$3,955,000; the tonnage by water in coastwise and foreign vessels, 60,000 tons; by river, 18,000 tons; and by rail, 90,000 tons. In 1891 the total tonnage of the port was 101 vessels, the value of the imports entered being \$17,332. Transportation facilities are afforded by the Pennsylvania, the Chesapeake and Ohio, the Washington and Ohio, and the Virginia Midland Railroads; there is a steam ferry line between the city and Washington, with boats running hourly, and there is daily communication by steamer with Norfolk, as well as triweekly with Baltimore. A considerable tonnage of coal from mines around Cumberland, Md., is received by means of the Chesapeake and Ohio Canal, which before the civil war was one of the large feeders of the city. An electric railway, which passes through the main streets of the city, has been constructed to Mount Vernon. A charter for a street railway has been obtained, and surveys made. Gas and electric lighting are in use. Water of great purity is supplied from two large reservoirs, on an eminence a mile west of the city, one of which, ten times larger than the other, is kept as a reserve in case of drought. The volunteer fire department consists of 3 steam fire engines, 1 hand engine, and a hook and ladder company. The streets are paved. The city has increased at the rate of about 100 houses a year since the free mail delivery was established, and about \$160,000 are expended in building improvements each year. Many of the old buildings possess historic interest, such as the Carlyle House, occupied by Braddock in 1755, which was often visited by Washington; the house where Lafayette was entertained in 1824; Christ Church, where Washington worshiped, and his pew is still shown; the Braddock House, with its colonial furniture and high ceilings; and the old City Hotel, where Washington's headquarters were once established. Polick Church, the parish church of Mount Vernon, six miles from the mansion, was built in 1768-'70 from plans drawn by Washington, who was a vestryman of the parish for twenty years. There is 1 Catholic church in Alexandria, 1 Baptist, 1 Lutheran, 3 Episcopal, 2 Presbyterian, 4 Methodist, 1 Methodist Protestant, 1 Jewish synagogue, and

a dozen buildings used by colored people as places of worship. There are 2 brick and 2 frame public-school buildings. The public schools employ 32 teachers; the attendance in 1893 was 1,162 whites and 677 colored. The first public school was erected in Alexandria in 1785, and was endowed by Washington with £1,000. The present system of public instruction was organized in 1871. In addition there are 2 parochial schools, a military, a Catholic, and one other academy; also 3 female institutes. A mile from the city are the buildings of the Episcopal Theological Seminary and High School, which commands a fine view of Washington. Two national banks have an aggregate capital of \$200,000; there are 14 building and loan associations, and 3 local insurance companies. One weekly, 1 triweekly, and 2 daily newspapers are published, the "Gazette" being one of the oldest in the country. A new opera house has been completed recently, and there are 7 halls and a large public library. There are in all 231 firms and companies engaged in manufacturing, and the capital so employed is \$1,104,480. In 1892 goods were manufactured to the amount of 2,500,000, and the monthly payroll is \$70,000. One of the largest establishments is a brewery, capitalized at \$300,000, the plant of which covers two squares, and which manufactures its own ice. Against 26,000 barrels of beer which it turned out in 1883 it showed 60,000 barrels in 1890, and its capacity has been increased to 100,000 barrels. There is also a tannery, which with its branch at Sperryville tans 30,000 hides yearly, consumes 6,000 cords of oak bark, and disburses \$3,000 monthly in wages. The shops of the Virginia Midland Railroad are here, and the company expends nearly \$500,000 yearly. Other establishments include 3 brick works, with a capacity of 20,000,000 bricks yearly, 3 fertilizer factories, a steam cracker and candy factory, 1 shipyard, with 2 marine railways, representing a capital of \$100,000; 3 iron foundries and a vulcanizing company, 2 machine shops and 1 boiler works, 4 lumber mills, and 14 cigar factories. In 1891 the lumber trade amounted to 12,000,000 feet. There is a national cemetery here, and the United States Government has constructed a fine macadamized roadway and brick pavement thereto. There is a United States Post-Office and Customhouse building and a Young Men's Sodality Lyceum (Roman Catholic).

**Baton Rouge**, a city of Louisiana, capital of the State and of East Baton Rouge Parish, on the eastern bank of the Mississippi, 120 miles north of New Orleans. By rail it is 89 miles from the same city. The situation is picturesque, on a bluff about 25 feet above high-water mark, and commands an extended view of the wide-spreading lowlands of cotton and sugar-cane plantations. Much of the primeval forest remains intact, contiguous to the city on the north and east. As early as 1838 the city was the seat of a college, and from 1847 to 1864 it was the capital of the State. In the latter year the capital was removed to New Orleans, but it was restored in 1880. It is the third city in size in the State. In 1880 the population was 7,197, and it increased to 10,478 in 1890. Its principal growth has been within the past decade, when it was

connected with the world by the two trunk lines of railroad, the Louisville, New Orleans and Texas and the Texas and Pacific. It has 2 banks, an insurance company, a board of trade, systems of street railway, electric lighting, and water works, 1 daily and 3 weekly newspapers, churches of all denominations, a good public-school system, and private institutions for the higher education of women. The State University and Agricultural and Mechanical College is here, as are also the institution for the education of the deaf and dumb and blind (established in 1852), and the State Prison. There is a national arsenal and barracks, and a military hospital. The Statehouse is a handsome building. The industries of the city include a cotton-seed-oil mill, a brickyard, an artificial ice and cold-storage company, with a building and plant that cost \$100,000 and has a daily capacity of 60 tons of ice, a small broom factory, a sash, door, and blind factory, several cotton and moss ginneries, and a lumber company operating a sawmill within the city limits which cuts 40,000 feet of lumber a day and manufactures shingles by the million. Thousands of cords of ash are shipped annually to New Orleans for firewood, and white oak is cut into pipe staves and shipped to Europe. Ten miles from the city a large sawmill has been erected for the sole purpose of squaring out logs of oak, gum, and hickory for shipment in the log to England. Cypress is abundant and cheap. The rich alluvial lands south and west of the city produce from 2,000 to 4,000 pounds of dry sugar to the acre; 60 bushels of rice, and 50 barrels of corn are not an unusual yield. Vegetables and fruit are also raised in abundance. The forests are full of the *magnolia grandiflora* and yellow jasmine, and the flowers bloom all winter in the city gardens.

**Bayfield**, a city of Wisconsin, county seat of Bayfield County, on Lake Superior, 18 miles north of Ashland, and about 66 miles east of Duluth. Its harbor, directly under the lee of the Apostle Islands, possesses great natural advantages, and has been reported by United States engineers as requiring no improvements. As it lies on the route between the shore ports, the steamers touch regularly at the wharf. The city has an altitude of 616 feet. The population in 1880 was 495; in 1890, 1,373. It is reached by the Chicago, St. Paul, Minneapolis and Omaha Railroad, and is a health resort, particularly in cases of hay fever. Its three leading industries are lumber, brownstone, and fish. A logging railroad has been built into the forests adjacent, and a towing company is one of the growing institutions. During the season of 1892 it towed 41,000,000 feet of logs. One lumber company has constructed a wharf of its own, and in the season of 1892, from May 1 to Nov. 19, it turned out 18,000,000 feet of merchantable lumber. A box factory is in operation. From Bayfield was shipped to the World's Fair at Chicago the great brownstone monolith, 107 feet high, which will remain as a permanent attraction on the grounds, as well as the 4 obelisks forming part of the State exhibit. The output from one brownstone quarry on Bass Island, 3 miles from the city, was 300,000 cubic feet in 1892. About 200 persons are employed in fishing among the Apostle Islands, for which about 25 sailing vessels are re-

quired. One fish-packing company owns 3 steam tugs and an entire block of the lake front, with 2,000 feet of wharf room. About \$160,000 were expended in building improvements in Bayfield in 1892. There are 2 banks, 1 national; a high school, a public-school system into which the kindergarten has been introduced, and a Catholic parochial school; Presbyterian, Methodist, Catholic, Episcopalian, Swedish Lutheran, and Scandinavian Congregational churches; a Catholic orphanage, and a three-story brick building for the use of resident and traveling priests and brothers of the Franciscan order. Water and electric lighting are supplied by private companies, and there is a hose company. The county newspaper is issued weekly. The Masons and Odd Fellows have halls, and there is a Grand Army post.

**Cairo**, a city of Illinois, county seat of Alexander County, known as the Delta City, at the confluence of the Ohio and Mississippi rivers, at the southern extremity of the State, 175 miles below St. Louis. It had a population of 10,324 by the last Federal census, and now claims 14,000. In 1880 it had 9,011. The importance of the site of the city was realized as early as 1818, when a company was formed to improve it, which was short-lived. In 1838, when a charter was given to the Illinois Central Railroad, the Cairo City and Canal Company was organized, largely with English capital, and large mills, an immense foundry, and iron works were erected, and a population of 2,500 was attained. The finest marine ways and floating docks on the river were also built, which afterward were taken to Algiers, La., and during the early part of the civil war did a great deal of work for the Confederacy. Three years later, on the suspension of building operations on the Illinois Central, the town declined, and was almost abandoned, having a population of but 250, living in flat-boats along the levees. A trust company, which is still in existence, was subsequently formed for the development of the place, and in 1855 the first train of cars entered the city. In addition to the levees, an embankment 80 feet wide and 10 feet high was begun in 1857, but in 1858 the town was nearly destroyed by a flood. The levees are now more than 7 miles in extent, and tower 55 feet above low-water mark. Inside the streets have been filled to a height approximating the levees. They are paved with a material known as Elm concrete (a species of broken stone mingled with iron ore), found in Alexander County, which is practically indestructible, as it becomes harder and more compact with use. The 7 miles of river front has always a depth of 30 feet of water, and the city has a larger number of arrivals and departures of vessels every year than any other inland port in the United States, as low water and ice never interfere with navigation of the Mississippi below this point. In May, 1892, the United States war ship "Concord" arrived in the harbor, by order of the Secretary of the Navy, and for four days lay at anchor in 10 fathoms of water. The Illinois Central Railroad bridge across the Ohio river, with the approaches, is 4 miles in length, and cost \$4,000,000. Its 13 piers of limestone, 53 feet high, rest upon caissons of timber sunk 70 to 80 feet below the bed of the river and filled with concrete. The Mobile and Ohio Railroad crosses the same river by a trans-



fer-boat system. The same system is employed by roads crossing the Mississippi. In addition to the 2 railroads named, the city has 4 trunk lines—the Missouri-Pacific, the Iron Mountain, the St. Louis and Southwestern, and the “Big Four.” In addition to the St. Louis and New Orleans and the Ohio river packets, the city has a local business served by local packets. These ply between Cairo and Paducah and Gayoso. The annual shipments by rail and river from the city aggregate nearly \$80,000,000, divided as follows: \$6,500,000 by river south; \$4,500,000 by river north; \$30,000,000 by rail south, and more than \$37,000,000 by rail north. There are 4 banks—2 national and 2 savings; 3 building and loan associations; a Federal customhouse and post-office, which cost \$271,260; a county courthouse; an opera house, which cost \$50,000; a United States Marine Hospital; an infirmary, under the care of the Catholics; a private sanitarium; a public library, the gift to the city of Mrs. Anna E. Saffone, valued at \$50,000; several hotels; 8 public-school buildings; churches of various denominations; and 2 lines of street cars—1 electric, each operating 5 miles of track; both reach St. Mary’s Park and the grounds of the Three States Fair and Racing Association. Gas and electricity are employed in lighting. The water works, erected at a cost of \$100,000, have 20 miles of mains and a capacity of 2,000,000 gallons daily. There is a volunteer fire department and a thorough sewerage system. Three daily and 5 weekly newspapers are published. There is an active board of trade. The city is the great distributing point for the product of the immense hardwood forests of Missouri, Arkansas, and Mississippi—in fact, of all the vast country through which the Ohio and Tennessee rivers flow, and also that which is reached by the great lines of railroad centering here. Hardwood lumber is turned out by the sawmills, which in a radius of 40 miles from the city number 860. Twenty-five firms and corporations handle the lumber business in and about the city, and among the factories is to be noted that of the Singer Sewing Machine Company, employing 170 men and boys, and making the tables of all the sewing machines turned out by the factory at South Bend, Ind., and a portion of those for the factory at Glasgow, Scotland. The establishment has a capacity of 1,500 tables daily. Another firm, turning out the various kinds of wagon and agricultural-implement stock, consumes its own sawdust and shavings by a system of automatic collectors and boiler feed. This department consumes 15,000 feet of oak and about 25,000 feet of gum, cypress, and poplar daily; and in another building curtain poles are fashioned at the rate of 9,000 a day, equipped with rings made also in the establishment. A large company, capitalized at \$200,000, manufactures, in addition to all classes of building and furnishing material, egg cases, and fruit and vegetable packing boxes. Another, with a capacity of 1,000,000 feet of lumber a month, ships sycamore and poplar logs to Chicago to a packing-box factory; and there are also various concerns manufacturing barrels, staves and heads, and hoops. In all, there are more than 30 manufacturing establishments, employing over 1,000 men. The city is the natural gate-

way between the grain fields of the Northwest and the consuming markets of the South and Southwest, and in 1891 20,000,000 bushels of grain were shipped from the elevator of the Illinois Central Railroad to New Orleans, for export to Europe and South America. For 100 miles in either direction the country is one vast cornfield. The traffic of the lower Mississippi is greatly augmented by the output of the Ohio river at this point, the single item of coal affording employment to a large fleet of towing steamers and barges. In 1890, 13,500,000 bushels were delivered at New Orleans alone. The altitude of the city varies from 270 to 377 feet above sea level. Contrary to the reputation given the city by Dickens, it has been pronounced by the United States Surgeon-General “quite as healthful as any other place in the Union.” Nearly 7,000 acres, known as the Drainage District, are under development by the trustees of the city, whose predecessors lifted the load of debt of the original City and Canal Company in 1846, and led to the resuscitation of the place. The levees inclosing this district are 15½ miles long, and in their construction 1,684,558 cubic yards of earth were used. The cost of the work done was \$320,000. Eight large sewers have been put in, 4 of which are 40 inches in diameter, and lead to the rivers, with automatic gates at the river end that close immediately if the river rises. A portion of the district is under cultivation, and schools and mills have been established.

**Cañon City**, a city of Colorado, county seat of Fremont County, 40 miles west of Pueblo and 161 miles southwest of Denver, on Arkansas river, a mile below the Royal Gorge. It lies near the eastern base of the Rocky mountains, in a natural park protected by mountains and foothills on three sides, and has an altitude of 5,329 feet above sea level. About 2,000 acres of the open park immediately northeast of the city will be irrigated by the State canal now under construction by convict labor, 85 miles in length, from the Grand Cañon of the Arkansas to the Fontaine Qui Bouille. There are already 100 miles of irrigating ditches in the county, and in addition to the crops of cereals and grasses there are large orchards and nurseries near the city which in 1892 shipped 172,840 pounds of grapes and 151,800 of strawberries, as well as pears, peaches, and apples. Cañon City is the natural point of supply for the coal and mining camps of the county, which is second to Las Animas County only in production of coal, the output in 1892 being 497,322 tons. It contains gold, silver, lead, iron, copper, and zinc, as well as 106 oil wells, the refineries of which product are at Florence, 8 miles from the county seat. Cañon City has a population, by the census of 1890, of 2,825, having increased more than 88 per cent. in the decade from 1880. It is on the main line of Denver and Rio Grande Railroad, and is the terminus of the Pueblo branch of the Atchison, Topeka and Santa Fé. In addition to carrying passengers, a daily mail and express service is also had by a stage line to Cripple Creek, a large and prosperous gold camp. The streets, which are broad and level, are shaded with mature trees, with a stream of pure mountain water on either side. They are graded, and have substantial sidewalks. The business houses and resi-

dences are of brick and stone. The water supply is drawn from Arkansas river, and is filtered and purified before being sent through the mains. The water works are the property of the city. The pressure is sufficient for fire protection. Electric lighting is in use, and there is telephone communication with the neighboring towns and mining camps. The public-school building is of stone. A Catholic academy is completing a new structure. The churches are respectively Methodist Episcopal, Presbyterian, Baptist, Cumberland Presbyterian, Episcopal, Christian, and Catholic. The Young Men's Christian Association numbers 134. The city government consists of a mayor and 6 trustees. The county bank is at Cañon City, and there is also a building and loan association. Two weekly newspapers are published, and there are 3 hotels. The industries of the city include a zinc-lead smelter for complex ores, employing from 50 to 100 men; tile and brick works, the plant of which cost \$30,000; machine shops and boiler works; flouring mills with a capacity of 100 barrels, representing a capital of \$60,000; a cigar factory, and bottling works. The State Penitentiary is here, the massive stone walls of which inclose about 7 acres. At the hot soda springs, at the entrance of the Grand Cañon of the Arkansas, on the south side of the river, there is a hotel with bath houses. The water as it flows from the spring is at 102° Fahrenheit. There are cold soda springs also. Fine lime is manufactured from the magnesian limestone with which the county abounds, as it does in many species of clay and kaolin, building stone, gypsum, alabaster, mica, and mineral paint.

**SOUTH CAÑON**, with a population by the last census of 801, was incorporated in 1890. It is a purely agricultural town, and has a complete system of irrigation, raising large quantities of fruit. In the public school 210 pupils are enrolled. Water is supplied from the pumping station of the zinc-lead smelter at Cañon City.

**Carbondale**, a city of Pennsylvania, in Lackawanna County, in the northeastern part of the State, on Lackawanna river, near the north end of the Lackawanna valley, 16 miles from Scranton, the county seat, and 15 from Honesdale. It has an altitude of 1,079 feet. The population in 1880 was 7,714, and it increased to 10,833 in 1890. The first log house was built in Carbondale in 1824, and in 1829 the Delaware and Hudson gravity railroad was completed, over which the "Stourbridge Lion," the first engine in America, was successfully run the same year. Railroad facilities are now afforded by the same road (which crosses the Moosic mountains, 850 feet above the valley, by means of inclined planes), the Delaware and Hudson, the New York, Lake Erie and Western, and the New York, Ontario and Western, there being 64 passenger trains a day. Carbondale received its name from Washington Irving; it was incorporated in 1851, and a wooden courthouse was erected which cost \$3,000. The Delaware and Hudson Canal Company, which operates most of the great coal mines here, has a capital of \$5,000,000 invested. Unlike most coal districts, the central portion of the city is not undermined, and deeds for property in the business portion are made without the coal-reserve clause.

An electric railway connects with the suburban towns of Simpson on the north, and Jermy, Mayfield, and Archbald on the south. Gas and electric lighting are in use; the city has a complete sewerage system, and many of the streets are paved with vitrified brick. Two water companies are capitalized at \$90,000. There are 2 banks, 1 national. One daily and 1 weekly newspaper are published. The new public hospital cost \$20,000, and there is a new city hall under construction, to cost \$50,000. The various religious denominations are represented, and a new Methodist church building will cost \$40,000. A Catholic convent is also here. The new high school cost, with the ground, \$41,500, and one of the larger public-school buildings cost \$21,000. The opera house has a seating capacity of 1,100. A large coal and iron company has \$2,000,000 invested here, and 2 coal companies are capitalized at \$500,000 and \$300,000. One large company has machine shops and oil works for the manufacture of appliances connected with the refining of petroleum and extracting paraffine wax from the oil, in addition to various specialties which it turns out. Another large industry is a foundry with machine shops, valued at \$250,000. The city is the headquarters of a large lumber interest.

At **MAYFIELD** are the Erie, Glenwood, and Keystone collieries, the first of which has a Thompson-Houston electric haulage plant, the only one of its kind in this part of the anthracite region; the last two employ together 750 men.

At **JERMYN**, which is a small borough, with a population of 2,700 by the census of 1890, and has water works, electric lighting, and excellent railroad facilities, one coal shaft employs 450 men and boys. Several factories are at Jermy, and a handsome Catholic church has recently been erected.

**Carlisle**, a borough of Pennsylvania, county seat of Cumberland County, 19 miles west of Harrisburg and 125 miles from Philadelphia, in the center of the Cumberland valley. It is picturesquely situated on a rising ground, with wide, well-made streets, lighted by gas and electricity. It is on the main line of the Cumberland Valley Railroad, over which there are 14 passenger trains daily, and also on the Philadelphia and Reading Railroad, which has 12 trains a day. The population in 1880 was 6,209, and in 1890 it had increased to 7,620. The first settlement of Carlisle took place in 1751. There is a free mail delivery; the usual telegraph and telephone facilities are afforded, and there are 2 express companies. Two daily and 3 weekly newspapers are published. In addition to 3 banks there are 3 building and loan associations. A good system of water works supplies pure water, and for fire protection there are 3 steam engines and hose carriages, as well as a hook and ladder company. The churches number 15, and the Young Men's Christian Association owns its own building. There are 2 high schools and 23 public schools. Dickinson College, one of the oldest in the country, is here; it was founded in 1783, and was originally a Presbyterian institution. In 1816 it was suspended, but in 1822 was revived, and in 1833 was transferred to the Methodists, to whom it still be-



longs. It employs 13 professors and instructors, and has 300 students. Its library contains 30,000 volumes. There is also an endowed school for young ladies. The United States training school for Indians, which occupies the barracks built in 1777 principally by the Hessians captured at Trenton, capable of containing 2,000 men, has now 800 pupils. There is a fine market house and market, as the borough lies in a rich agricultural country. The manufactures, which employ 1,200 persons, with a monthly pay roll of \$40,000, embrace extensive car shops, steam-engine works, chain, axle, frog, and switch works, 3 shoe and 2 carpet factories, a silk mill, 1 paper-box and 1 clothing factory, carriage, novelty and electro-plating works, and smaller industries. The town is growing, nearly 100 new houses having been under construction in the spring of 1893.

**Columbia**, a borough of Pennsylvania, in Lancaster County, on the eastern bank of Susquehanna river, in the southeastern part of the State, 80 miles from Philadelphia, 24 from Harrisburg, and 12 from Lancaster, the county seat. In 1880 it had a population of 8,312, which increased to 10,599 in 1890. The borough was laid out in 1788, and incorporated in 1814. There are 25 passenger trains daily over the Pennsylvania and the Philadelphia and Reading Railroads. Over a million and a half cars moved here during 1892. It is the terminus also of the Pennsylvania and Tide-water Canals. The Susquehanna, here a mile wide, is spanned by a covered railroad bridge connecting Columbia with Wrightsville, and there is also a steam ferry. A railroad 44 miles long connects with Port Deposit, Md. There are over 14 miles of macadamized streets, and nearly 29 miles of paved sidewalks, in Columbia. Gas and electric lighting are in use; water is supplied from the river in abundance, and there is an efficient fire department, with 3 steam engines and a hook and ladder company. One private and 3 national banks have a capital and surplus of over \$1,000,000. The tax rate is 4 mills, and the valuation low. There are 7 building associations, 2 express companies, and the usual telegraph and telephone facilities. A free postal delivery system is in operation. Two daily and 4 weekly newspapers are published. There are 16 churches and 5 public school buildings, in addition to 2 parochial schools and 2 private academies; a public library, 3 markets, an opera house that cost \$80,000, 2 public halls, a public park and a driving park, and 2 lines of electric railway. The surrounding scenery is fine. As Columbia is only 60 miles from the anthracite coal fields, there are extensive coal wharves along the line of the Pennsylvania Railroad. Over \$400,000 are disbursed annually to employees of this road and of the Philadelphia and Reading, the two giving employment to 700 men. Over \$1,500,000 are paid yearly in wages by the manufacturing establishments, which include 4 rolling mills employing 1,000 hands, stove works, a gray-iron casting company, a factory of laundry machinery, a lace mill employing 300 persons and turning out 4 tons of lace curtains weekly; a flour mill with capacity of 200 barrels daily, a silk mill employing 500 persons, a shirt factory, a steam engine and boiler shop, planing mills, 3

tobacco warehouses and 7 cigar factories, a wagon company, and a steam cracker bakery, as well as several smaller industries, among which are a steam tannery, a flint mill, 4 machine shops and foundries, 3 large stone crushers, a shoe, a fagot, a basket, and a slate-mantel factory, a steam ice plant, with capacity of 30 tons daily, 2 steam brick works, a brewery, and a factory of pocket-books. Sites and water for manufacturing are offered free.

**Danville**, a city of Illinois, the county seat of Vermilion County, 4 miles west of the boundary of the State, on Vermilion river, at the confluence of its north fork, 124 miles south of Chicago, 85 from Indianapolis, and 54 from Terre Haute. Stony Creek cuts through the eastern part of the city, which for the main part is built upon a plateau 90 feet above the river and 523 above sea level. The population increased from 7,733 in 1880 to 11,491 in 1890. In 1870 it was 4,751. One hundred and twenty-two trains arrive and depart every twenty-four hours over the main line of the Wabash Railroad, the Chicago and Eastern Illinois, the Peoria division of the "Big Four," and the Chicago, Vincennes and Cairo. The fine natural drainage is supplemented by sewerage of the Waring system, and the city is lighted by gas and electricity. The business streets and many in the residence portion are paved with vitrified brick, as is the public square. Maple and other shade trees add to the beauty of the residence streets, and there are 8 miles of Thompson-Houston electric street railway, representing an expenditure of \$150,000. The water company, which has 17 miles of mains, draws its supply from the North Fork of Vermilion river, and has also constructed a lake reservoir with a capacity of 7,000,000 gallons, fed by natural springs, into which water can be pumped also from the river for storage. Two horizontal duplex pumping engines have a combined capacity of 4,000,000 gallons in twenty-four hours, and the standpipe is 200 feet high. The paid fire department has a Gaynor system of alarm. There are 4 banks—3 national and 1 State; 7 building and loan associations; 6 Methodist, 3 Presbyterian, 2 Baptist, 2 Lutheran, 1 Episcopal, 1 Disciple, 1 United Brethren, and 2 Catholic churches, 3 of which together represent an expenditure of over \$100,000; and 8 public-school buildings valued at \$140,000, in which 58 teachers are employed, and the enrollment is 3,000. There are also 2 parochial schools (1 Catholic and 1 German Lutheran), an academy for young ladies belonging to the Catholics, which cost \$40,000, and a business college. The city library contains nearly 7,000 volumes. The opera house has a seating capacity of 1,300, as has the armory, and there are 3 large halls, and 3 parks. Three daily papers are published, and 5 weeklies, 1 in German. The hospital is under the direction of the Catholics. The Fifty-first Congress appropriated \$100,000 for a Federal building. Danville lies on the northeastern outcrop of the great coal fields of Illinois, the seam, except immediately under the old part of the city, averaging a thickness of 5½ feet, and in some places the coal is so near the surface that it is only necessary to strip off a shallow layer of earth to expose it. The output from

the Danville fields is placed at 1,500,000 tons yearly. More than 1,000 railroad men are employed here, the shops of the Chicago and Eastern Illinois employing 800, and disbursing between \$30,000 and \$40,000 monthly. The shops of the Wabash Railroad are at the little village of Tilton, across the river, which is included in the township; they employ about 200 men. Three hominy mills run night and day, and there are 4 flouring mills also, in addition to 2 planing mills, 3 galvanized-iron works, 3 foundries and machine shops, 2 boiler works, 4 carriage and buggy, 1 woolen, and 1 knitting factory; another of lounges and mattresses, 1 of excelsior, 1 of grain-weighing machines, 1 of automatic bell-ringers, a large sawmill for the production of wagon timber, and a heading factory; a starch company with a capacity of 3,000 bushels of corn daily, a soap factory, 2 of patent medicines, 6 of cigars, a brewery and bottling works, and 2 blank-book and binding establishments. A large quarry of limestone near the city is being worked, and there are quarries of sandstone and sand, while the fine clay beds along Vermilion river are utilized in the manufacture of paving brick, a company having purchased 80 acres and erected brick buildings at a cost of \$50,000. Three kilns have a capacity of 100,000 each, and 2 others are in process of erection.

**Dunkirk**, a city and port of entry in Chautauqua County, N. Y., on Lake Erie, nearly midway between Buffalo, N. Y., and Erie, Pa. It has an excellent harbor, and is the terminus of the New York, Lake Erie and Western and the Dunkirk, Allegheny Valley and Pittsburg Railroads, and on the main line of the Lake Shore and Michigan Southern, the New York, Chicago and St. Louis, and the Western New York and Pennsylvania. In 1880 the population was 7,248, and it increased to 9,416 in 1890. In 1893 it was about 12,000. It was incorporated as a village in 1837, as a township in 1859, and as a city in 1880. The city is in and is a portion of the township of Dunkirk. The name was given to the place (originally Chadwick's Bay) by Elisha Jenkins in 1818, for Dunkirk in France, on account of its harbor resemblance. The electric-light plant and the water works are owned by the city. The last are of the Holly system, and cost \$100,000. The supply is drawn through a crib in Lake Erie, near the beacon light. In 1889 there were 20 miles of mains, and 112 fire hydrants with pressure sufficient to render the use of fire engines superfluous. There are about 6 miles of paved streets, a beautiful park, and a complete system of sewers; 2 national banks with joint capital of \$205,000; 15 churches, of which 2 are Presbyterian, 1 Episcopal, 3 Lutheran, 3 Methodist (1 German), 1 Baptist, 1 Hollander, and 3 Catholic (respectively Irish, German, and Polish, each with a parochial school), and a Catholic orphan asylum. The public schools number 12. One daily and 2 weekly newspapers are published, and there is an opera house. An electric street railroad connects the city with Fredonia, 3 miles distant. On Point Gratiot, about a mile and a half beyond the business portion, is a beautiful summer resort known as Hickoryhurst. Dunkirk has an altitude of 598 feet above sea level. Being on the southeastern shore of the lake, the harbor is free from ice earlier than Buffalo. The receipts of the port

for the year 1890 were 20,651 tons. It is surrounded by an agricultural and dairying district, and among its manufacturing establishments are large locomotive works, which in 1889 employed nearly 1,000 men. The capacity of the works was 250 engines a year. There are also iron works, car heater and radiator companies, several planing and flour and feed mills, a brewery, and minor manufactures.

**Durango**, a city of Colorado, the county seat of La Plata County, and metropolis of the southwestern part of the State, known as the San Juan country, in the valley of Animas river, sheltered by mountains and foothills, 450 miles from Denver. The river runs through the entire length of the city, about 2 miles, with 2 creeks flowing into it, one near the north and the other near the south end. It has an altitude of 6,405 feet. It was laid out as a site in 1880, and patents for the land were obtained from the United States Government in 1881. The same year it was incorporated and became the county seat. By the last Federal census it had a population of 2,726, and in 1893 it claimed between 7,000 and 10,000. The gross receipts of the post-office for the year ending Dec. 31, 1891, were \$8,071. It is the terminus of the Denver and Rio Grande and the Rio Grande Southern Railroads, and also of the Silverton branch of the former. The two portions of the city are connected by a bridge. On the first *mesa* on the eastern bank are the business blocks, buildings, and warehouses, and on the second *mesa*, east of the first, stand the residences, churches, schoolhouses, and public buildings. On the third *mesa* is the reservoir. More than \$1,000,000 were expended in building during 1892. The streets are 80 feet wide, with the exception of Third Street, or the Boulevard, which is 125 feet in width. There are two public parks. By reason of the location the city is almost self-drained, and can be easily sewered. Bonds for sewerage have just been issued. Water is pumped from the river, by the Holly system, to the reservoir, which has a capacity of 2,000,000 gallons. The pressure is 164 pounds, and the water mains are 8 inches in diameter. The water works are owned by the city, and cost \$100,000. There are 65 fire hydrants, an electric system of fire alarm, and a volunteer fire department. Electric lighting was introduced in 1885, and there is an electric street-car line, the company being capitalized at \$250,000. In 1889 6 blocks of the city were destroyed by fire, the loss being placed at \$500,000. They are now rebuilt in brick and stone, and are valued at \$3,000,000. There is a stone hospital, with accommodations for 100 persons, under the care of the Catholic Sisters of Mercy. The building cost \$40,000. There are 7 churches, those of the Presbyterians and Episcopalians being of stone; 2 belong to the Methodists, and the remainder are 1 Lutheran, 1 Catholic, and 1 Baptist. There are 2 large brick public-school houses and a high-school building that cost \$30,000. The school population is placed at 850. There is in addition a Catholic academy for young ladies, and a parochial school. Two daily and 3 weekly newspapers are published. The city has 2 national, 1 State, and 2 savings banks, and one local building and loan association. The county courthouse was erected at a cost of \$30,000. The city hall was destroyed



by fire in 1889. A United States land office is located here. Durango is known as the Smelter City; 2 smelters running night and day employ 450 men all the year round. One of these, which has been in successful operation since the city was founded, in 1881, employs 300 men, and has 6 blast furnaces, treating 300 tons of ore a day. The plant covers 160 acres. The company is capitalized at \$2,000,000, and has a monthly pay roll of \$30,000. Its shipments of bullion and matte during the year 1892 were 10,326.69 ounces of gold, 1,097,385.67 ounces of silver, 6,059,059 pounds of lead, and 1,089,552 pounds of copper. The other smelter, capitalized at \$500,000, is one of the 4 plants of its kind in the United States treating copper by a new process known as Bessemerizing. Ore-sampling works (auxiliary to the smelters), which date from 1891, employ 30 men in handling 15 cars of ore a day. Next to the smelting, the coal industry is most important. The mountains and foothills surrounding the city for miles contain vast coal beds, which can be mined at small cost. The present output of the mines is about 300,000 tons annually; \$2,000,000 capital are invested, and about 300 men are employed. Four large lumber firms, with mills near the city, operate planing mills in Durango, and disposed of lumber to the amount of \$200,000 in 1892. Two machine pressed-brick and several hand pressed-brick companies employ 100 men in turning out 100,000 bricks a day, and there are 3 large limekilns. Two flouring mills have a combined capacity of 200 barrels a day. A foundry and iron works, 3 wagon factories, and 2 breweries, one having its own ice machine and turning out 18,000 barrels of beer yearly, complete the list of large establishments. Fine building stone is found on all sides of the city. In four months from Aug. 6 to Dec. 6, 1892, the 2 railroads brought into the city 7,228 loaded freight cars and took out 2,582. Of this amount 2,546 were cars of ore and 732 of merchandise. Much traffic is also carried on by wagon. There is a board of trade. Nine miles from the city are natural hot springs. A Keely Institute is located here. The valleys and *mesas* around Durango form one of the richest agricultural regions of the State, having an inexhaustible supply of water for irrigation. The average yield of wheat by irrigation is 25 bushels an acre, and from 60 to 100 bushels of oats. Fruits of all kinds are raised. The United States Land Office has disposed of 102,000 acres of land under the pre-emption, and given away 50,000 under the homestead laws. It has sold about 7,000 acres of coal land, at \$10 to \$20 an acre, according to the distance from a completed railroad, and has issued receipts for about 3,000 mines of gold and silver.

**Fergus Falls**, a city of Minnesota, of about 5,000 inhabitants, beautifully situated in a fine farming country on both sides of the Red River of the North. It is the county seat of Otter Tail County. The increase in population from 1,635 in 1880 to 3,772 in 1890 was 130.7 per cent. Many of the business buildings are of brick, as are also the county buildings, courthouse and jail, the City Hall, and 3 fine school buildings. The schools have an enrollment of 1,000 pupils, and prepare students for the State University. The churches are, respectively, Methodist, Presbyterian, Congregational, Baptist, Catholic, and

Lutheran. There are 3 national banks, with a paid capital aggregating \$250,000. One daily and 3 weekly newspapers are published, one of the latter in the German language. Gas and electricity are used for lighting. An abundant supply of pure water is pumped by water power from the river, above the city. The population is largely American, from New England and the Middle States, and the foreign portion of both city and county is mostly Scandinavian. Fergus Falls has two through lines of railroad, the Great Northern and the Fergus Falls and Black Hills branch of the Northern Pacific. There is also a branch of the Great Northern, which runs north along the valley of Pelican river. The largest industry in the city is the flour mills, of which there are 5, with an aggregate capacity of 2,000 barrels a day, employing about 100 men, with a capital aggregating \$250,000. There are also 2 sash and door factories, a wagon factory, and a woolen mill which employs 40 persons, as well as minor concerns. The third hospital for the insane is here. The streets are of gravel, and dry and clean. The well-equipped fire department numbers 40 men. The city possesses abundant water power. A flood in the river at this point is altogether unknown, and a rise of 1 foot very rare. The reason for this unvarying flow lies in the peculiarity of the country in which the river rises and through which it flows, its course being through a succession of lakes. The city has many advantages also as a health and pleasure resort, as it lies in the center of the most picturesque part of the State, known as the Park Region. To one traveling here in any direction there is always a view of one or more lakes of pure clear water, with a gravelly beach and grove of trees. Most of the lakes are well stocked with pickerel, pike, bass, and whitefish; and for hunting during the autumn months there are prairie chickens, wild ducks, and geese in abundance.

**Flint**, a city of Michigan, the county seat of Genesee County, on Flint river, in the heart of one of the most prosperous agricultural sections of the State. It is 64 miles northwest of Detroit, on the Flint and Pêre Marquette Railroad, and 33 miles south of Saginaw; 66 miles from Port Huron, on the Chicago and Grand Trunk Railroad; and 49 miles from Lansing. The main lines of these railroads intersect almost at right angles here, and the city is also the terminus of a third branch road. In 1880 the population was 8,409, and it increased to 9,803 in 1890. The first settlement was made here in 1819, but it was not until 1836, when the Government land office was opened, that the place assumed any proportions even as a trading post. In 1845 there were 193 resident taxpayers, and in 1855 the city was incorporated. The valuation of property is \$3,432,471 real and \$829,507 personal, making a total of \$4,261,978, a gain of \$150,000 over 1892. The rate of taxation is \$1.10 on \$100. There are 8 miles of paved streets, and others are graveled, lined with shade trees, and illuminated by the Vanderpool tower system of electric light in addition to gas. The drainage is excellent, and is supplemented by a complete sewerage system. Water is supplied from the Flint river by water works of the Holly system, completed in 1883 by a company with a

capital of \$100,000. Three pumps have an aggregate capacity of 7,000,000 gallons a day, and the regular pressure is 45 pounds, but in case of fire this can be increased to 140 pounds. There are nearly 20 miles of mains and pipes, and 118 fire hydrants. The fire department is ample and well equipped. There are also several artesian wells. Three daily newspapers are published, and 5 weeklies, one of the last being issued from the State institution for the deaf and dumb. There are 11 churches. Of the 8 public-school buildings, one—the high school—cost \$100,000. There are also a normal college and a Catholic parochial school. In the public schools 36 teachers are employed, and there is an average attendance of 1,716 out of a school population of 2,771. The public library, which owns 8,000 books, occupies a building of its own, and there is a music hall with a seating capacity of 1,200. Iron bridges cross Flint river and Swartz Creek, which flow through the city. The buildings of the Genesee County Fair Association are also here. Of the 4 banks, 1 is national, with a capital of \$200,000, and 3 are savings. Their aggregate capital is \$450,000. A private hospital for nervous and mental diseases consists of 4 brick structures, on a tract of 60 acres. The State Deaf and Dumb Asylum comprises 6 buildings, surrounded by 40 acres tastefully laid out. The industries include woolen mills, the plant of which covers 3 acres, turning out 1,200 yards daily, several large lumber and planing mills, cooper shops, 2 large carriage factories, wagon works, 2 road-cart factories, boiler and engine works, breweries, numerous cigar factories, creamery and churn factories, 4 large flouring mills, a factory of tables, and 1 of hat cases. Flint has an altitude of 712 feet above sea level.

**Fort Madison**, a city of Iowa, the county seat of Lee County, in the southeastern part of the State, on Mississippi river, 19 miles southwest of Burlington and 24 miles above Keokuk. The location, on a plateau several feet above high water, is peculiarly favorable, and on the north it is backed by a line of high bluffs. It has an altitude of 522 feet above sea level. In 1880 the population was 4,679, which was increased to 7,901 in 1890. In 1887 the Atchison, Topeka and Santa Fé Railroad extension, from Kansas City to Chicago, reached Fort Madison, which is the chief division point between those cities. This road built a large railroad and wagon bridge across the Mississippi, and also located here extensive shops, employing 1,000 hands, and a large and complete hospital. Further transportation facilities are afforded by the St. Louis, Keokuk and Northwestern, the Chicago, Burlington and Kansas City, and the Chicago, Fort Madison and Des Moines Railroads. The city is lighted by gas and electricity, and has an extensive system of water works. There are also 5 artesian wells. A street railway 3 miles long extends from the eastern to the western boundary. The principal business streets are paved with brick. There are churches of nearly all denominations, an excellent public-school system, 3 public parks, 2 with artesian wells and fountains, and 4 banks. Three daily newspapers are published, as well as 4 weeklies and 2 monthlies. The industries of the city include a car-wheel foundry, 2 large lumber mills, a beef and

pork packing house, extensive stock yards, a paper mill, farming tool, chair, boot and shoe, plow and cultivator, and sash, door, and blind factories; flouring and planing mills, foundries and machine shops, creameries, a brewery, brick-yards, stone quarries, etc. The State Prison is located here.

**Greeley**, a city of Colorado, the county seat of Weld County, on Cache La Poudre river, 4 miles from its junction with the South Platte, and nearly midway between Denver and Cheyenne, Wyo., 52 miles from the former and 54 from the latter city. It has an altitude of 4,779 feet above sea level. The valley in which it lies is exceedingly fertile. It is on the Cheyenne division of the Union Pacific Railroad, and on the Greeley, Salt Lake and Pacific. The city was settled in the spring of 1870 by families constituting the famous Union Colony (of which Horace Greeley was treasurer), under the lead of N. C. Meeker, who lost his life in the White River Massacre, in September, 1879. In 1871 the assessed valuation of real and personal property in Greeley was \$400,000. In 1886 it was \$1,000,000. In 1880 the population was 1,297, and in 1890 it was 2,395. In 1893 it was over 3,000. The lands near Greeley are irrigated by means of a canal 40 miles long, taken from the Cache La Poudre river, 17 miles west of the city, the head of the canal being 160 feet higher than its site. This canal is owned and operated by the farmers. Large quantities of farm produce are raised, from 3,800 to 4,500 car loads of potatoes being shipped yearly from Greeley. Electric lighting was introduced in 1886, and the water works were erected in 1888-'89. These have a tower or standpipe 30 feet in diameter and 30 feet high, with a capacity of 160,000 gallons. The supply is drawn from a well of 12 feet diameter, 28 feet deep, with 18 feet of water. The pumping capacity is 1,000,000 gallons in twenty-four hours. The entire plant cost \$65,000. In 1890 there were 50 hydrants for fire protection, and an efficient and well-furnished fire department. In the same year there were 4 public-school buildings, and a handsome high school, also a business college; 8 churches, Presbyterian, United Presbyterian, Methodist, Baptist, Congregational, Episcopal, Unitarian, and Catholic; a public library, owned by the city and supported by taxation; 3 weekly newspapers, and 3 banks with a joint capital of over \$300,000. The county courthouse, erected in 1883, cost \$40,559, and is of brick with stone trimmings. Two opera houses have an aggregate seating capacity of 1,200. There are several handsome blocks. The Union Pacific Railroad depot is of stone. The streets are 100 feet wide, and lined with trees. The industries of the city include a large irrigating-pump manufactory, with complete foundry and machine shops, several brick factories, and 1 brick and tile works, a flouring mill with a capacity of 400 sacks daily, a planing mill, a creamery with a capacity of 1,000 pounds daily, a cigar factory, and pickling works. An elevator has capacity of 100,000 bushels of grain and 16,000 bushels of potatoes. The city has a board of trade. The climate is beneficial to consumptives.

**Hagerstown**, a city of Maryland, the county seat of Washington County, on the west bank of



Antietam creek, surrounded by beautiful scenery, 75 miles by rail from Washington, 80 from Baltimore, and 175 from Philadelphia; 12 miles from the battlefield of Antietam, and 32 from that of Gettysburg. The plateau on which it is built is 700 feet above tide water, and commands a view of the four States of Virginia, West Virginia, Pennsylvania, and Maryland. In addition to 6 railroad lines—the Martinsburg and Poto-mac, the Baltimore and Western, the Cumberland Valley, the Baltimore and Ohio, the Western Maryland, and the Shenandoah Valley, over which there are 50 passenger trains daily—there are 9 macadamized roads leading into the country, which afford beautiful drives and fine wheeling for bicyclists. Hagerstown is the third city of Maryland, having a population in 1890 of 10,118, which had increased from 6,627 in 1880. The natural drainage of the city is excellent, and its reservoir of pure mountain water lies 7 miles away at the base of the Blue Ridge. The pressure is 80 pounds to the square inch. Electric lights are employed in illumination, in addition to gas, and an electric street railway was chartered in 1890. Four daily newspapers are published. Of 6 banks, 2 are national and 2 savings. There is an academy of music and an opera house, a county courthouse which cost \$100,000, a large market, an orphan home, a Keeley institute, churches of all denominations, the edifices of the Catholics, Presbyterians, and Episcopalians being of cut stone, and 3 public-school buildings, the enrollment in which in 1888-'89 was 1,565, while that of the parochial schools was 300. Kee Mar College, for young women, comprises 3 large brick buildings south of the city, with 16 professors and teachers, and over 100 pupils. It is forty years old. The soil here, at the junction of the Cumberland and Shenandoah valleys, is rich and fertile, and abounds in mineral resources as yet undeveloped. Fine timber is found within thirty miles. The industries of Hagerstown number 90, with capital of \$5,000,000, and employ 5,000 hands. They include a silk mill manufacturing ribbons, a cotton mill, 1 steam engine and machine works, 2 planing mills, iron works, paper mills, spoke and bending works, a rim factory, a knitting and a hosiery company, 2 fence companies, churn and crate works, 3 furniture factories, 2 bicycle works, rope works, 1 ice, 1 canning, and 8 cigar factories, a glove factory, a window-glass company, 4 marble and granite works, a paint mill, unfermented wine works, 4 fertilizer factories, 1 establishment turning out steam hay packers and another agricultural implements, chair works, a mattress and upholstering company, carriage and wagon factories, 6 bottling works, 2 flouring mills, and 1 grain elevator. A Chautauqua circle was inaugurated at Hagerstown in the summer of 1893.

**Hamilton**, a city of Ohio, the county seat of Butler County, in the southwestern part of the State, 20 miles from Cincinnati, on Miami river and the Miami and Erie Canal, both of which flow directly through the city, the latter having 2 locks within the limits. It is also on the main line of the Great Pan Handle Railroad, and on the Cincinnati, Hamilton and Dayton. There are 23 passenger trains daily between the city and Cincinnati. In 1880 it had a population

of 12,122, which increased to 17,565 in 1890. It has an altitude of 591 feet above sea level. Hamilton is a century old, and in 1891 it celebrated its beginning as a fort, erected, in September, 1791, by Gen. St. Clair, and named in honor of the Secretary of the Treasury. Three years later the town of Hamilton was laid out on the same spot. It was incorporated as a village and made the county seat in 1810, became a town in 1827, and in 1854 the neighboring town of Rossville was annexed and it became a city. Surface drainage to the river insures excellent sanitary conditions, and is sufficient for the greater portion of the streets. The water works, erected in 1884-'87 at a cost of \$300,000, draw their supply from a series of driven wells. They are owned by the city, as are the gas works, which cost \$140,000. There are 8 miles of electric street railway, an efficient fire department, 6 public-school buildings, a county infirmary, and a children's home; 1 Baptist, 1 Episcopal, 1 Evangelical German Protestant, 1 Jewish, 1 Lutheran, 3 Methodist Episcopal, 2 Presbyterian, 1 Reformed, 1 Universalist, 2 United Brethren, and 3 Roman Catholic churches; a free circulating library and a public library, each having a building of its own; 3 national banks, capitalized at \$100,000 each; and 4 building and loan associations, with an aggregate capital of \$4,000,000. Two daily papers are published, 4 weeklies (one in the German language), and 2 monthlies. The old courthouse and county buildings were torn down in 1883, and a new courthouse was built in 1885-'87, for which bonds were issued to the amount of \$290,000. The manufactures of Hamilton include 5 paper mills (one turning out colored papers only), knitting mills, a woolen mill, and 3 flouring mills, 2 safe and lock companies, a stove foundry, a company of gray-iron foundries, factories of paper-mill machinery, wood-working machinery, grain-cleaning, laundry, punching and shearing machinery, and paper slitters, machine tools, bent-wood work, plows, wagons, and agricultural implements, furniture and furniture specialties, traction engines and sawmills, clothing, gelatin, hub and spoke works, buggy and carriage companies, iron foundries, 1 company turning out steam pumps, 2 furniture casters, 1 autographic registers, 1 artistic tiles, 1 cider mills and ice tools, as well as a separate factory for the latter, 1 light machinery, 1 mattresses, and 1 turned-wood work. There are 5 malting concerns and 1 brewery. In addition to the Fair Grounds the city has a public park.

**Helena**, a city of Arkansas, county seat of Phillips County, at the foot of Crowley's Ridge, on Mississippi river, midway between St. Louis and New Orleans, 75 miles below Memphis and 100 miles from Little Rock. It is on the only high land on the west bank of the Mississippi south of Cairo, and has an altitude varying from 141 to 197 feet. In 1880 the population was 3,652, which increased to 5,189 in 1890. Transportation facilities are afforded by the Arkansas Midland and the St. Louis, Iron Mountain and Southern Railroads, as well as by boats and barges on the river. The city has gas and electric lights, a street railway, telegraph and telephone facilities, water works supplied by artesian wells 500 feet deep, with 6 miles of mains, the reservoir being on one of the high hills; an opera

house, 9 churches, fine public-school buildings, 1 daily and 3 weekly newspapers, 1 national and 2 State banks, 2 building associations, a courthouse, and a handsome Federal building. The cotton trade has reached over 60,000 bales. There are 2 cotton compresses, 2 cotton-seed-oil mills, 1 large shingle and 3 large saw mills, a foundry, and a box factory. The city has a chamber of commerce.

**Ironton**, a city of Ohio, the county seat of Lawrence County, 10 miles from the most southern part of the State and from the mouth of Big Sandy river, on the northeastern bank of the Ohio, 325 miles from Pittsburg and 141 from Cincinnati. The site occupies a gently rolling plat extending nearly a mile from the river to the hills. It has an altitude of 544 feet above sea level. Through the center of the city runs a little creek, which provides good drainage. Iron-ton was first laid out under the auspices of the Ohio Iron and Coal Company in 1849, and by 1860 it had a population of 3,700. In 1870 there were 5,888 inhabitants; in 1880, 8,857; and in 1890, 10,939. In 1892 the city claimed over 12,000. An important provision in the deeds of the Ohio Iron and Coal Company to the town lots was that in case ardent spirits should be sold on any of the premises, there should be a forfeiture of the property to the company on payment to the owner of half the appraised value. Transportation facilities, in addition to the river, are afforded by Norfolk and Western, the Dayton and Ironton, and the Chesapeake and Ohio Railroads. The Iron Railroad, 13 miles long, running into the furnace region, was constructed in 1851. Within 3 miles of the city are the Newport News and Mississippi Valley and the Ohio and Big Sandy Railroads. About one fourth of the shipments of Ironton are by the river. In 1891 the total inbound and outbound freight aggregated 471,609 tons. Gas was introduced in 1867, and the city has also an electric-light plant. In 1892 one of the streets was paved with fire brick, and the contract was given for another. It is proposed to extend the system until the city is paved throughout, and in connection a system of sewerage is being established. The water works, which are owned by the city, are of the Holly system and have 12 miles of mains. The pressure is 120 pounds to the square inch, and there are fire plugs at all the corners, from which several streams 100 feet high can be thrown in a few minutes. The fire department consists of 6 companies. The river bank for a long distance is well graded and paved, making the receipt and delivery of freight easy; and just below the water works the Government has erected 2 substantial ice piers, which provide protection for craft moored at the wharves. There is a street railroad over 7 miles in length, to Petersburg. Two daily and 4 weekly newspapers are published. Three national banks have an aggregate capital of \$650,000, and there are 2 private banks and 10 building associations. Forty-eight teachers are employed in the 5 commodious public-school buildings, one of which cost \$65,000. The total public-school enrollment is 2,200. There are also 2 Catholic parochial schools, a Catholic academy, and a County Children's Home. In 1892 there were 15 churches, and 3 in course of construction. Of these, 5 are Methodist, 1 African Methodist, 1

Lutheran, 1 Episcopal, 1 German Reformed, 2 Congregational (one of them Welsh), 1 Welsh Calvinistic Methodist, 2 Baptist (1 colored), and 2 Catholic. In the Masonic Temple is an opera house which seats 900, and there are also an Odd Fellows' Temple, a county courthouse and jail, and a Soldiers' Memorial Hall, erected at a cost of \$28,000. In the hills north and east of Ironton lie the vast resources of coal and iron which are the mainstay of its industries. There are 7 veins of coal in Lawrence County, and it is estimated that 1,000,000,000 tons are in sight, while 100,000 tons are used yearly in the mills and shops of the city. The iron ore of this region is easily and cheaply mined, and the product of the furnaces in the county which are tributary to Ironton is 140,000 tons yearly, one fifth of which is charcoal metal. Within 25 miles of the city, in Kentucky and Ohio, are 22 furnaces. The city has 5 iron furnaces, 3 foundries, 3 rolling mills, and 2 nail factories. In the iron mills and furnaces 1,300 men are employed, and 160 in the foundries; 250 more are engaged in the 8 lumber mills, and as many more in the 3 fire-brick factories. Ten million fire brick are turned out yearly, and between 3,000,000 and 4,000,000 building brick, as the clay deposits of the county are among its most valuable resources. There are also 3 carriage shops, 1 machine shop, 1 large flouring mill, a tannery, 1 soap factory, 1 ice factory, 1 shoe factory, 2 marble works, 1 brewery, 3 planing mills, and 2 cigar factories.

**Jackson**, a city of Tennessee, the county seat of Madison County, in the southwestern part of the State, on the north side of Forked Deer river, 150 miles from Nashville, and 90 from Memphis. In 1880 it had a population of 5,377, which increased to 10,039 in 1890, making it the fifth city of the State. It has an altitude of 372 to 427 feet, the ground on which it is built being gently rolling, giving fine natural drainage, which is supplemented by sewerage of the Waring system, 14 miles of sewer pipes having been laid to 1892. The corporation limits, which have been recently extended, embrace a little over 4 square miles. The city is the relay point for both the northern and the southern division of both the Illinois Central and Mobile and Ohio Railroads and the eastern and western division of the Tennessee Midland. The Mobile and Ohio Railroad has its offices here, as well as large shops in which most of the car and engine work on the road from St. Louis to Mobile is done. The Illinois Central also has shops, and the two roads pay out nearly a million dollars here yearly. Jackson was founded in 1821 by Dr. William E. Butler, the land being a grant from the State. The streets, which are graveled, have been extended and widened, and the old wooden structures in the business portion have been replaced by handsome brick buildings. In 1892 there were but two business houses twenty years old. The water supply is exceptionally pure, being drawn from 22 artesian wells, sunk close together, and connected with the pumps by one large main. The pressure is direct, as there is no standpipe. In 1892 there were 18 miles of pipe, and the maximum supply was 3,500,000 gallons in twenty-four hours. A lake, kept up by the overflow from the pumps, is in reserve for any unusual demand. The cost of



the plant, which is owned by the city, was \$155,000. Gas and electricity are employed in lighting, and there is a system of street railroad. Four banks have an aggregate capital of \$350,000, and there are 8 building and loan associations. Two daily, 1 semiweekly, and 4 weekly newspapers are published. The Southwestern Baptist University is here, which has an attend-

the Kankakee and Southwestern Railroads. The population in 1890 was 9,025, an increase of 59.71 per cent. over 5,651 in 1880. There are 10 miles of electric street railway, and 20 miles of sewers; the water works (gravity system) cost \$150,000, and have a reservoir with a capacity of 300,000 gallons, with 15 miles of mains. The supply is drawn from Kankakee river. The fire



FEMALE INSTITUTE, JACKSON, TENNESSEE.

ance of 250 students, and there is a female institute under the control of the Methodist Church, South; the Roman Catholics have 2 flourishing parochial schools, and the public schools had in 1889 an enrollment of 1,414 in 5 buildings. Lane Institute is a colored school under the charge of Bishop Lane. The various religious denominations are represented. The Supreme Court of the State for the western division sits in Jackson, as does the United States District and Circuit Court for the eastern division of West Tennessee. The Federal courthouse and post-office building cost \$85,000. The industries of the city include 3 foundries and machine shops, 3 planing and 2 large flouring mills, a cotton compress, a gin factory, a large cottonseed-oil mill, a fertilizer factory, a steam-printing house, a woolen mill, 2 ice factories, 1 of hoops, 1 of spokes, 1 of plows, 3 brickyards, 1 hardwood and ornamental furniture factory, 1 cigar factory, and 1 bottling works. Between 17,000 and 20,000 bales of cotton are marketed here yearly. The Board of Trade numbers about 100 members. Timber abounds in the county, which is well watered, and produces, in addition to cotton, fruits and vegetables of all kinds, which are shipped to northern markets. Jackson is known as the "Rose City," from its charming gardens, and the streets are lined with shade trees.

**Kankakee**, a city of Illinois, county seat of Kankakee County, in the northern part of the State, 56 miles south of Chicago, on Kankakee river, and the Illinois Central, Big Four, Indiana, Illinois and Iowa, the Kankakee and Seneca, and

department has an electric alarm system, and gas and electricity are employed in illumination. There is an \$80,000 summer hotel, a country courthouse, an arcade building and opera house which cost \$100,000, 13 churches, a high school, 5 public-school buildings with an enrollment of 1,200, 4 parochial schools (French and German Catholic, German Baptist, and German Evangelical), and a Catholic seminary; also a business college. Two of the 3 banks are national, and the total of banking capital is \$250,000. The city has also 4 building and loan associations, and a Business Men's Association. Two daily and 3 weekly newspapers are published, and there is a Ladies' Library Association. Sixteen organizations of secret and benevolent orders are represented here. An infantry company of the State National Guard has a fine armory, and a soldier's monument has been erected at a cost of \$5,000. The streets are luxuriantly shaded, and there is a public fountain. There are many handsome residences. Free mail delivery has been established. Pleasure steamers ply on the river, the driving park association has a kite-shaped track, and the county fair grounds are here. The city is the site of the Eastern Illinois Hospital for the Insane, valued at \$1,500,000, which has 2,000 inmates. There is also a county infirmary. The industries include a paper mill, a shoe factory, a flouring mill, a foundry and machine shops, extensive stone quarries, 2 tile and brick works, transfer elevators, a tannery, a planing mill, an ice factory, refrigerator works, a nail factory, an oil mill, 6

furniture factories, steam laundries, wagon shops, ornamental iron and wire works, and a brewery. The Illinois Central, Big Four, and Three I Railroads have shops here.

**Kearney**, a city of Nebraska, county seat of Buffalo County, south of the center of the State, 195 miles from Omaha, 136 west of Lincoln, and 9 west of Fort Kearney. It is 16 miles from Platte river, with which it is connected by a canal 30 feet wide and  $4\frac{1}{2}$  deep, which furnished 2,000 horse power for manufacturing in 1892. It has since been widened and deepened. In 1875 it had a population of 250, in 1880 of 1,782, and in 1890 of 8,074. In addition to the Union Pacific, the city has transportation facilities by the Burlington and Missouri River Railroad, while the Kearney and Black Hills Railroad, a local enterprise of which 66 miles had been constructed in 1892, has its main offices and shops here. It is to be extended to the coal fields of Wyoming and the mineral lands of South Dakota. In 1892 the Missouri Pacific Railroad was operated within 26 miles of Kearney. There are 175 miles of graded streets in the city, and 53 miles of sidewalks. The streets vary in width from 80 to 130 feet, and the main business street is provided with stone curbing and gutters. Electricity is employed in illumination. Twelve and a half miles of sewers have been laid, at a cost of \$70,000. The water supply is drawn from the great underflow which underlies the broad Platte valley, and has its source in the snows of the Rocky mountains. This is pumped and distributed through 16 miles of mains. There are 160 fire hydrants, and the pressure is sufficient to obviate the use of fire engines. There are volunteer fire companies, with 3,000 feet of hose, and an electric alarm system. From 1888 to 1892 \$3,576,852 were expended in improvements in Kearney, and an opera house 5 stories high, which cost \$140,000, and has a seating capacity of 1,200, 2 bank buildings, a business block, and several large buildings, all of brick and stone, were erected. The buildings of the State Industrial School cost \$500,000, the county courthouse \$100,000, and the City Hall \$25,000. The depot of the Union Pacific Railroad cost also \$25,000. A public library is maintained. Four of the 7 public-school buildings are of brick, and occupy squares of several acres each. One of these is a high school. The public-school enrollment is 2,200, and 40 teachers are employed. There is also a business college and an Episcopal school which accommodates 150 boarders, in 3 buildings, surrounded by 25 acres of land. There are 13 churches, and the headquarters of the missionary diocese of the Platte (Episcopal Church) are here. The net profit to the United States Government from the post-office in 1890 was \$8,328. The city has a free mail delivery. Four national banks have an aggregate capital of \$500,000, and there are also a State bank and a savings institution, as well as 2 loan and trust companies, with handsome buildings. Two daily newspapers are published, also 4 weeklies, and 2 monthlies, 1 religious and the other issued by the State Industrial School. Five and a half miles of electric street railroad are in operation. Nearly every industry in the city uses the electric power developed by the overflow of the

canal with a fall of 61 feet. Among these is a mill with a daily capacity of 200 barrels of flour. A cotton mill has been completed recently, at a cost of \$400,000, which operates 15,000 spindles and employs 450 persons. It has a daily capacity of 26,000 yards of unbleached muslin. It is operated by water power from the canal. There are 25 industries, among which are a paper mill, oatmeal mill, woolen mill, cracker factory, 3 brick works, an ice company, canning, pickling and vinegar works, stone works, a packing house, cornice works, a plow factory, a cold-storage, commission and seed company, a foundry and iron works, a manufacturing company (of hinge work), and a consolidated tank line. The race track of the county agricultural association is within 2 miles of the business center of the city. Kearney has an altitude of 2,200 feet above sea level. The climate is dry and healthful. The rainfall averaged, in twenty years, 25.42 inches.

**Lebanon**, a city of Pennsylvania, the county seat of Lebanon County, southeast of the center of the State,  $25\frac{1}{2}$  miles east of Harrisburg, and 82 miles from Philadelphia, on the main line of the Philadelphia and Reading Railroad. The Moravians built a church here in 1740, and another was built the same year by the Meunonites. In 1750 the town was laid out by George Steitz and called Steitztown. Twenty-two years later it contained 200 houses. In 1813 its name was changed to Lebanon, at the time Lebanon County was formed, being made the county seat, and in 1821 it was incorporated as a borough. Its growth in population, wealth, and commercial importance has been rapid and steady, and it ranks in proportion to population among the first manufacturing towns of the State. In 1880 it had a population of 8,778, which increased to 14,664 in 1890. The early settlement of the town was originally made south of Quittaphilla creek, along which mills were erected; about 1827 the Union Canal was constructed, on the line of which North Lebanon was built, about half a mile from the original town. In 1856-'57 the Lebanon Valley Railroad was completed, the line of which divided the two towns, and added materially to their growth and prosperity. In 1869 they were consolidated and many improvements were made. The city is regularly laid out, and the streets are macadamized, with the exception of one, which is paved with asphalt blocks. An electric street railway operates 14 miles of track, and connects the city with Myerstown on the east and Annville on the west. Pure spring water is brought several miles, and both gas and electricity are employed in lighting. Two daily and 6 weekly newspapers are published. The 25 churches are divided as follow: 5 Lutheran, 4 Methodist, 3 Reformed, 3 United Brethren, 3 Union, 2 Presbyterian, 2 Episcopal, 1 Baptist, 1 Catholic, and 1 Moravian. The public library is contained in the high school, and there are also a hospital and a widows' home. In 1887-'88 there were 8 public-school buildings, with 37 teachers, and an enrollment of 2,078, besides 350 pupils in private and parochial schools. The courthouse, a substantial brick building, was erected in 1816 and enlarged and remodeled in 1853. There is also a well-



arranged opera house. Lebanon lies in a fertile limestone valley of one of the richest agricultural regions of the State, in close proximity to the great coal fields and but 5 miles from the immense iron deposits of Cornwall, with which it is connected by the Lebanon and Cornwall Railroad. The passenger station of this road is one of the handsomest pieces of railroad architecture in central Pennsylvania. The Pennsylvania and Northern Central Railroad gives outlets to the North, West, and South. In the immediate vicinity of the city an abundance of limestone and brown building stone is found, as well as a superior quality of clay for bricks. The chief industry is the production of iron. The city has 6 iron furnaces. There are also 5 rolling mills, nut and bolt works employing from 300 to 400 persons, 3 machine works, boiler works, 2 stove works, and 1 chain works. The 3 hills of iron ore at Cornwall are respectively 150, 200, and 400 feet high, and have been worked for more than a century. In the Revolution, munitions of war were supplied to the colonists from the Cornwall mines. In these and the more recent formations of the South Mountain there are supposed to be more than 30,000,000 tons above water level. Lebanon has an altitude of 466 to 475 feet above sea level.

**Macon**, a city of Georgia, the county seat of Bibb County, in the central part of the State, 103 miles from Atlanta, 100 from Columbus, 124 from Augusta, and 198 from Savannah. It is on both sides of Ocmulgee river, at the head of navigation. The site is on the dividing line of two distinct geographical formations, where 300 miles of plain stretches south from granite hills. It is the center of a rich agricultural and fruit-growing region. Yearly 175,000 bales of cotton are received, and there is warehouse storage for 80,000. In 1806 Macon was an Indian trading post known as Fort Hawkins. It became the county seat of Bibb County when it was organized in 1822, and was named for Nathaniel Macon, of North Carolina, then President of the United States Senate. It was incorporated in 1824, and in the year following the first railroad survey in the State was made from this point to Milledgeville. In 1880 the population was 12,749, and it increased to 22,746 in 1890, exclusive of the suburbs, which by the census had 13,000. The streets of Macon alternate 130 and 180 feet in width, and are curbed with granite. They are beautified with fine shade trees, water oaks, and elms; the residences are generally surrounded by large yards and flower gardens, and there are three large parks and numerous smaller ones, in addition to parking in the center of the broader streets with Bermuda grass. Central City Park, which was laid out in 1871 at a cost of \$200,000, belongs to the city. With 600 acres adjoining it was reserved in the early days of settlement. The park contains 237 acres, including a fine race course, and here the Georgia Agricultural Society holds its fairs and has its buildings. Macon has an altitude from 311 to 334 feet above sea level. The drainage is excellent, and in 1893 the city was preparing to issue bonds for the purpose of putting in a complete system of sanitary sewers. The water is supplied from 18 natural springs, which furnish 3,000,000

gallons daily. They are 2 miles south of the city, and the water is pumped to a large reservoir on the top of the highest hill near the city. The standpipe that supplies the northern and western parts of the city is 91 feet high. There are 35 miles of mains, and 125 fire hydrants. There is a well-organized paid fire department, and 3 systems of electric street-car lines run through the business and residence streets. In 1889 the tax valuation was \$11,300,423, and in 1891 it was \$14,623,999. The bonded debt was \$568,800, and the city tax \$1.25, the whole tax being \$2.35. The post-office receipts for the year ending March 1, 1892, were \$53,590. The city is the center of 11 lines of railroad, all terminating here and having their shops here. In these about 1,000 men are employed. One bank has a capital of \$500,000, with surplus of the same amount; 2 are capitalized at \$250,000, 1 at \$200,000, 2 at \$100,000, and in addition there are several private banking institutions, making a total of \$1,660,000 banking capital. Macon has the honor of possessing the first female college in the United States, the Wesleyan, chartered in 1836. It cost \$125,000, and has an endowment of \$100,000. The building is 255 x 85 feet, and is 5 stories high. To 1891 the college had graduated 2,039 pupils, and in that year it had an enrollment of 260. There is also a Catholic academy for young ladies. Mercer University, founded in 1831, belonging to the Baptists, is here, and educates free of charge. St. Stanislaus College (formerly Pio Nono) is for initiatory training and education for priesthood in the Jesuit order. The State Academy for the Blind was incorporated here in 1852, and it had 89 pupils, with 12 instructors, in 1888-'89. There are 45 public schools, with 100 teachers and 5,419 pupils, in addition to the Alexander Free School, which has no connection with the county free-school system, but was the gift to the city of Elam Alexander shortly after the civil war. There are Methodist and Episcopal orphans' homes, a home for the indigent, and a home for indigent women, the last erected by Julia Parkham Jones, at a cost of \$25,000. The public library, which cost \$15,000, was completed in 1889, and has accommodation for 100,000 volumes. In 1890 it had 15,000. The academy of music, completed in 1884, has a seating capacity of 1,500. There are about 30 churches, white and colored, the Methodist, Baptist, Presbyterian, Catholic, Episcopal, and Hebrew having the handsomest edifices. Among public buildings are to be noted the Federal post-office and courthouse, erected in 1889 at a cost of \$125,000, the county courthouse, which cost \$130,000, the City Hall and city prison, and the Volunteers' Armory. Two daily papers are published, 3 weeklies (one of them religious), and a dental quarterly. The wholesale trade of Macon amounts to \$50,000,000, and it has nearly 100 wholesale houses. It is the largest inland cotton market in the State, and has 3 large cotton warehouses and compresses. It has also a large trade in lumber. In 1880 it had but 54 manufacturing establishments, representing \$651,800 capital, and employing 1,115 persons. In 1890 it had 161 establishments, with capital of \$3,608,977, employing 3,142 persons, which produced \$4,974,914, and consumed materials to

the amount of \$2,534,144. Four cotton factories represent \$1,430,390, and employ 1,038 persons. There are also knitting mills, 5 planing mills, 9 brick and tile works, 5 foundries and machine shops, 5 furniture factories, as many carriage and wagon shops, guano and phosphate works, a brewery, ice works, factories of wheels and spokes, agricultural-implement works, flouring mills, barrel and broom factories, canning establishments, gin shops, cotton-seed-oil mills, granite quarries, a candy and cracker factory, and smaller industries. Immediately adjoining the city is a fine supply of clay for brickmaking, and there is a large area of hard-wood land along the Ocmulgee. At Bellevue, a suburb of Macon, with which it is connected by an electric car line, there is a handsome clubhouse.

**Menominee**, a city of Michigan, the seat of Menominee County, on the west shore of Green Bay, at the mouth of Menominee river, on the south bank of which, across the State line, lies, directly opposite, the city of Marinette, Wis., with which Menominee is connected by a new iron swing bridge, 2 railroad bridges, an old wooden wagon bridge, and a foot bridge. The county covers 1,275 square miles of the southern end of the Upper Peninsula of Michigan, and, extending north from the city, the land rises to the great divide that separates from the Lake Superior region, reaching an altitude of 1,000 feet above Menominee in places. The city itself has an altitude of 594 feet above sea level. In 1880 it had a population of 3,288, which increased to 10,630 in 1890. In addition to the transportation facilities afforded by the Chicago and Northwestern and the Milwaukee and Northern Railroads, there are 3 lines of steamboats. During 1890 the arrivals and clearances of schooners at the port were 697, and of steamers, 593. The assessed valuation of property in 1890 was \$2,427,862, and the actual value \$7,500,000. The city is well lighted by electricity. A complete sewerage system was under construction in 1891, the estimated cost of which was \$75,000. Considerable work has been done in paving with cedar blocks, and an electric street railway is in operation, the company of which is capitalized at \$100,000. Water is drawn from the bay, and the plant of the water works is valued at \$150,000. It has been enlarged since its erection, in 1885. The fire department has an electric alarm system. In addition to a high-school and 5 public-school buildings, valued at \$50,000, in which 27 teachers are employed, there are 3 parochial schools—2 Catholic (French and German) and 1 Lutheran—and a commercial college. Of the 11 churches, 9 are Protestant. There are 2 hospitals, numerous hotels, a city library, 2 national banks, a county courthouse which cost \$30,000, and a county jail completed in 1888. Three weekly newspapers are published, 1 in the German language. The leading industry is lumbering. In the decade from 1880 to 1890 the city showed the greatest increase in the production of lumber in the United States. In 1880 it ranked sixth in the 9 principal lumber-producing points in the country, and in 1890 it was found to be the second. During the winter logging is carried on, and sawing in summer in 12 mills, which in 1889 turned out 332,469,247 feet of lumber, 45,047,550 laths, and 131,104,000 shingles, as well

as planed lumber, the total being valued at \$4,579,024. Three thousand men were employed. In addition to almost unlimited quantities of pine, in which the county abounds, there is excellent cedar, and traffic in this wood has attained large proportions. The shipments of lumber from the port in 1890 amounted to 202,452,000 feet, in addition to 11,474,000 laths and 2,341,000 shingles; about 100,000,000 feet of lumber were also shipped by rail; 642,137,318 feet of logs passed through the Boom Company's boom in 1889. The northern part of Menominee County is rich in iron mines, and the product of the range for the year ending Dec. 31, 1889, was 10,416,859 tons. The industries include a pulp mill and a mill for making manilla paper, the offices of which, and a mill for making print paper, are in Marinette, on the opposite side of the river. The pulp from the Menominee mill is carried by means of an endless cable across the river. The company is capitalized at \$175,000, and the pulp mill requires 40 cords of pulp wood a week. About 100 skilled laborers are employed in the mills the year round. There are also saw works, boiler works, and 2 breweries. A feature of interest is the "Mascot Kennels," just within the northern limits of the city. It is one of the few large kennels in the country, over 3,800 feet of netting being used in the yards, and is devoted entirely to St. Bernard dogs. There are more than 60 specimens of the finest strains.

**Muscatine**, a city of Iowa, the county seat of Muscatine County, on rocky bluffs which here form the bank of Mississippi river, 30 miles below Davenport, about 300 miles above St. Louis, and 220 miles by rail from Chicago. It is on the Chicago, Rock Island and Pacific and the Burlington, Cedar Rapids and Northern Railroads, and being nearer the center of the State than any other city on the Mississippi river, is advantageously situated for trade. The river, after flowing westward many miles, here resumes a southern direction, forming a great bend. The city is the natural terminus of the Hennepin Canal. It has a population of 11,454 by the last Federal census, having increased from 8,295 in 1880. It was first settled in 1836 and known as Bloomington, and was incorporated as a city in 1853. In 1891 half a million dollars were expended for improvements. Natural drainage is afforded by the gradual slope of the site, which varies from 531 to 562 feet above sea level. The streets are wide and well kept, and there is an electric system of street railway. In addition to gas, there are 2 electric-light plants. Two daily newspapers are published, also 3 weeklies, and 2 German weeklies. The churches number 17, of which 4 are Methodist (1 German and 1 African), 3 Baptist (1 German and 1 Holland), 1 Presbyterian, 2 Congregational (1 German), 1 Episcopal, 2 Catholic, 1 German Lutheran, 1 German Evangelical, 1 Friends, and 1 Dutch Reformed. Several of these have chapels, and there is a flourishing Young Men's Christian Association. In 1892 there were 8 public-school buildings, 1 of them a high school, 2 commercial and several parochial schools. One sixth of the population is employed in the factories. These include 3 large sawmills, 1 of which in 1891 cut 27,500,000 feet of lumber, 7,000,000 shingles, and 8,900,000 laths, 2 sash and door factories, the



largest oatmeal mill in the West, which consumes 1,500,000 bushels of oats yearly, a box factory, a large boiler and canning factory supply establishment, another factory of plumbers' supplies, a woven-wire picket fence factory, paving-brick and tile works, 2 pearl-button factories, novelty works, 1 factory of automatic clothes dryers and 1 of collars, 5 flour and feed mills, 2 potteries and a clay-pipe factory, 2 iron foundries, and 3 machine shops, 5 wagon, 3 carriage, and 5 harness factories, as well as 1 of wagon brakes, 1 spice mill and baking-powder works, a nickel-plating establishment, 3 barrel, 10 cigar, 3 candy, 1 pump, and 1 broom factory, 4 marble works, 2 pork-packing houses, and a flexible harrow factory. Large quantities of lumber and oatmeal are exported. The city is an important jobbing point. In 1892 negotiations were completed for the location at Muscatine of iron and steel rolling mills, a carriage manufactory, road-grader, scraper, and plow works, and a large pickling and preserving factory.

**Muskegon**, a city of Michigan, the county seat of Muskegon County, on the south bank of Muskegon river, one of the longest and most important rivers in the State, five miles above its mouth. It is the fifth city in size in the State, the third on Lake Michigan, and has the finest harbor on the eastern shore of the lake. By water it is about 120 miles from Chicago and 85 from Milwaukee. The river here opens out from 1 to 2 miles in width, forming Lake Muskegon, and affords 12 miles of water front; the harbor is being landlocked and is open all the year. The population increased from 11,262 in 1880 to 22,702 in 1890. In 1870 it received its city charter, with a population of 6,002, having been incorporated as a village in 1861. Railroad facilities are afforded by the Chicago and West Michigan Railroad, the Grand Rapids and Indiana, and the Toledo, Saginaw and Muskegon. The first has shops here valued at \$200,000, and employs 250 men. In addition to three steam transportation companies carrying on the marine business of the city, there is a tug company and a steam ferry connecting with North Muskegon. The total number of vessels entering and clearing the port during 1891 was 2,887, with a capacity of 706,837 tons. In 1890 the aggregate shipments by water were 355,515,000 feet of lumber, 90,808,000 shingles, and 22,670,000 laths, in addition to slabs, sawdust, excelsior, and general merchandise. In 1891 the shipments of lumber amounted to 224,986,000 feet, with 9,460,000 shingles and 13,770,000 laths. A railroad, five miles long, extends from the Life-Saving Station to the Hackley Assembly Grounds, similar in character and purpose to the Chautauqua. An electric street railroad operates 11 miles of track, and cost \$50,000. This street railroad company owns the handsome park of 58 acres between Muskegon lake and Lake Michigan on the west side of the city. Muskegon has an altitude of 593 feet above sea level. Its corporate limits cover 12 square miles, of which 5 are water. The streets are well paved, and two large main sewers have been constructed recently. Prior to 1891 water was supplied by a series of drive wells operated on the Vergennes system; the new plant, costing \$250,000, is equipped with

duplicate Holly vertical pumps, each having a lifting capacity of 4,000,000 gallons daily, the intake pipe having been extended 4,000 feet into Lake Michigan, where the crib and strainer are submerged 40 feet below the surface. There are 35 miles of mains and 450 fire plugs. The fire department possesses five stations and an electric alarm system. The post-office is second class, and the receipts for the year ending April 1, 1892, were \$24,623.48, an increase of about 9 per cent. over the preceding year. Four national banks have a capital of \$100,000 each, and there is a savings bank capitalized at \$50,000. The total enrollment in the public schools for the year ending June, 1892, was 5,287, an increase of 236 over the preceding year. Public-school property is valued at \$600,000, and, in addition to 6 cottages for kindergartens, there are 17 school buildings, a central building costing \$80,000, and a high school under construction to cost \$50,000. There are also 3 Roman Catholic parochial schools, and 2 others belonging to the German Evangelical and the Holland Christian Reformed Churches. A business college is in a flourishing condition. The church edifices number 24, and several denominations have Scandinavian, Danish, Swedish, Norwegian, and German congregations. The Young Men's Christian Association has a membership of 200. The Hackley Public Library, which cost \$104,000 and owns about 20,000 volumes, was a gift to the city from the citizen whose name it bears, who also presented to Muskegon the Soldiers' Monument, the largest public-school building, a park, and a public fountain. The City Hall and the opera house each cost \$25,000. A large "Wigwam," erected for political assemblages, at a cost of \$5,000, seats 2,500 to 3,000 persons. The city is lighted by gas and electricity. Since 1890 12 large factories have located at Muskegon. Among these is an iron and steel company employing 225 men and disbursing \$10,000 per month in wages, with a yearly output of 18,000 tons of high-grade iron and steel exclusively by the open-hearth process, the heating of which is done entirely by fuel gas manufactured on the premises. The plant covers 19 acres of land, with 800 feet of front on the harbor; its paid capital is \$200,000. There are 3 additional iron works, 1 boiler works, and 2 saw factories; a flour mill with a capacity of 250 barrels daily, and about 20 saw and planing mills; a piano factory, a chemical fire-engine company capitalized at \$240,000, turning out hose carts, hook-and-ladder outfits, and other fire department apparatus; a furniture company, which employs 175 men, and turns out a yearly product of \$200,000 in bedroom suites; a factory of patent earth closets, another of spring curtain rollers, dressed pickets, and other specialties, which employs 200 to 300 persons, and has an annual output of \$250,000, the plant covering 18 acres, with 3,500 feet of water front, and including 20 large buildings; a company turning out reclining, carrying, and invalid rolling chairs, revolving bookcases, library supplies, and portable desks, cots, etc., which last it supplies to the United States army; a company engaged in manufacturing woodwork for hames, using 800,000 feet of elm logs yearly, and disbursing \$1,500 a month; a brewery capitalized at \$250,000, a brick and tile, and stone sidewalk

company, a carriage factory, mattress company, bottling works, a bakery consuming raw material to the amount of \$150,000 yearly, and a chemical fire-kindler and excelsior company, as well as numerous smaller concerns—marble and granite works, cooper shops, willow and rattan, electric alarm and lime works. The Board of Trade has a membership of nearly 300. Two daily newspapers are published.

**NORTH MUSKEGON**, on the north side of Muskegon lake, on a plateau between it and Bear Lake, had a population in 1890 of 1,590, when still a village. In 1891 it was incorporated as a city. Two bridges have been authorized, one by Muskegon and one by the city itself, to cost \$12,000 each, which will reduce the distance between the two corporations about one mile, and will accommodate the electric car line of Muskegon, which is being extended. Water is supplied from Bear lake by water works which cost \$32,000, the capacity of the pump being 1,500,000 gallons a day. There are  $3\frac{1}{2}$  miles of water mains and 37 hydrants. The public-school enrollment in 1891 was 359, and a new central school building has been erected at a cost of \$12,000. There are 5 shingle and lumber mills here, one of which has an annual output of 25,000,000 shingles and 3,000,000 feet of lumber.

**MUSKEGON HEIGHTS**, south of the city, is a village incorporated Jan. 2, 1891, which, with but 1,300 inhabitants, contains factories disbursing from \$20,000 to \$25,000 a month in wages. It has a public-school building, recently completed, which cost \$9,000. A newspaper is published, and there are Baptist and Methodist churches. A large refrigerator company is located here, the plant of which covers 10 acres, and employs 250 men. A belt line alongside the works connects all railroad and steamship lines centering at Muskegon. Another important industry is an electric-crane company, capitalized at \$150,000, which was organized in March, 1891, and in its second year showed an output of \$250,000. Other establishments turn out key-way cutters with key-making attachments, key-seating machines and planers, horse-power fire engines, pianos, washing machines, and woodwork of all kinds; one company, which makes a specialty of fine interior decoration and finish, employs 125 men.

**Oklahoma City**, the largest city in Oklahoma Territory, now four years old, claims a population approximating 10,000. In 1890 it had by the Federal census 4,151. On the streets and sidewalks \$20,000 have been expended, \$10,000 on a fire department, and \$20,000 on a system of sanitary sewerage. The city is lighted by gas and electricity, and water works have been in operation nearly a year, which cost \$100,000, the supply being from artesian wells. There are 5,000 feet of stone and brick business blocks, including 13 three-story buildings. The city enjoys excellent transportation facilities, being on the main stem of the Atchison, Topeka and Santa Fé Railroad, running north and south, while the Choctaw Railroad furnishes egress east and west. It is also an important trading and manufacturing center, and is surrounded by a rich agricultural region. It possesses the only foundry and the only canning factory in the

territory, a \$75,000 cold-storage and ice plant, a carriage and wagon factory, a large grain elevator, roller mills with capacity of 400 barrels of flour and 200 of bolted meal daily, also a custom corn and flour mill, 2 planing mills, several steam and hand brick machines, 2 broom and 3 cigar factories. A complete telephone system connects all parts of the city, and there is free mail delivery.

**Orange**, a city of Essex County, N. J. It has a population of about 20,000, and is the Orange proper, around which lie the townships named East, West, and South Orange. It is the only city of the group, the largest in population and the smallest in area. It is very near the center of Essex County, 4 miles northwest of Newark, on an undulating plain on the first ridge of hills that rises above Newark, and at the foot of the second hill of the Watchung mountain, commonly but improperly called the First Orange mountain. It is within thirty minutes of New York, on the Morris and Essex division of the Delaware, Lackawanna and Western Railroad, is the terminus of the Orange branch of the Erie Railway, and the projected center of the new cable and rapid-transit elevated road from New York to the brow of the First mountain. The main street is traversed by an electric railroad running from the foot of Eagle Rock, West Orange, to Newark, and the principal crosstown thoroughfare by an electric road from South Orange to Rosedale Cemetery, connecting with Montclair, East Orange, and the cable elevator to the top of the mountain. The first settlements here were made by people who moved up from the town, on the Passaic, not long after it was founded by emigrants from Connecticut, in 1666. At the close of the seventeenth century there were several families of prosperous farmers here; in 1718 there were enough to form a Presbyterian society separate from the mother church; and in 1806 the township, named for the Prince of Orange, was laid off from Newark. In 1859 this was divided into the townships of Orange, and the East, West, and South Oranges. Orange, covering a little more than 2 square miles, was incorporated as a city in 1870, under the name of the Town of Orange, which was changed to the City of Orange in 1872. The old road from Newark to the "mountain settlements," upon which are also the centers of both East and West Orange, is now a broad avenue, macadamized and shaded by elms and other trees nearly one hundred years old. The business houses are closely gathered together for half a dozen blocks, in the neighborhood of the railroad station and at the intersection of the Newark and crosstown electric railroads. The city has 5 wards, and the government is represented by the mayor and 16 councilmen. The tax rate for 1892 was \$2.90. The police department, organized in 1869, consists of city marshal, 2 sergeants, 3 roundsmen, 1 truant officer, and 21 patrolmen. The paid fire department, organized in 1873 to succeed the Volunteer Fire Company, has about 25 men, 2 steam fire-engine companies, 1 hook and ladder company, 2 hose companies, and a fire-telegraph system with 25 boxes. The water works are complete and sufficient for the growth of the population. They are supplied from the west branch of Rahway river, and



have a reservoir of 270,000,000 gallons capacity between the First and Second mountains, west of the city. The works were completed in 1884, and cost about \$425,000. In addition to this, a storm water and sewage system is now nearing completion, the total cost of which will be about \$1,000,000. The city and suburbs are well lighted by electricity and gas furnished by private corporations. The shops and office buildings of the merchants, the Music Hall, Masonic Lodge, in which there is a large post-office, and the buildings of the First National Bank, the Young Men's Christian Association and the Women's Christian Temperance Union, besides the many fine churches and the newer schoolhouses, give the city considerable pretensions to architectural beauty. The residences are among the finest in the State. There are 5 public-school buildings, including the high school and a lately perfected manual-training school, employing 55 teachers, with an enrollment of nearly 2,500 pupils. There are several large private schools where young men and women are fitted for college, and kindergarten and music and dancing academies. The leading secular organization is probably the New England Society, which has a membership of 275. It is divided into sections devoted to study in many departments of science and the dissemination of knowledge, by means of lectures and exhibits. It has an historical and reference library and reading-room in its own building, the Music Hall. The Woman's Club has a membership of nearly 300. The Women's Christian Temperance Union has a building of its own, and many branches of educational and practical work. The Bureau of Associated Charities is on the plan of the New York Charity Organization. The Memorial Hospital has a building accommodating 50 patients, with a training-school for nurses. The orphan asylum has a large building. There is a board of health, the Orange Auxiliary of the National Medical Society, and other organizations for protection of the health and other interests of the population. The Free Library Association maintains a free reading-room and reference and circulating library for residents of the city. The Mendelssohn Union is a singing society with a total membership of 270, led by a conductor from New York, and giving several public concerts a year. There is a military company, a post of the Grand Army of the Republic, Order of Elks, Turnverein, Essex County Hunt, athletic club, wheelmen's club, lawn-tennis association, an art association that gives an annual exhibition of paintings and engravings, and a camera club.

The Orange National Bank has a capital of \$150,000; the Second National Bank, a capital of \$100,000; the Orange Savings Bank and the Half-Dime Savings Bank have an aggregate deposit of \$1,750,000. Of the 5 weekly papers, 2 are in the German language. The Board of Trade, which was established in 1891, has a membership of about 160.

This ranks as the fourth hat-manufacturing city of the United States, and the portion of the town known as the Valley, southward toward South Orange, called Highland Avenue, is largely occupied by hat factories and their operatives. In this and other portions of the city, where the small amount of water necessary in the

dyeing has been afforded by the insignificant streams that are the only water courses between the Passaic and Rahway rivers, there are about 20 factories for blocking and finishing men's hats, employing about 5,000 persons, and representing an investment of about \$1,000,000. This industry was begun about one hundred years ago, and has always been the principal one of the place. Two of the largest hat-forming mills in the country have been opened during the past ten years, and that branch of the trade has so grown that a large portion of the finished hats turned out of the binders' hands and boxed by local factories for export have come into the city in the form of bales of rabbit fur, etc. Hatters' tools, shoes, sashes, blinds, doors, carriages, and harnesses are made here.

EAST ORANGE is the most important of the townships surrounding the city, though it is the smallest in area and has the fewest industries. It is a place of suburban homes, and covers  $3\frac{1}{2}$  square miles, lying east and a small portion north of Orange. It has 3 railroad stations, and is traversed through the main street by the Newark and Orange Electric Street Railway. The population is 14,000. The government is by a township committee, consisting of the chairman and 12 members. The police department numbers 25 men. The fire department (paid) has 5 hose companies and 1 hook and ladder company. There are 5 graded public schools, including kindergarten and manual training. There is a board of health, and 1 newspaper is published here. The water supply is obtained from driven wells owned by the Orange Water Company, a private corporation. The town has a deodorizing system of sewage, copied from Birmingham, England, and completed about four years ago, at the cost of \$425,000. There is a national bank, a savings bank, a large porous-plaster factory, and a few other industries. There are several athletic and social clubs, and societies for village and personal improvement. There are 4 Presbyterian churches, 2 Episcopal, 3 Methodist, 2 Baptist, 1 Congregational, 1 Dutch Reformed, and 1 Roman Catholic.

WEST ORANGE township lies west of the city, covering about 15 square miles, from the foot of the First mountain beyond the summit of the Second mountain, rising to 650 feet above the sea. The population numbers 5,500. There is a police department of 12 men, a well-organized fire department, 2 Presbyterian and 1 Episcopal churches, and 2 graded public schools. A large portion of this township is still occupied by farms, which supply the markets of the neighboring towns and cities. There are also many fine country residences on the ridge above Orange, commanding a view eastward even to Long Island. The mountain ridge, which is an outcropping of the same geological formation of trap rock as the Palisades of the Hudson, has long been worked by quarrymen and stone crushers for the macadamized roads. There are also valuable deposits of building sand and some soft red sandstone quarries. The highest point of the ridge is Eagle Rock, a well-known place of observation and picnic ground, where the Germans of Newark celebrate their sunrise festival of Pfingster. It is reached by the trolley railroad from Newark, and a cable elevator.

**LLEWELLYN PARK** occupies about 750 acres on the eastern side of the mountain, between the city of Orange and Eagle Rock. This inclosure was laid out about 1850 by Llewellyn Haskell for a residential park, and is now almost completely taken up by about 60 families, who unite to keep the inclosure as one large estate. There are small pieces of woodland, plantations of rare shrubs and trees, small but carefully kept water courses in rural glens, a ramble of 50 acres, and about 12 miles of drives.

**SOUTH ORANGE** township covers about 12 square miles, and is the southern boundary of the city and the two other townships. The township has a population of about 6,000. It was organized in 1860, and is governed by a committee consisting of the chairman and 4 members. It is connected with Orange and with Newark by separate and direct lines of trolley electric railroad. The only industry in the place is a grist mill. The township is principally occupied by farms and by residences of Newark and New York business men. There are 4 graded schools, 2 Presbyterian churches and 1 chapel, 3 Methodist churches, 1 Episcopal, and 1 Roman Catholic. The Roman Catholic College, Seton Hall, occupies a large estate with several imposing buildings, and a large orphanage is on the main road to Newark. There are 5 post-offices in the township—Valesburg, Hilton, Manhattan Park, Maplewood, and South Orange. The village of South Orange, which covers about 2 square miles round the railroad station of the same name, was incorporated in 1869, and has a separate government from the township, vested in the Board of Trustees, consisting of a president and 6 members. The village has its own pipes for water, which it buys of the Commonwealth Water Company. It is lighted by gasoline, and has police and fire departments. The farthest station in the township is within an hour of New York.

**Ottawa**, a city of Illinois, the county seat of La Salle County, on the north bank of Illinois river, just below the mouth of the Fox, 98 miles east of Rock Island and 83 from Chicago, with which city it is connected by the Illinois and Michigan Canal, flowing through its center and terminating at its western boundary. It is on 2 great trunk lines of railroad—the Chicago, Rock Island and Pacific, and the Chicago, Burlington and Quincy. In 1880 it had a population of 7,834, which increased to 9,985 in 1890. The city was settled in 1830, and was made the county seat a year later. It was incorporated as a village in 1838, and as a city in 1853. The streets are well graded, and are being paved exclusively with brick, with tile sidewalks. In 1888 5 miles of these were laid. In 1891-'92 a complete system of sewers was put in. In addition to more than 150 artesian wells, the average depth of which is 300 feet, water works supply an abundance of spring water obtained in the suburbs. There is an efficient volunteer fire department, also an electric street railway, while both electricity and gas are employed in illumination. Two of the 3 banks are national, and have a joint capital of \$500,000. Three daily and 7 weekly newspapers are published, also 1 quarterly. The public-school property is valued at \$100,000, of which \$15,000 belongs to the

high school, and the school fund reaches nearly \$40,000 yearly. There is a Catholic parochial school, and an academy for young ladies. A public library was given to the city in 1885, and a business university is located here. The churches are, respectively, 2 Congregational (1 French), 2 Methodist, 2 Presbyterian, 1 Baptist, 1 Episcopal, 1 German Lutheran, and 1 German Evangelical, and 2 Catholic (1 Irish and 1 German, the former being very handsomely finished and ornamented, and valued at \$72,000). The county courthouse, completed in 1883, cost \$121,333, and there are also a county jail, a supreme court building for the northern judicial district of the State, which cost \$45,000, and a county infirmary 4 miles west of the city, with 200 acres of land attached. The public parks contain fine native forest trees, and the city, lying in the valley of the Fox and Illinois rivers, is surrounded by much beautiful scenery. Especial points of interest are Starved Rock—where the last of the Illinois Indians perished miserably, giving the place its name—Deer Park Glen, Lover's Leap, Bailey's Falls, and Shabbona's Winter Retreat. In addition to its extensive manufactures, Ottawa has large agricultural interests, and ships great quantities of grain. Immense deposits of clay of all varieties are found in the county, and also beds of cement and glass sand. The industrial establishments include a window-glass factory, established in 1867, which turns out 100,000 boxes of such glass yearly, and employs 250 men; a mold, bottle, and glass and a bottle and flint-glass company; lamp-chimney glass works with a capacity of 25,000 barrels of chimneys yearly; an immense fireproof construction company; a sewer-pipe factory, capitalized at \$1,000,000; 1 factory of drain tiles, fire clay and brick companies, terra-cotta works, a pottery or stoneware works, 3 planing mills, flouring mills, a foundry and machine shops, wagon, carriage and buggy, and refrigerator factories, marble works, factories of agricultural implements, 1 of cottage organs, 1 of overalls and shirts, 1 of boxes, 9 of cigars, and 5 of harness and saddlery, pump works, and a photo-engraving establishment. In the South Park there is a celebrated medicinal spring. The city has a driving-park association.

**Oxford**, a city of Mississippi, the county seat of Lafayette County, on the main stem of the Illinois Central Railroad, in the northern part of the State, 74 miles from Memphis, Tenn. By the last Federal census it had a population of 1,546. It is the seat of the University of Mississippi, which was founded in 1844, and cost, with its grounds, which embrace 640 acres and 16 buildings, \$200,000. The institution is supported by a 6-per-cent. fund, invested in State bonds, which yields \$33,000 per annum, and in addition it receives grants from the Legislature. Students from all States are admitted free to all the departments, excepting only that of the law. There are also 2 large female colleges, a public-school building for whites which cost \$15,000, and a separate building for colored pupils. The church property is valued at \$50,000. The Presbyterians, Cumberland Presbyterians, Methodists, Baptists, and Episcopalians have church edifices, and there are 3 others belonging to



the colored people. The business houses, about 45 in number, are principally of brick. In the center of the public square stands the county courthouse, which cost \$26,000. The new county jail cost \$15,000. Federal courts, district and circuit, are held here, and there is a Federal building that cost \$60,000. The town site is advantageous, having an elevation of 685 feet above tide water. The surface is rolling, and it is well drained. The corporation covers 1,280 acres, and the streets are regularly laid out and graded. Brick and plank sidewalks have been laid. There are 2 banks, and a building and loan association, but no manufacturing establishments. The personal and real property is valued at about \$1,500,000, and the tax rate does not exceed 12 mills for all purposes. About 9,000 bales of cotton are handled here yearly.

**Palatka**, a city of Florida, the county seat of Putnam County, on the west bank of St. John's river, 60 miles south of Jacksonville and 30 miles southwest of St. Augustine. It is 18 miles from the Atlantic Ocean, and about 85 from the Gulf of Mexico. Four railroads afford transportation—the Jacksonville, Tampa and Key West, the Florida Southern, the Jacksonville, St. Augustine and Indian River, and the Georgia Southern and Florida. There are several lines of steamers on St. John's river, and in winter two lines of steamers make the famous Ocklawaha river trip, remarkable for its tortuous course and picturesque beauty. These steamers are exceedingly quaint in pattern, stern-wheelers, built on the high-pressure plan; and at night flaring flambeaux of pine torches, hung high in the bow, cast weird reflections upon the tangled foliage of the narrow stream. Palatka was founded by James Marver, and was incorporated in 1853. It has been twice destroyed by fire. After the civil war the culture of oranges became a new industry, and thousands of boxes of the fruit are now shipped annually from the county. In 1880 the population was 1,616, and in 1890 it had increased to 3,039. The city is lighted by gas, and has a street railway. The water supply is drawn from a spring, and a standpipe holding 200,000 gallons is fed by 2 pumping engines with a capacity of 1,250,000 gallons daily. Artesian wells have been sunk, the water, which is strongly impregnated with sulphur, being struck near the surface. The fire department consists of 4 hose companies and a hook-and-ladder company. A valuable adjunct is a fire-police force. There are 2 banks (1 national), 2 public schools for whites and 2 for colored pupils, a Catholic academy, and other private schools, several churches, 2 daily and 2 weekly newspapers. The wharves of the city are extensive. In addition to oranges, cotton and sugar are shipped. Both the Jacksonville, Tampa and Key West and the Florida Southern Railroads have shops here, and the industries include 2 sawmills and 2 shingle mills, the vast forests that border the St. John's and Ocklawaha rivers affording an abundant supply of cypress and long-leaved pine. One of these mills has a daily capacity of 30,000 feet of lumber. There is also a factory for orange boxes, as well as an ice factory and wagon works. Fish are taken by Northern fishermen in autumn, and shipped to the North.

**Paterson**, a city of New Jersey, the county seat of Passaic County, on Passaic river, 16 miles from New York city, among the foothills of the Ramapo range. The New York, Susquehanna and Western, the New York, Lake Erie and Western, and the Delaware, Lackawanna and Western Railroads pass through the city, and it is also connected with Delaware river by the Morris Canal. Paterson was founded in 1791 by an incorporated company with the title of the Society for Establishing Useful Manufactures (commonly called the S. U. M.), the existence of which was largely due to the influence of Alexander Hamilton, who was convinced that the United States would never be really free and independent of Great Britain until they could manufacture goods enough for their own consumption. One hundred thousand dollars was subscribed for the company, which was the largest of its kind in the country. The location at Passaic Falls was chosen as affording the finest water power anywhere within convenient reach of New York or Philadelphia, and the projected town was named from William Paterson, Governor of the State. Before the immense water power developed by the perpendicular fall of 50 feet made by the river here was so utilized the picturesque beauty of the spot attracted visitors. After its plunge the river flows between vertical cliffs until it sinks 20 feet farther to the level of the plain. The site of Paterson (700 acres), together with the river bed above and below the falls, was purchased by the S. U. M., at a cost of \$8,230, and Major L'Enfant, who laid out the national capital, was appointed (succeeding Nehemiah Hubbard) to superintend and lay out the town, but owing to his extravagant notions he in turn was superseded by Peter Colt. In 1824 the population was 4,787, and in the following year 24,000 spindles were in operation in the cotton mills. In 1860, ten years after its incorporation, the inhabitants numbered 20,478; in 1870, 33,579; in 1880, 51,031; and in 1890, 78,347, an increase of 53.53 per cent. in the last decade. In 1893 the population is claimed to be 90,000. Paterson is the third city in size in the State. Its altitude is from 81 to 193 feet above sea level. From 8,000,000 to 10,000,000 gallons of water are required to supply the city every day, and double that quantity in winter. The capacity of the water works, which are owned by a company, is 58,000,000 gallons, in 4 reservoirs, and a pumping capacity of 26,000,000 gallons a day, by steam and water power. At the end of 1892 there were 74 miles of mains, and there are 913 fire hydrants. The paid fire department maintains a force of 154 men. Its apparatus includes 9 steam engines, and 1 in reserve. Both gas and electricity are used for lighting. There are 2 large hospitals, 31 public halls, and 2 public parks, one containing 66½ acres, which cost \$75,000, and the other, 30 acres, which cost \$45,000. In 1891 several lots on Vreeland Avenue were also given to the city for parks. The public library contains 16,000 volumes. In 1866 the first street railway was built. In 1891 electricity as a motor power was introduced, and the present plant represents an outlay of nearly \$2,000,000. There are 35 miles of track in operation. The first public school in Paterson dates from

1827, and since that year 17 large, well-equipped brick buildings have been built, as well as a high school, and more than 200 teachers are now employed. The school population is about 20,000. There is also a business college. The 64 churches, including missions, are divided as follow: 7 Baptist, 5 Episcopal, 2 Lutheran, 2 Methodist Protestant, 2 Congregational, 12 Methodist Episcopal, 10 Presbyterian, 10 Reformed, 10 Catholic, 3 Hebrew, and 1 Swedenborgian. There are 13 cemeteries. The charitable institutions include 2 large hospitals, 2 orphan asylums, and an old ladies' home. One of the 3 national banks has a capital of \$400,000, and another of \$150,000; there are also 3 savings institutions. For a new City Hall \$400,000 have been appropriated, and in addition to the old one there is a county building and county jail. Five daily newspapers are published, 2 in German, and 6 weeklies, 1 in German and 1 in Dutch. The value of manufactured goods produced in Paterson is estimated at \$48,000,000 yearly. It is known as the Silk City, or the Lyons of America, on account of its leading industry, which dates from 1840. In 1880 the city had 52 industries reporting to the United States census, in 340 establishments: \$11,613,442 capital was employed; and 18,755 persons, with a pay roll of \$6,679,437. The value of the product was \$25,339,300, and materials were used to the amount of \$13,992,233. In 1890 73 industries reported, in 597 establishments, with \$27,387,421 in capital; 24,135 persons were employed, with a pay roll of \$11,523,558; the product was valued at \$41,898,231, and \$22,300,133 were spent for materials. The increase in silk manufacture from 1880 to 1890 was 112 per cent. There are now 90 establishments manufacturing silk and silk goods, with capital of \$14,353,491; 11,596 persons are employed, including 530 children, and \$5,021,768 are paid yearly in wages. The total amount of capital invested in the manufacture of silk in the United States in 1890 was \$51,007,537. Twenty-nine foundries and machine shops in Paterson represent a capital of \$2,769,321, and employ on an average 3,051 persons, at wages of \$1,716,801. The annual product is valued at \$4,048,592. There are also 22 dyeing and finishing establishments for textiles, employing 1,266 persons; 5 iron and steel works, with capital of \$1,535,335, which employ 1,149 persons, and realize \$1,813,313; 5 factories of jute and jute goods, with 836 persons employed, and capital invested to the amount of \$1,309,148; 6 establishments for manufacture of malt liquors, capitalized at \$1,865,889; a plant manufacturing linen thread, which occupies several large buildings, and which dates its eminently successful attempt to Americanize the Irish plant from 1864; 14 printing and publishing houses, and 123 building trades. The assessed valuation of property in the city in 1880 was \$19,898,485, and in 1890 \$28,824,280. The net municipal debt in the last year was \$1,605,993.

**Pine Bluff**, the third city in population of Arkansas, county seat of Jefferson County, on Arkansas river, 160 miles from its mouth, at the head of low-water navigation and in the center of the most productive cotton region in the State. It is 42 miles from Little Rock. By the

census of 1890 it had 9,952 inhabitants, having increased from 3,203 in 1880. At present it claims 15,000, of which two thirds are white. The town was first settled in 1819 by Joe Bonne, a French-Quapaw half-breed Indian, and was entered in the Government land office in 1832 by John W. Pullen, a North Carolinian. In 1836, the year of the nativity of the State, it was laid off in blocks and lots. Forty-three additions have been made and incorporated with the old town, the whole covering 3,000 acres. Since 1850 it has had a large trade, but its growth has been rapid from the completion of the St. Louis, Arkansas and Texas Railroad, which with the Missouri Pacific passes through the city, with the White River and Munroe Railroad as a feeder. The incoming and outgoing tonnage of the city largely exceeds that of any other in the State; 100,000 bales of cotton are handled here annually. There are 9 miles of a superior system of sewerage, water works, 10 miles of street railway, and gas and electric lighting. The shops of the St. Louis and Southwestern Railroad are here; and extensive shops exclusively for the building of cars are in course of erection, which will give employment to 1,000 men. There is a 90-inch Morse cotton press, with a capacity of 800 bales daily, and storage for 15,000 bales. An elevator and mill turns out 600 barrels of meal every day; a cotton-seed-oil mill has a capacity of 70 tons daily, and there is an ice factory making 20 tons a day. Pine Bluff is an extensive lumber market, being surrounded by a forest of soft and hard woods extending from 50 to 100 miles in any direction, and there are 2 planing mills and sash and door factories, as well as minor establishments. One daily and 3 weekly newspapers are published. Educational and church facilities are excellent, and there are 3 banks. The city has an altitude of 228 feet above sea level.

**Plattsmouth**, a city of Nebraska, the county seat of Cass County, handsomely situated on the eastern slope of the bluffs at the confluence of the Platte and Missouri rivers, a mile and a half below the mouth of the former. It is 22 miles south of Omaha, and two hours by rail from Lincoln. It is the gateway to the great South Platte country, and in addition to the river transportation 14 passenger trains leave the city daily over the Chicago, Burlington and Quincy, the Burlington and Missouri River, the Kansas City and St. Joseph, and the Missouri Pacific Railroads. A fine steel railroad bridge crosses the Missouri at this point. The land upon which the city is built was obtained by the United States Government through a treaty with the Indians in June, 1854, and in October of the same year a town company was organized, which secured an act of incorporation from the first legislature of the Territory in 1855. The town site was entered in 1856, and Platts-mouth soon became an important trading point as well as an outfitting station for the immense immigration to Pike's Peak and the gold mines. A regular line of packets plied to and from St. Louis. In 1869 the Burlington and Missouri River Railroad was built. The population increased from 4,175 in 1880 to 8,392 in 1890. Main Street, the principal business thoroughfare, has 50 or 60 business blocks, and has been paved



with Sioux Falls granite. Gas and electric lights are employed. The water works cost \$125,000, and a system of storm-water sewerage has been completed recently which cost \$40,000. Three daily and 3 weekly newspapers are published. An opera house, costing \$50,000, has been built, and the county courthouse, recently completed, cost \$80,000. There are 7 ward public-school buildings, and a four-story high school which cost \$25,000; 25 teachers are employed. The high school has a business college department. The churches are: 2 Presbyterian (1 German), 3 Methodist (2 of them Swedish and German), 2 Catholic, 2 Baptist (1 colored), 1 Christian, and 1 Episcopal. Fifty thousand dollars have been appropriated by the Federal Government for the improvement of Missouri river at Plattsmouth, and Fort Omaha was recently relocated 8 miles distant, \$500,000 being appropriated to begin improvements. The principal shops of the Chicago, Burlington and Quincy Railroad are at Plattsmouth, employing hundreds of men, and disbursing between \$35,000 and \$45,000 monthly. Brick and terra-cotta works, with a capital of \$30,000, turn out 27,000 bricks a day. There are also 4 cigar factories, 1 buggy and wagon works, a steam laundry, and a sash, door, and blind factory. The city has a board of trade.

**Pomona**, a city of California, in Los Angeles County, 32 miles east of Los Angeles, on the Southern Pacific and Atchison, Topeka and Santa Fé Railroads, over which there are 8 passenger trains daily each way. In 1882 it had 150 inhabitants, and by the census of 1890 it had 3,634. In 1880 it was not in existence. It lies in a beautiful and fertile valley, and views taken from it include mountains from 9,000 to 12,000 feet high. Since the introduction of a system of irrigation, largely from artesian wells, trees have been planted here with success, and all sorts of fruits abound. There are extensive orange, lemon, and olive orchards, while vast quantities of figs and deciduous fruits are shipped, as well as canned and dried. Grapes are raised for wine and raisins. In 1890 between 300 and 500 men, women, and children were employed in the cannery here, and 5 firms were engaged in drying the apricot crop. One orange grove, said to be the largest single grove in the world, contains 300 acres. The orange crop for 1890 was 97 carloads. Olives are pickled, and olive oil is manufactured. There are 100 miles of irrigating pipe in the valley, and 40 of iron and steel in the city, carrying artesian water, all under fire pressure. The city is lighted by gas. The gentle declivity of the site, without hill or depression, leaves all the streets on a perfect grade. It has an altitude of 857 feet above sea level. Twenty teachers are employed in the public schools, and bonds to the amount of \$40,000 have been issued for the construction of 2 new brick buildings. A college has been located 4 miles northeast of the business center, and 2 miles distant is the United States Experiment Station for Southern California. Eleven religious denominations are represented, most of

which have church edifices. There is a board of trade, and 1 daily newspaper is published, as well as 3 weeklies. Of the 2 banks, 1 is national. Mining is carried on, in addition to farming and fruit growing, and brass and iron goods are manufactured. A company has secured a water power in San Antonio Cañon, to be utilized for electric power and light. The climate shows a variation of but 16° in the mean average.

**Sheboygan**, a city of Wisconsin, the county seat of Sheboygan County, on Lake Michigan, at the mouth of Sheboygan river, 52 miles north of Milwaukee, and 43 miles east of Fond du Lac. It has one of the best harbors on the lake, for the improvement of which \$25,000 have been recently appropriated by the United States Government, and there is a shipyard and a modern floating dock at the mouth of the river. Boats touch daily at the port during the season. The first settlement at Sheboygan was made in 1836; in 1846 it was chartered as a village, and in 1853 was incorporated as a city. In 1880 the



FEDERAL BUILDING, SHEBOYGAN, WISCONSIN.

population was 7,314; in 1890 it was 16,359, the United States census placing Sheboygan in the list of the 10 cities in the country showing the best per cent. of growth in the decade; and in 1893 20,000 are claimed. The railroads that enter the city are the Milwaukee, Lake Shore and Western and the Chicago and Northwestern. In 1892, 450 buildings were erected, and \$1,346,850 were expended in improvements. Gas and electric lighting are in use, and there is a fine system of water works, in addition to paid fire and police departments. The fire department has an electric alarm system. The streets are wide and straight, many of them in the residence portion of the city being bordered with shade trees. A street railway operates 6 miles of track. The assessed valuation of property for 1892 was \$5,415,980, exclusive of public-school property, placed at \$200,000, and church property, worth \$260,000. The school population is 7,387, and there are 10 school buildings. In addition there are 5 parochial schools, and a flourishing business college. Eighteen religious denominations are represented, many of the church edifices being fine specimens of architecture. Two daily and 4 weekly newspapers are issued. Two banks



have deposits to the amount of \$2,304,747. An artesian well, the water of which is highly impregnated with mineral salts and possesses medicinal qualities, was bored by the city in 1875, in Fountain Park. It has a depth of 1,475 feet and pressure of 52½ pounds to the square inch, sufficient to force a stream 114 feet above the surface of the ground. A fountain has been erected at a cost of \$2,500. By the State Commissioner of Labor Sheboygan is ranked third in the State in the number of factory hands. Over 5,500 are so employed, the increase in number during 1892 having been 800. The monthly pay roll is \$325,000. The leading industry is the manufacture of furniture, the city being the largest chair-manufacturing center perhaps in the world. Five factories turn out 6,000 finished chairs daily, and 40,000 feet of lumber are consumed by the furniture factories every day. Other establishments are extensive tanneries, 5 large cheese warehouses that handle 18,000,000 pounds of cheese annually, 2 factories of enameled ware, 1 boot and shoe company, 2 carriage works, a foundry, machine shops, a flouring mill, various factories of wooden ware, milk safes, toys, office and hotel furnishings, Venetian blinds, table slides and mattress frames, soap, and cigars, over 300 persons being employed in the last-mentioned industry. There are also 2 breweries and 1 firm of shipbuilders. Extensive fisheries are here and large quantities of fish are shipped. The courthouse, completed in 1860, cost \$65,000.

**COLOMBIA**, a republic in South America, formerly known as New Grenada. As the result of the revolution of 1885 the 9 federal States were consolidated into the centralized republic of Colombia. The President is elected for six years. The Congress consists of a Senate of 27 members, each department being represented by 3, and a House of Representatives, elected in the departments in the ratio of 1 to 50,000 inhabitants. The President is Dr. Rafael Nuñez, elected for the fourth time in 1892, for the term ending in 1898. Colombia has an estimated area of 564,773 square miles. The population at the census of 1870 was 3,320,530, and in 1881 it was officially estimated at 3,878,600. The Government derives its revenue mainly from customs. The revenue for the biennial period 1891-'92 was estimated at 25,153,600 pesos, and the expenditure at 25,693,015 pesos, in paper, the peso being worth about 30 cents in United States money. For 1893-'94 the budget of receipts is 24,899,200 pesos, and of expenditures 27,322,136 pesos. A foreign loan of £1,913,500, contracted in 1873, has paid no interest for many years, and negotiations were begun in June, 1891, for a settlement of this debt, which amounts, with arrears of interest, to £3,059,985.

**Internal Affairs.**—On Jan. 30, 1893, a conflict took place in Bogotá between a mob of workingmen and the police, which was not ended till 100 persons were killed and 500 wounded. The mob attacked the house of Prof. Gutierrez, a Jesuit, and held possession of the city for two days. The troops were then called out, and martial law was proclaimed. The soldiers had difficulty in restoring order and arresting the leaders, all of whom were executed. After this street gatherings were prohibited, and the city

was strongly guarded by troops. An executive decree was issued suppressing all labor organizations and secret societies. The Liberal party, reorganized under the leadership of Santiago Perez, a former President, planned to overthrow the system of arbitrary government represented by Nuñez. Arms were introduced through Venezuela, until the Government discovered it and secured the co-operation of the Venezuelan authorities in putting a stop to the importation. The Liberals issued a manifesto condemning the new Constitution and the laws framed under it which confer extraordinary powers on the national Executive, and charging the Administration with abusing these powers in a manner not warranted by the Constitution. A projected rising in Cucuta, Santander, was prevented by the vigilance of the authorities. Liberal newspapers were suppressed for attacking the Government. In consequence of the alleged discovery in Barranquilla of plots to blow up public buildings with dynamite and start revolutions both in Colombia and Venezuela, martial law was proclaimed. An executive decree was issued in the summer, and published abroad by Colombian consuls, forbidding the importation of arms or powder except for the National Government.

A heavy tax, of 8 pesos per kilo on cigars and cigarettes, and 5 pesos on smoking and unmanufactured tobacco, was decreed by Congress, in the form of a monopoly, for the purpose of increasing the revenue. The Government offered to farm the monopoly for 2,500,000 pesos in gold for thirty years, but the general discontent caused by the measure, not only among the merchants who were affected but throughout the community, compelled the Government to defer the execution of the law.

A severe famine afflicted the fertile department of Cauca in 1893, reducing a half million of people to starvation; and a volcanic disturbance, which leveled a ridge near Popayan and interrupted the course of three rivers, in March, added to the general distress. The revolutionary ferment in the country led to the reconstruction of the ministry in February, when José M. Campo Serrano became Minister of the Interior, and Domingo Ospina Camacho Minister of War. Dr. Nuñez, who has never taken the emoluments coming to him as President of the republic, renounced also the traveling allowance of 30,000 pesos voted by Congress in 1888, to disarm any suspicion of the purity of his motives in combating the efforts to overthrow his administration.

**The Panama Canal.**—The original concession for the construction of a canal across the Isthmus of Panama was granted in 1878 to Lieut. Lucien Napoleon Bonaparte Wyse, of the French navy, the engineer who made the survey for the company that was organized by Ferdinand de Lesseps to build the canal. After the appointment of a liquidator for the company in 1890, Lieut. Wyse, who had long before been excluded from the direction by the speculators and contractors who mismanaged the enterprise, went to Colombia and secured from the Government a prolongation of the concession for two years, pending the organization of a new company to carry the works to completion. The prolongation expired on Feb. 28, 1893, and was extended from month to month while negotiations for a



new arrangement were going on. Congress, in January, 1893, authorized the Government to renew in a modified form the contract made with the liquidator, or to make a new contract providing for the resumption in a serious and permanent manner of the work of excavation. The Government was suspicious that property belonging to the canal and pledged to the state was disposed of illegally, and in the new contract at first insisted on having immediate possession. A contract was finally signed by Dr. F. Paul, attorney for M. Monchicourt, the official liquidator, and the Colombian Minister of the Interior, prolonging the time allowed for the organization of a new company till Oct. 31, 1894, and granting a further term of ten years for the completion of the canal. The debt of the company to the Colombian Government is increased from 6,500,000 francs to 8,000,000 francs, and the new liability is to be discharged in three annual payments of 500,000 francs. The plant used in the construction of the canal will remain in the possession of the liquidator, but an inventory is to be taken by representatives of the Government and of the canal company. The other clauses of the previous conventions are renewed.

**Controversy with Venezuela.**—In Arauca and other frontier towns the administrator of confiscated properties appointed by President Crespo of Venezuela to carry out his decree of Oct. 20, 1892, against sympathizers with Andueza Palacio's usurpation, took away the property of many Colombian citizens. The Colombian Government raised a protest, and after some correspondence the confiscated estates were returned to their owners.

**COLORADO**, a Western State, admitted to the Union Aug. 1, 1876; area, 103,925 square miles. The population in 1890 was 412,198. Capital, Denver.

**Government.**—The following were the State officers during the year: Governor, Davis H. Waite; Lieutenant-Governor, David H. Nichols; Secretary of State, N. O. McClees; Treasurer, Albert Nance; Auditor, F. M. Goodykoontz; Attorney-General, Eugene Engley; Superintendent of Public Instruction, John F. Murray; Railroad Commissioner, William A. Hamill; Regents of the University, D. M. Richards, W. E. Anderson. All these officers are Populists. Chief Justice of the Supreme Court, G. W. Allen; Associate Justices, Charles D. Hoyt, Victor A. Elliott.

**Finances.**—The biennial reports of the auditor and Treasurer, submitted at the beginning of the year, show the expenditures to have been kept almost within the income; the outstanding indebtedness amounted to \$1,462,455.93, from which the capital-building bonds being deducted (\$600,000) the actual floating indebtedness appears to be \$862,455.93. This amount is practically represented by the outstanding warrants of the years 1887-'89. These warrants are held as follows: Public-school fund, \$444,517.46; State University, \$22,645.22; internal improvement fund, \$36,744.59; income fund, \$1,202.59; total, \$505,109.86. The estimated revenue for 1893-'94 is \$700,000 for each year.

**Education.**—The eighth biennial report, covering the years 1891-'92, gives a history of the public schools of the State. From 1871 to 1892

the number of school districts increased 748; increase in schoolhouses, 16.25 per cent.; increase in value of school property, 64.19 per cent. The average value of schoolhouses, including sites and fixtures, is \$3,949.13, while the average in the United States is \$1,495. In 1892 there were 76,647 pupils, of whom 62.9 per cent. were in graded schools.

A bill was presented to the last Legislature providing for free text-books, but it failed of passage. The State Superintendent has sent circular to book publishers, proposing to deal directly with them, thus saving the pupils the profits of local dealers.

The institutions for higher education show progress and increasing facilities. The Iliff School of Theology has been added to the University of Denver. The building, which was opened in June, is a handsome structure, with a foundation of rose granite, the main portion being of red sandstone. The building is finished entirely in oak, and is so heated that the entire circulation of air can be changed every twelve minutes. There was an attendance during the year of over 700 in all departments. There were 36 graduates—16 in the medical department, 7 in the pharmaceutical, 1 in the dental, 1 in the theological, 5 in the liberal arts, 6 in the law, and 3 in the manual-training department. The total valuation of the university property is given as \$1,560,000. The main building cost \$80,000; the Chamberlin Observatory, \$45,000; and Wycliffe Cottage, \$12,000. The Medical College and School of Pharmacy still occupy the old premises in the lower part of the city.

The State University, at Boulder, sent out 10 graduates from the college course, and 8 in medicine. The School of Law numbered about 25 young men and women. The Colorado Divinity School, though not a department of the university, or supported by it, yet will make use of many of the university courses, its students being enrolled as special students in the College of Liberal Arts. This is an unsectarian school.

The change in the School of Medicine, the recognition and enlargement of the faculty, and the arrangements by which the middle and senior classes receive instruction in Denver, have resulted in a great increase in attendance—over 100 per cent.

The Agricultural College, at Fort Collins, has accommodations for 300 students. Improvements have been made in the buildings and grounds for better sanitation and teaching facilities. The study of irrigation methods and meteorology have prominent places in the curriculum.

The Jesuit College of the Sacred Heart, in the town of Highlands, was established in 1889. The property is valued at \$400,000. The grounds cover an upland tract of 50 acres. The building is 4 stories high, 300 feet long by 76 feet wide. The instruction includes both classical and commercial courses. There are 82 pupils, 13 of whom are in the commercial class. The instructors number 22.

The Normal School at Greeley graduated this year a class of 23; at Colorado College, Colorado Springs, a class of 5.

**The New Capitol.**—This was so nearly finished that the courts were expected to move into

it in January, 1894, and the assembly chambers will be ready for the next regular session of the Legislature. It is estimated to have cost \$2,250,000. Six years have been occupied in its construction. It is of stone throughout, the roofs are laid on trusses sliding on wheels, thus providing against contingencies arising from the action of heat and cold. Wainscotings are of marble; and staff, the material used in the World's Fair buildings, is largely employed in the interior decorations. The lantern is 200 feet above the street, and is intended to be surmounted by a statue. An underground railway will carry coal to the building and take away ashes and other refuse. The court rooms and legislative chambers have a ceiling 46 feet high.

**State Institutions.**—The inmates of the State Penitentiary have been employed on an irrigating canal which will water about 31,000 acres. The last biennial report of the officials gave the cost of maintenance for the term as \$168,880.60, and the cost *per capita per diem* nearly 12 cents. Since the previous report 907 prisoners had been received.

The Reform School, at Golden, numbers 180 boys. One building has been provided to be conducted on the family system, but the greater part of the inmates are housed together in the main building. The institution has 57 acres, 35 of which are cultivated, and in addition 435 acres are leased by the school.

The provision for the insane is inadequate to the demand, and in consequence many lunatics have been confined in the county jails.

A new law giving the superintendent, with the consent of two other physicians, the power to discharge cured patients, will also aid in keeping the demand for accommodations nearer to the supply. Heretofore, discharge could only be made by order of the judge of the court from which the patient was committed.

**Insurance.**—The eleventh annual report of the State superintendent, issued in July, gave the following statistics: "The amount of risks written in the State during 1892 was \$103,168,403.69, compared with \$93,519,766.16 written the previous year. The premium receipts were \$1,721,483.74. The losses paid increased from \$573,139.42 in 1891 to \$806,481.04 in 1892, and the ratio of losses paid to premiums received, from 36.51 per cent. in 1891 to 46.85 per cent. in 1892. "The number and variety of assessment, endowment, and bond companies doing business in the State are something appalling. Under our present insurance system this department has no foothold on which to base legal prosecutions against the frauds and dishonesty of these companies or associations."

**Military Department.**—An order reorganizing the military Department of Arizona under the name of the Department of Colorado, with headquarters in Denver, was issued in July. The Department of Arizona consisted of the Territories of New Mexico and Arizona, and the southern portion of California. Headquarters were at Los Angeles. The order abolished the department of Arizona, and made a new department composed of Colorado and the Territories of Arizona, New Mexico, and Utah. The reason for the change was that headquarters in Denver

would give the commandant of the department closer connection with Washington.

**State Lands.**—These lands, given by the National Government to provide a revenue for school purposes and for internal improvements, are under the control of a board consisting of the Governor, the Secretary of State, and the Superintendent of Public Instruction; 504,059 acres, principally grazing lands, are leased, yielding an annual income of something more than \$50,000. The total receipts of the board from all sources were \$265,391.74 for 1891, and \$214,314 for 1892. The board has issued an address to discoverers or prospectors for metallic ores on lands belonging to the State. It explains the provisions made by the board for securing careful adjustment of claims in granting leases. The term of a lease has been fixed at twenty years.

**Agriculture.**—The opinion of the chief chemist of the Department of Agriculture is that Colorado soil and climate are eminently fitted for the production of sugar beets. He says: "The sugar content of a beet is injured by long-continued, extremely high temperatures during the growing season. The elevated plateaus of Colorado are free from this objection. The summer days on these plateaus, while not cold, are certainly not oppressively hot, and the beets are thus preserved from injury by being baked in the sun. Another point in favor of beet culture is the fact that these plateaus in many cases can be easily irrigated. Take, for instance, a beet crop averaging 15 tons per acre. At the very lowest valuation for a poor beet containing only 12 per cent. of sugar, this crop is worth \$4 per ton or \$60 per acre. The most careful culture of the sugar beet, with the greatest care in every respect, does not cost over \$50 per acre, as has been demonstrated by the experiments at the station at Schuyler, Neb. On a larger scale this cost can be reduced to \$40 per acre. A good factory, capable of working 300 tons of beets per day, should have tributary to it from 8,000 to 10,000 acres of arable land. Of this, at least one third should be grown in beets every year.

Fruit culture is a rapidly growing industry, the climate and soil of western Colorado being specially favorable to horticulture. The orchard area in the valleys of the Uncompahgre, Gunnison, and Grand rivers has increased to thousands of acres, and the peaches of the region have already won a reputation for fineness and flavor. The western valleys are adapted to all the temperate zone fruits except the semitropical species. What gives those valleys a great advantage over most other localities in Colorado is the fact that peaches can be grown there. The climate is much milder than that of the vicinity of Denver. At present the demand for western Colorado fruit far exceeds the supply.

**Railroads.**—In his inaugural message at the opening of the session, Gov. Waite, after reviewing the progress of legislation on the railroad question since 1885, said:

The right to make tariffs and enforce their collection is inherent in any railway system, but the right directly or indirectly for any railway to rebate a portion of its tariff, and thus discriminate between its customers in the collection of its revenues, is a right which no civilized government claims and no sovereign has dared to exercise for centuries. If the Con-



gress of the United States should enact a law which established on any commodity one import duty for the city of New York and a different duty for other cities, or one duty for one firm and another duty for another firm, no matter how slight the difference, the people would resort to arms, if need be, rather than submit; yet such has been the condition of railway affairs in Colorado for years. The right to discriminate is boldly claimed and has been wantonly exercised. In certain mining districts \$8 per ton is charged freight on silver ore to Denver by the carload, and the shipper loads the cars, and this is claimed to be the lowest possible rate at which silver ore can be transported to Denver at a profit, and this is a rate which compels the bulk of the ore of an ordinary silver mine across the range "to go over the dump," as not paying shipping expenses. At the same time the same railway company mines its own coal at its own expense, loads its cars, ships it 15 miles to its own coke ovens, unloads and cokes the coal, reloads, and then transports the coke over the same mountain range and route it transports the silver ore, and sells the coke at Denver at \$5 per ton. Even in the most favored mining regions there are many mineral deposits unworked, and some entire counties in Colorado, possessed of abundant, varied, and valuable mineral resources, are undeveloped simply because the rates of railroad transportation are prohibitory. . . .

I therefore recommend to the ninth General Assembly the following:

1. The repeal of the present law providing for a railway commission.

2. A new act for a railway commission, with 3 commissioners empowered to hear and determine complaints without recourse to the courts, and to revise the rates of the carriage of passengers and freight.

3. That the system of pooling as now in force among the railways of the State be made illegal.

4. That the issuing by any railroad company of any pass or free ticket to, or the acceptance of or traveling upon such pass or free ticket by, any State, district, county, or municipal official be made a penal offense.

The total mileage of railroads at the beginning of the year was 4,422. Contracts were let in June for an extension of the Missouri Pacific from Pueblo to Durango, 450 miles, shortening the journey between those points by about 300 miles. This line is expected ultimately to reach the Pacific coast.

Preparations have been made at Denver for the building of the Denver, Salt Lake and San Francisco road. Two routes will probably be surveyed and their advantages compared before a decision is made.

Work has begun on the Cripple Creek Railroad, and it is hoped that it will be ready to carry freight by the 1st of April. It will be 22 miles long, will run from Cripple creek to the Santa Fé junction at Florissant, connect with the local mines by spurs, and will cost \$600,000.

On the Colorado Midland road a tunnel has just been completed between Busk and Ivanhoe which cost \$1,000,000, and which substitutes 2 miles of track for 10, and gives certain transit for freight and passengers every day of the year over the highest mountain range on its line. The work has progressed steadily for 3 years and 10 days, with twenty hours to the day, and the tunnel is 10,800 feet above sea level.

**Mining.**—The report of the director of the mint shows that Colorado is first among the mining States and Territories in the amount and value of output. In 1892 the silver product had fallen off in each of the producing States

and Territories except Colorado and Montana. In the last named the increase was 1,000,000 ounces over the preceding year, while in Colorado the increase was 3,000,000 ounces. Under the division of the report relative to the distribution of silver products of the United States for 1892, as to the sources of the production, it is shown that Colorado produces 10,500,000 fine ounces from milling ores, 12,500,000 from lead ore, and 1,000,000 from copper ore, making a total of 24,000,000 ounces. The report further shows that the aggregate product of gold and silver reported from Colorado was as follows: Gold, 267,950 fine ounces, valued at \$5,539,021; silver, 24,347,017 fine ounces, valued at \$31,478,927; making a total of \$37,017,993.

The bill that passed Congress, suspending for the year 1893 the law requiring that \$100 worth of labor or improvements be placed on each claim located until the patent has been issued for it, on pain of forfeiture of the claim, does not meet with unmixed approval. It is regarded as of more value to speculators than to miners and resident prospectors. The latter class had nearly completed their annual work before the passage of the bill, Nov. 3. The miners usually receive considerable wages for work done for nonresident prospectors. Moreover, it is by the present clause of forfeiture by neglect to work out the assessment that unworked claims come into the possession of industrious men who push them forward to production. By the provisions of the bill, the surface of a district might be so tied up that no development need be carried forward.

The uncertainty regarding the silver market occasioned great distress in silver-mining districts; but many of the camps that were closed in the summer resumed operations late in the year, some of them, if not all, meeting the emergency by reducing wages and securing reductions in expenses of transfer, freight charges, etc. In all instances where the resumption has occurred it has been on agreement between workmen and mine owners that as soon as the price of silver goes up the wages are to be restored.

Meantime the gold camps are gaining. The vast increase in the output of the mines shows that a large percentage of the men thrown out of employment in the silver mines are now employed in digging the yellow metal; while in all the auriferous districts prospecting is going on extensively, new strikes are being made, and work on old properties is being resumed.

The gold output of Cripple Creek for the year will, according to estimates, amount to \$5,000,000. Gold has been discovered near Hahn's Peak, in Routt County.

The Golden Fleece, near Lake City, which was struck two years ago, turns out to be one of the greatest tellurium mines in the world. Thus far the ores have yielded about equal values in silver and gold.

A new camp, on Bear creek, in San Juan County, attracted many prospectors in the summer. The creek is one of the head streams of the Rio Grande. The new gold find is in the basin at timber line, in which this creek heads.

Across the range, on the San Juan side, several rich veins of gray copper have been located. The ore is all dry smelting.

The gold deposits at the Denver mint in July exceeded by \$60,000 the deposits in any previous month in the history of the mint.

The total product of coal in 1892 amounted to 3,770,000 tons; the number of men employed was about 7,500. About one third of the coal mined is sent to other States. The annual increase in the amount mined is about 20 per cent.

The entire value of the mineral products of the State has increased since 1876 from \$6,000,000 to \$33,000,000.

**Navigation of the Colorado.**—The first attempt to navigate the upper river by steamboat was made in 1891, and failed on account of an accident to the boat. Another attempt, in 1893, was more successful, proving that the river is navigable for 130 miles between Green river and Cataract cañon. It is proposed to run a passenger boat regularly for the accommodation of tourists. Should the navigation of the river be found entirely feasible, it will be of great assistance in opening communication with distant mining districts inaccessible by railroad.

**Land-Claims.**—An important suit, involving the title to 113,000 acres of land near Denver, was settled by decision of the Supreme Court in April. The decision confirms the title of the present holders, who had bought of the Kansas Pacific Railroad Company, the land having been granted originally to that corporation by the United States Government.

Much excitement was caused in the San Luis valley, in April, by the filing of a claim to nearly all the land in the valley. What is known as the Conejos grant was made in 1833 by Francisco Serracino, political chief or governor of New Mexico, to Geledon Valdez *et al.*, for land on the Conejos river. Owing to the Indian war, which lasted until 1841, the grantees were prevented from taking possession. On Oct. 12, 1842, possession was given to 83 heads of families. The land is bounded on the north by the Garita hill, on the south by the San Antonio mountain, on the east by the Rio Grande, and on the west by the Sierra Montosa.

A colony was brought from Holland not long since by the Netherlands-American Land and Immigration Company, and settled in the San Luis valley, at Alamosa, Conejos County. Complaints having been made that the colonists were defrauded by the company, the district attorney of the county was directed to make an investigation into the facts. The report sustained the charges, finding that the articles of incorporation of the company were defective and not in conformity with the law of the land, so that it had no authority to do business in the State.

The report was sent to the minister for the Netherlands at Washington. Meantime 30,000 acres of land had been purchased near Sterling for another colony, which was prepared to set out from Holland to take possession of it.

**The Utes.**—In a letter to the President, in May, the Governor attributes the trouble with the Indians to the fact that they are allowed to hunt, off the reservations. The letter says: "The Indians take their vacation in an annual hunt and, contrary to their custom before they were restricted to reservations, they destroy all game in these excursions. They also frequently destroy the cattle of the settlers. Of course

they can not consume the meat they kill, and they make no such pretense.

**Sinking of a Town.**—Portions of the town of Louisville, a large coal-mining camp in Boulder County, were reported to have sunk two feet in October, in consequence, it is supposed, of the giving way of timbers in the mines beneath the town. The same thing occurred a few years ago, embracing a large tract of land. East of the town where it happened there was nothing but a railroad to be disturbed, and that kept going down until the company was compelled to raise the track several feet. In the present case the situation is more serious, since the houses are partially ruined and the occupants feel unsafe, as there is probability that the ground will settle several feet before the collapse underneath has ended. One of the serious features of the situation is the condition of the wells. By the cracking of the earth the water runs out of the bottom of the wells into the old workings of the mine.

**Legislative Session.**—The ninth General Assembly numbered in the Senate 15 Republicans, 8 Democrats, 4 Populists, 7 People's-Party Democrats, and 1 Independent; and in the House 33 Republicans, 5 Democrats, and 27 Populists. It met on Jan. 4, and adjourned on April 6—two days after the ninety-day limit fixed by law. A large number of measures, mostly appropriation bills, were passed during the two days preceding adjournment, but the Lieutenant-Governor and the president *pro tem* of the Senate refused to sign them, and the Attorney-General decided that they could not be regarded as legally passed.

The Governor vetoed a bill changing the law of 1891 in regard to incorporation and regulation of trust companies, limiting their liability to the amount of their shares of stock at the par value thereof, on the ground that he was opposed to either enlarging or diminishing the liability of corporations except for good cause shown. He also refused to sign a bill relating to the issuance of bonds by cities and towns, because it provided that they might bond for the purchase of water works or supply or refund such bonded indebtedness by a submission of the question of issuing such bonds to a vote of the qualified electors, either at a regular or special election, thus making the question of incurring bonded indebtedness of any city or town depend upon the result of a special election.

The Legislature passed a law entitled

An Act to repeal an act concerning railroads and railroad corporations, prescribing the duties thereof; providing for the appointment of a railroad commission and prescribing the powers and duties of the same.

This, too, was vetoed by the Governor, on the ground that though the act sought to be repealed is admittedly defective, it is better than no law at all for State regulation of railroads.

The Legislature passed the repealing act over the veto of the Governor.

Another bill was passed "providing that companies, firms, or persons issuing policies against fires must, before receiving authority to transact business in the State, deposit \$20,000 securities with the Secretary of State; providing a similar precaution where life-insurance policies



are issued, fixing the deposit at \$50,000 in securities; where accident policies are issued, fixing the deposit at \$20,000; and where various kinds of policies are issued, fixing the deposit at \$50,000; and providing that guarantee companies shall make a deposit fixed at \$5,000."

A new county—Mineral County—was formed from parts of Hinsdale and Rio Grande Counties. It includes the town of Creede.

Among the measures passed—were one granting a new charter to the city of Denver, one to exempt from taxation property, real and personal, of Grand Army of the Republic posts, and one to prevent short weight in coal; to regulate the sale of oleomargarine, and requiring a license; also a bill making Saturday afternoon a legal holiday in the months of July and August; a bill forbidding insurance on the lives of children under ten years of age; making kindergartens a part of the public-school system; a bill forbidding the employment of detectives in difficulties between employers and employees, and one regulating the granting of divorces. This does not change the causes for which divorce is granted, but provides for greater care and certainty in notifying the party against whom the action is brought. A bill was passed providing that after the year 1900 no person may vote unless he knows how to read and write. This does not prevent voters who can not read and write and who can vote now from voting. Some amendments were made to the election laws, providing among other regulations, for the grouping of candidates on one ballot, with the names of the party represented by each candidate beside his name. It also provides for spaces in which to write names of candidates not printed on the ballot; and allows a candidate to accept a nomination from but one party.

Other bills passed and signed were the following:

To make gold and silver coin a legal tender for the payment of all debts contracted between or payable to any citizen of the State.

Directing the Treasurer and Auditor to transfer upon the books of their respective offices to the general fund of 1893 any unexpended balance standing to the credit of the Ute War debt fund.

Transferring certain unexpended balances to the general revenue fund which stand to the credit of the Bureau of Immigration cash fund, the military poll fund, the saline land permanent fund, and the saline land income fund.

Amending section 12, chapter liv of the General Statutes, relating to the commitment of children to the State industrial school. This fixes the minimum age for admission at ten years.

A memorial was passed requesting the Senators and Representatives of the State in Congress to "do all in their power to secure legislation that will establish a water-storage system to save the water going to waste in the irrigating section of the West"; one favoring the election of United States Senators by direct vote of the people; and one protesting to Congress against the setting apart and the reserving of certain lands covering the sources of Ralston, Clear, and Bear creeks, in Jefferson, Clear Creek, and Gilpin Counties, on the ground that such reservation would interfere with the mining interests; and

a request to the President to open mineral lands in the Uncompahgre Ute reservation to entry.

An attempt was made to impeach the State Auditor, on the ground of an alleged pre-election agreement on the part of the Auditor to reappoint the deputy insurance commissioner, on condition that the deputy should gain the support of the insurance men of the State for him. The Auditor's defense was, that before the election took place he learned that the agreement was in violation of the corrupt-practices act of the eighth General Assembly, and that he then withdrew entirely from the compact. As a matter of fact, the deputy commissioner was not reappointed. The Senate Committee on Elections took evidence on the subject, and the House appointed a committee of five to take testimony for the purpose of bringing impeachment proceedings. The case does not appear to have proceeded further.

**Silver Convention.**—A State mass meeting of the friends of silver was called in Denver on July 11. Nearly every town, village, and mining district in the State was represented. The sentiments of the convention were embodied in an address to the people of the United States, of which 1,000,000 copies were ordered printed. Of the local effects anticipated from the demone-tization of silver the address said:

The silver-mining States and Territories, embracing 1,000,000 square miles of the continent, with 2,000,000 Americans inhabiting them, depend peculiarly upon silver mining for their prosperity. That industry is the very heart from which nearly every other industry receives support.

The reduction of the price of silver to about 70 cents has shut down 99 per cent. of the silver mines of the country, and the smelters must soon follow their example. There are in Colorado to-day 15,000 idle miners, who know not where to turn if work is not resumed. There will soon be added to this idle army of labor 4,000 men from the smelters. The stone quarries are nearly all shut down, the railway companies are laying off train crews by the score, the foundries are nearly all out of orders, the farmers and fruit growers will be barely paid for the cost of saving their crops, and the merchants are countermanding their Eastern orders.

If the silver mines shall remain closed, one half of the American output of lead must be lost. The greatest bulk of the lead product is taken from silver-bearing ores. It requires the one metal, supplemented by the other, to remunerate the lead-silver miner. If the market for silver is broken down, the lead can not be produced.

Not less than 55 per cent. of the gold product of the country depends upon the maintenance of the silver industry. The placer or creek washings, the earliest and most prolific sources of our gold supply, are practically exhausted. That metal is now taken from leads—one half of it from silver leads—as a by-product of silver mining, which, unless the mines may be profitably worked for silver, will never be added to the world's store of gold.

**Labor Convention.**—The State Labor Convention met in Denver in July. The address issued by the silver convention was heartily approved, and resolutions were adopted denouncing private monopoly of land; declaring for public ownership and control of railroads, telegraphs, gas and electric lighting, water works, and irrigating ditches; demanding reform in taxation; calling for a State convention to revise the Constitution; pledging support to the

woman suffrage movement; asking for free textbooks, and the enactment of the following laws:

Regulating the employment of children; regulating the weighing and screening of coal at mines; to secure the more efficient collection of wages; establishing free employment agencies; to punish the obtaining of labor under false pretenses; for the prohibition of all detective agencies not under the direct control of legal authority, and for the prohibition of all private armed forces; for more efficient inspection of metalliferous mines, and giving the inspector power to enforce its provisions; giving the right of redemption from the foreclosure of trust deeds, and a constitutional amendment securing the initiative and referendum in our system of enacting laws.

In reference to legislative candidates this resolution was adopted:

*Resolved*, That we recommend that the legislative committees of our organizations prepare bills for acts covering our demands and present the same to all candidates for our votes; and that we will support none who will not pledge themselves to vote for such measures without amendment or evasion, and condemn all who have or will obtain their election through false pretenses and pledges.

**Woman Suffrage.**—The question of adopting an amendment to the State Constitution extending to women the right of suffrage on equal terms with men was submitted to voters at the November elections, with a result in its favor by a majority of about 5,000. The Republicans and Populists divided the State at the local elections.

**COMMERCE AND NAVIGATION OF THE UNITED STATES.** The total value of the foreign trade of the United States for the fiscal year ending June 30, 1893, was \$1,714,066,116. This was \$143,660,794 less than that of the previous year—the greatest in the history of the country—and \$15,330,890 less than that of 1891, but it exceeded by \$66,927,023 that of 1890, which was greater than the commerce of any preceding year. The total value of the merchandise imported during the fiscal year of 1893 was \$866,400,922; while that of the domestic and foreign exports was \$847,665,194, leaving a balance adverse to the United States of \$18,735,728, against a favorable balance of \$202,875,686 in 1892, and of \$39,564,614 in the preceding year. Including gold and silver coin and bullion the total imports for 1893 were \$910,768,555, against \$897,057,002 in 1892; while the total exports for 1893 were \$997,083,357, against \$1,113,284,034 in 1892.

**Imports.**—The values of the principal articles and classes of articles exempt from duty imported into the United States during the twelve months ending June 30, 1893, compared with the values for the preceding year, are shown in the following table:

ARTICLES FREE OF DUTY.	1892.	1893.
Animals.....	\$1,675,808	\$1,425,720
Articles, produce of U. S. returned.....	4,347,920	4,649,055
Art works.....	306,069	428,946
Asphaltum.....	387,599	240,996
Bark, hemlock.....	256,346	245,349
Bolting cloths.....	279,680	281,430
Books, maps, engravings, etc.....	1,880,668	2,077,589
Alizarine.....	1,029,143	1,125,436
Argol, or crude tartar.....	2,816,525	2,341,575
Cinchona bark.....	301,385	197,856
Cochineal.....	55,888	52,572
Logwood and other dye woods...	1,378,601	1,397,706

ARTICLES FREE OF DUTY.	1892.	1893.
Gums.....	\$6,089,546	\$6,915,008
Indigo.....	1,772,507	3,137,511
Licorice root.....	1,601,028	1,688,716
Chloride of lime.....	1,839,640	2,218,121
Mineral waters.....	436,241	547,049
Opium, crude.....	1,029,203	1,186,824
Potash, all salts of.....	2,388,688	2,781,588
Quinia, salts of.....	572,078	579,199
Soda, nitrate of.....	2,976,816	3,062,715
Sulphur, crude.....	2,524,406	2,805,464
Vanilla beans.....	808,696	768,985
All other chemicals and drugs.....	4,512,950	6,269,764
Chicory root, raw, unground.....	98,179	184,070
Cocoa.....	3,221,041	4,077,501
Coffee.....	126,801,607	76,688,988
Cork, wood or bark, unmanufactured.....	1,368,244	1,641,294
Cotton, raw.....	3,217,521	4,688,799
Diamonds, rough, etc.....	1,096,587	1,066,586
Sago, tapioca, etc.....	257,739	327,578
Fertilizers.....	1,431,285	1,281,969
Bananas.....	5,000,632	5,361,187
Cocoanuts.....	917,564	852,509
Currants.....	1,209,119	1,185,537
All other fruits and nuts.....	1,970,634	2,183,084
Furs, undressed.....	3,352,429	4,049,173
Hair.....	1,685,562	2,005,796
Straw, chip, etc., for hats and bonnets.....	1,897,190	2,262,472
Goat skins.....	11,509,127	12,414,988
All other skins.....	15,149,206	14,605,787
Personal effects of immigrants, etc.....	2,921,893	3,512,667
India rubber and gutta-percha.....	19,838,090	17,964,667
Needles.....	337,272	369,465
Shot-gun barrels.....	170,084	117,775
Ivory.....	893,139	1,083,539
Ivory, vegetable.....	114,753	273,894
Mattings for floors.....	1,637,478	1,665,106
Oils, fixed.....	1,872,017	2,208,199
Oils, volatile.....	1,457,227	1,888,062
Ores, gold-bearing.....	249,804	894,999
Ores, silver-bearing.....	9,656,761	11,100,747
Paper stock.....	5,448,268	6,272,298
Platinum.....	505,205	639,445
Plumbago.....	726,648	866,809
Seeds.....	1,485,044	2,065,548
Silk, unmanufactured.....	25,059,825	29,836,986
Spices, unground.....	2,740,087	3,002,002
Molasses.....	2,877,744	1,992,334
Sugar, beet.....	8,081,170	12,546,509
Sugar, cane and other.....	95,761,812	102,108,587
Tea.....	14,373,222	13,587,482
Jute and jute butts.....	3,021,174	4,467,828
Manilla hemp.....	6,672,279	8,276,370
Sisal grass.....	5,187,620	6,005,484
All other vegetable fibers.....	1,597,049	1,957,236
Coir yarn.....	161,449	224,254
Tin.....	8,667,870	12,358,999
Wood.....	5,569,991	6,642,889
Rice from Hawaiian Islands.....	367,533	349,560
All other free articles.....	9,161,149	11,004,529
Total free of duty.....	\$457,999,658	\$444,544,211

The imports of animals in the above list show a decrease of \$250,083 as compared with the previous year, the entire falling off being in the item of horses, the decrease in the number of which was 608, or more than 18 per cent. Other articles and classes of articles which showed a falling off in comparison with 1893 were: Crude asphaltum, decreasing \$146,603; hemlock bark, \$7,907; cochineal, \$103,529; logwood, \$14,718; crude camphor, \$1,086; shellac, \$104,602; brimstone, \$218,942; vanilla beans, \$39,761; coffee, \$50,132,624; rough diamonds, etc., \$30,001; crude phosphates and other fertilizers, \$209,752; cocoanuts, \$65,055; currants, \$23,582; dates, \$57,719; skins other than goat, \$543,219; crude India rubber, \$1,908,977; molasses, \$885,410; shot-gun barrels, unfinished, \$52,309; essential oils, \$69,165; and tea, \$515,740. Rice from Hawaii, which is admitted free under the reciprocity treaty with those islands, shows an



increase in quantity of 984,100 pounds, but a decreased value of \$17,973.

Articles and classes of articles on the free list which show an increase in value over 1892 are: Productions of the United States returned, \$301,135; productions of American artists, \$122,878; books, maps, etc., \$196,921; chemicals, drugs and dyes, \$825,457; indigo, \$1,365,004; licorice root, \$87,688; chloride of lime, \$373,481; mineral waters, \$110,809; crude opium, \$157,621; the various salts of potash, \$392,905; salts of quinia, \$7,121; nitrate of soda, \$85,899; crude cocoa, \$796,760; cork wood, \$273,050; raw cotton, \$1,471,278; bananas, \$360,555; other fruits and nuts, \$162,450; sago, tapioca, etc., \$70,139; guano, \$10,436; undressed furs, \$696,744; hair, \$320,234; straw, chip, grass, palm leaf, etc., for hats and bonnets, \$365,282; goat skins, \$905,861; personal effects of immigrants, etc., \$570,774; crude gutta-percha, \$40,554; needles for hand sewing and darning, \$32,193; ivory, \$190,400; vegetable ivory, \$159,641; floor matting from round or split straw, including Chinese, \$27,633; fixed or expressed oils, \$336,182; gold-bearing ores, \$645,695; silver-bearing ores, \$1,443,986; crude paper stock, \$824,035; unmanufactured platinum, \$134,240; plumbago, \$139,661; seeds, \$610,504; silk cocoons, raw and waste silk, \$4,777,661; unground spices, \$261,915; beet sugar, \$4,765,339; and cane and other sugar, \$6,347,275. Among the imports of unmanufactured textile grasses and fibers istle or Tampico fiber and jute and jute butts showed a decrease of \$3,679 and \$553,246 respectively, but the entire list shows a net increase of \$2,328,796, while coir yarn increased \$62,805. Imports of tin in bars, blocks, pigs, etc., increased \$3,691,129; and unmanufactured wood, \$1,072,898; while the unenumerated free articles increased \$1,843,380. Except for the great decrease in coffee, the free imports would have exceeded those of 1892.

The following table gives the values of the principal articles and classes of articles subject to duty imported during the fiscal year ending June 30, 1893, compared with the values for the preceding year:

DUTIABLE ARTICLES.	1892.	1893.
Animals	\$2,575,813	\$3,216,475
Art works	2,080,599	2,366,765
Books, maps, engravings, etc.	2,115,417	2,117,430
Brass, and manufactures of	242,564	249,092
Barley	1,592,040	921,605
Wheat	1,955,385	707,053
Other grains and breadstuffs	1,083,983	984,032
Bristles	1,455,058	1,508,258
Brushes	797,879	814,062
Buttons and button forms	1,317,203	1,410,430
Cement	3,855,572	3,760,937
Coal-tar colors and dyes	1,614,226	2,497,943
Glycerin	831,810	893,636
Logwood extracts, etc.	326,142	295,507
Opium, prepared	547,523	446,422
Soda, caustic	1,598,902	1,344,525
Sal soda and soda ash	4,496,597	5,093,127
Soda, all other salts of	215,856	297,761
Sumac, ground	216,668	289,999
Other chemicals and drugs	4,385,578	5,112,745
Clays or earths	523,367	635,368
Clocks, and parts of	195,890	254,391
Watebas, and parts of	1,734,648	1,743,591
Coal, bituminous	4,373,079	3,614,202
Coffee (under section 3, tariff act of Oct. 1, 1890)	1,240,323	3,816,575
Copper ore	748,932	484,631
Copper, and manufactures of	396,854	459,187
Cotton cloths	4,645,667	5,797,477

DUTIABLE ARTICLES.	1892.	1893.
Clothing, cotton	\$1,261,848	\$1,682,049
Cotton knit goods	5,833,652	6,892,175
Cotton laces, edgings, etc.	11,248,239	12,471,798
Cotton thread and yarn	664,952	762,653
Other manufactures of cotton	4,669,438	6,184,141
Earthen, stone, and china ware	8,708,598	9,529,431
Eggs	522,240	392,978
Feathers	904,659	917,817
Feathers and flowers, artificial	1,833,354	1,619,101
Fish	4,585,450	4,942,172
Flax and hemp, unmanufactured	2,645,972	2,504,637
Bags and bagging	1,412,399	1,356,112
Burlaps	7,064,335	6,154,205
Cables, cordage, and twine	99,551	63,509
Yarns or threads	641,865	776,054
Other manufactures of flax, hemp, jute, etc.	287,078	230,111
Lemons	4,548,263	4,994,323
Oranges	1,210,338	1,695,469
Plums and prunes	434,271	1,162,318
Raisins	964,309	1,266,342
Almonds	1,028,671	938,054
Other fruits and nuts	3,105,476	3,604,634
Furs, and manufactures of furs	6,344,702	6,518,634
Glass and glassware	8,758,964	8,021,741
Hair, and manufactures of	114,102	162,215
Hay	715,151	964,755
Hides and skins (under section 3, tariff of 1890)	192,085	1,327,121
Hops	883,701	1,085,407
Gutta-percha, manufactures of	61,276	81,173
India rubber, manufactures of	371,580	338,435
Iron ore	2,592,461	1,242,797
Pig iron and scrap iron and steel	2,466,557	1,776,956
Tin plates, terne plates, and taggers tin	12,315,562	17,565,640
Other manufactures of iron and steel	13,688,628	15,107,138
Jewelry, and gold and silver manufactures	618,518	696,462
Precious stones and imitations of	12,354,420	15,168,746
Lead, and manufactures of	3,653,378	5,792,624
Leather	6,812,607	8,232,172
Gloves of kid or other leather	5,830,330	6,925,376
Other manufactures of leather	957,334	979,947
Malt	6,148	4,411
Malt liquors	1,709,960	1,940,370
Marble and stone	1,885,310	1,737,938
Metals, metal compositions and manufactures of	6,574,488	7,118,059
Mineral substances	242,230	318,912
Musical instruments	1,031,455	994,866
Oils	1,664,720	2,067,132
Paints and colors	1,372,052	1,466,761
Paper, and manufactures of	3,342,304	3,880,931
Perfumes and toilet preparations	464,355	540,353
Pipes and smokers' articles	418,221	437,746
Provisions and dairy products	1,796,096	2,124,593
Rice, and preparations of	2,663,350	2,440,591
Salt	713,901	692,493
Seeds	779,793	661,462
Silk, manufactures of	31,172,594	38,958,928
Soap	612,216	701,709
Spices	807,738	298,008
Brandy	889,583	918,167
Other distilled spirits	981,227	1,082,154
Sugar and confectionery	664,072	1,354,174
Tobacco, leaf	10,332,423	14,702,440
Tobacco, manufactured	2,926,051	2,916,706
Toys	2,476,132	2,833,619
Vegetables	2,383,227	3,586,639
Wines, sparkling	4,571,816	5,579,054
Wines, still, in casks	2,464,484	2,505,024
Wines, still, in bottles	1,908,203	2,121,275
Wood, and manufactures of	14,276,447	16,509,710
Clothing wools	9,523,773	7,876,676
Combing wools	1,368,654	1,466,641
Carpet and other wools	8,795,631	11,730,863
Woolen manufactures	35,565,379	38,048,515
Zinc, spelter, and manufactures of	43,568	58,743
All other dutiable articles	6,457,633	7,229,837
Total dutiable articles	\$369,402,804	\$421,356,711

The imports for 1893 exceeded those of the preceding year by \$38,998,460, the aggregate increase being in the list of articles subject to duty, which increase amounted to \$52,453,907, while the total value of free imports showed a



decrease of \$13,455,447. The increase in the volume of dutiable imports was largely in articles of dress and luxury. The total imports of cotton manufactures were \$33,560,293, an increase of \$5,236,452. The imports of silk manufactures amounted to \$38,958,928, an increase of \$7,786,034, and the increase in the imports of woolen cloths and dress goods was \$2,606,645; in kid and other leather gloves, \$1,095,496; in champagne and other sparkling wines, \$1,007,238; in jewelry and precious stones, \$2,892,270; in fruits and nuts, \$2,366,867; and in tobacco for cigar wrappers, \$3,423,963. But there was also an unusually heavy importation of tin andterne plates and taggers tin, the increase in which amounted to \$5,250,078; of potatoes, which increased \$1,880,583; and of manufactures of flax and hemp, which increased \$1,837,477. Other dutiable imports which increased in 1893 were: Cattle, increase in number, 1,083; horses, increase, 1,985; sheep, increase, 78,054; and all other animals, including live poultry; the entire list of animals showing an augmentation in value of \$640,662. Paintings and statuary increased \$336,166; books, maps, etc., \$2,013; brass and its manufactures, \$6,528; bristles and brushes, \$69,383; buttons, \$93,236; chemicals, drugs, medicines, and dyes, \$1,838,357; kaolin and other clays, or earths, \$112,001; clocks and watches, and parts of, \$67,444; and coffee, under the reciprocity clause of the tariff act of 1890, which makes it the duty of the President to suspend the free introduction of sugar, coffee, hides, etc., from any country that imposes unfair duties on the products of the United States, increased \$2,576,252. Imports of copper and its manufactures increased \$62,333; earthen, stone, and china ware, \$820,833; feathers, \$13,158; fish, \$356,722; hair and its manufactures, \$48,113; hay, \$249,604; hides and skins under the provision of suspension in the reciprocity clause of the tariff act, \$1,135,036; hops, \$201,706; manufactured gutta-percha, \$19,897; railroad iron and steel, \$12,440; iron and steel hoops and bands, \$71,984; sheet, plate, and taggers iron or steel, \$1,119,520; wire, \$76,464; chains, \$2,639; cutlery, \$213,496; machinery, \$477,645; lead and its manufactures, \$2,139,246; leather, \$1,469,565; leather manufactures other than gloves, \$122,613; malt liquors, \$230,410; marble and stone and their manufactures, \$352,128; metal compositions and manufactures not elsewhere specified, \$616,085; animal, mineral, and vegetable oils, \$402,403; paints and colors, \$94,709; paper and its manufactures, \$38,677; perfumes and toilet preparations, \$75,503; pipes and smokers' articles, \$19,525; meat and dairy products, \$328,497; soap, \$89,493; distilled spirits, \$129,209; sugar, above No. 16, Dutch standard, \$734,357; leaf tobacco other than for cigar wrappers, \$946,054; toys, \$407,487; vegetables, \$822,879; still wines, \$253,612; wood, unmanufactured, \$6,757; wood pulp, \$1,088,741; other manufactures of wood, \$1,137,765; raw wools, \$1,376,072; zinc or spelter, \$15,180; and all articles not enumerated, \$848,916.

The dutiable imports which showed a decrease were: Breadstuffs, \$2,018,711; cement, which showed an increase in quantity of 50,169.114 pounds, but a diminution of value of \$94,635;

bituminous coal, \$758,877; copper ore, \$264,301; eggs, \$129,267; artificial feathers and flowers, \$214,253; raw flax, \$81,335; and glass and glassware, \$737,223, the falling off being chiefly in silvered plate glass; India-rubber manufactures decreased \$33,145; iron ore, \$1,349,664, or more than one half; pig iron, \$312,608; scrap iron and steel, \$266,993; bar iron, \$132,897; steel blooms, ingots, etc., \$78,433; firearms, \$326,235; other manufactures of iron and steel, \$77,113; barley malt, \$1,737; bronze manufactures, \$72,509; musical instruments, \$36,619; rice, \$222,759; salt, \$21,408; seeds, \$118,331; spices, \$9,730; confectionery, \$44,255; manufactured tobacco, \$9,345; ready-made clothing, \$302,716; and shawls, yarns, and other manufactures of wool not specified, \$135,221.

The value of the merchandise imported direct from foreign countries was \$815,059,709, an increase of \$29,663,945 over 1892; and the value of that coming through exterior ports without appraisement, \$51,341,213, an increase of \$9,334,515. The value of the merchandise entered for immediate consumption was \$758,003,562, and of that entered for warehouse, \$108,397,360. The value of the imported merchandise remaining in warehouse June 30, 1893, was \$40,432,825, against \$29,575,072 in 1892.

**Exports.**—The values of the articles and classes of articles of domestic production exported during the year ending June 30, 1893, compared with the values for the preceding year, are given in the following table:

ARTICLES.	1892.	1893.
Agricultural implements.....	\$3,794,983	\$4,657,883
Animals.....	36,493,221	27,527,985
Art works.....	422,238	210,592
Bark for tanning.....	239,708	232,269
Blacking.....	221,116	241,996
Bones, hoofs, horns, etc.....	218,639	319,248
Books, maps, and engravings...	1,943,228	1,808,578
Brass, and manufactures of....	528,756	519,435
Breadstuffs.....	299,363,117	200,812,654
Bricks.....	87,702	196,159
Broom corn.....	218,133	163,105
Brooms and brushes.....	181,110	241,343
Candles.....	165,933	155,408
Carriages and horse cars.....	1,944,170	1,605,501
Cars, railroad.....	1,320,265	969,871
Casings for sausages.....	875,675	1,409,280
Chemicals, drugs, medicines, and dyes.....	6,693,855	6,754,068
Clocks and watches, and parts of.	1,229,616	1,204,181
Coal, anthracite.....	3,419,060	4,854,604
Coal, bituminous.....	5,229,498	5,149,534
Coffee and cocoa, ground or prepared, and chocolate.....	70,651	93,292
Copper ore.....	6,036,777	4,591,838
Copper, manufactured.....	7,226,892	4,525,578
Cotton, Sea Island.....	1,591,464	1,758,756
Cotton, other raw.....	256,869,777	187,012,689
Cotton cloths, colored.....	2,484,260	2,302,462
Cotton cloths, uncolored.....	8,673,663	6,306,022
Cotton clothing.....	433,102	452,356
Other cotton manufactures.....	1,635,152	2,243,515
Earthen and china ware.....	237,431	226,806
Eggs.....	82,374	83,207
Fertilizers.....	2,657,120	3,927,343
Fish.....	4,522,763	4,750,769
Flax, hemp, and jute manufactures.....	1,998,663	1,778,746
Fruits, including nuts.....	6,626,145	3,918,799
Furs and fur skins.....	3,586,339	3,699,579
Glass and glassware.....	942,302	973,827
Glucose.....	2,272,779	2,204,216
Glue.....	66,403	74,722
Grease and all soap stock.....	1,293,598	1,067,723
Gunpowder.....	108,276	105,547
Other explosives.....	752,079	755,966
Hair, and manufactures of.....	370,169	459,648
Hay.....	582,838	519,640



ARTICLES.	1892.	1893.
Hides and skins.....	\$1,223,595	\$1,497,003
Honey.....	75,043	15,115
Hops.....	2,420,502	2,695,567
Ice.....	53,814	41,702
India rubber and gutta-percha, manufactures of.....	1,416,067	1,609,406
Ink, printers' and other.....	145,886	118,450
Instruments and apparatus.....	1,388,117	1,345,621
Iron and steel, and manufactures of.....	28,800,980	30,106,482
Jewelry, and manufactures of gold and silver.....	1,026,188	881,893
Lamps and lighting apparatus..	538,304	561,353
Lead, and manufactures of.....	166,078	316,943
Leather, and manufactures of..	12,034,781	11,912,154
Lime and cement.....	115,205	166,381
Malt liquors.....	657,934	665,538
Marble and stone, and manufactures of.....	707,536	856,509
Matches.....	73,666	67,974
Musical instruments.....	1,164,656	1,824,107
Naval stores.....	7,989,933	7,257,301
Oil cake and oil-cake meal.....	9,713,204	9,658,773
Animal oils.....	978,638	535,816
Mineral oils, crude.....	5,101,540	4,567,391
Mineral oils, refined.....	39,704,152	37,574,667
Vegetable oils.....	5,334,955	4,565,355
Ore, gold and silver.....	39,325	225,524
Paints and colors.....	709,357	700,308
Paper, and manufactures of....	1,382,251	1,540,836
Paraffin and paraffin wax.....	3,965,263	4,515,584
Perfumery and cosmetics.....	404,706	345,841
Plated ware.....	369,478	322,016
Provisions.....	140,362,159	138,401,591
Quicksilver.....	149,798	204,908
Seeds.....	6,252,282	3,993,729
Silk, manufactures of.....	152,150	161,673
Soap.....	1,063,207	1,007,233
Spermaceti.....	90,342	105,012
Spirits, distilled.....	2,401,117	2,724,057
Starch.....	612,531	707,093
Stationery, other than paper....	592,020	597,169
Stereotype and electrotype plates	47,912	62,722
Straw and palm-leaf manufactures.....	65,853	155,733
Sugar and molasses.....	1,935,934	2,303,376
Tin, manufactures of.....	225,118	223,441
Tobacco, unmanufactured.....	20,670,045	22,891,899
Tobacco, manufactured.....	4,069,380	4,050,555
Toys.....	124,869	109,890
Trunks and traveling bags.....	171,304	147,335
Varnish.....	293,059	253,403
Vegetables.....	1,893,145	1,897,997
Vessels sold to foreigners.....	257,385	124,132
Vinegar.....	11,690	12,177
Wax, bees'.....	31,898	22,043
Whalebone.....	427,462	543,045
Wine.....	439,080	421,547
Wood, and manufactures of....	25,790,571	26,666,439
Wool, raw.....	30,664	14,803
Woolen manufactures.....	367,737	326,055
Zinc ore.....	114,639	5,990
Zinc, manufactures of.....	765,567	610,709
All other unmanufactured articles.....	1,034,242	902,773
All other manufactured articles.	1,852,857	2,003,879
Total domestic exports.....	\$1,015,732,011	\$831,030,785

The total domestic exports for 1893 were \$184,701,226 less than those for 1892; yet, notwithstanding this great falling off, they exceeded the exports of 1889 and every preceding year, with the single exception of 1881. The decline first showed itself in July, 1892, the opening month of the fiscal year of 1893, and continued without break through the first eleven months. In June an increase in the exports of iron and steel, leather, and tobacco brought the figures for that month above those of the corresponding month in 1892 by \$300,011. The decrease in the exports for 1893 is to be found chiefly in the items breadstuffs and raw cotton, the aggregate decline in which reached \$168,740,259. Of breadstuffs and feed, as well as cotton, the crops

grown in the United States in 1892 were much lighter than those of 1891. The total wheat crop of 1891 amounted in round numbers to 612,000,000 bushels, whereas in 1892 it was 520,000,000 bushels; the corn crop in 1891 was over 2,000,000,000 bushels, and in 1892 it was 1,675,000,000; the crop of oats in 1891 was 650,000,000 bushels, and 615,000,000 in 1892; the rye crop of 1891 was 33,000,000 bushels, and that of 1892 31,000,000 bushels; and the potato crop of 1891 reached 240,000,000 bushels, against 160,000,000 in 1892. The crop of cotton grown in 1891 amounted to 9,000,000 bales, but only 7,750,000 bales were produced in 1892.

The values of the breadstuffs exported during the past three years are given in the following table:

KINDS.	1891.	1892.	1893.
Barley.....	\$699,203	\$1,751,445	\$1,468,843
Bread and biscuit...	538,847	775,596	752,353
Corn.....	17,652,687	41,590,460	24,587,511
Cornmeal.....	946,977	919,961	793,081
Oats.....	405,708	3,842,559	951,920
Oatmeal.....	221,316	555,957	160,660
Rye.....	212,161	11,432,160	1,002,796
Rye flour.....	18,185	22,461	10,290
Wheat.....	51,420,272	161,399,132	93,584,970
Wheat flour.....	54,705,616	75,362,233	75,494,847
All other.....	1,030,638	1,711,103	1,555,883
Total.....	\$128,121,656	\$299,363,117	\$200,312,654

Every item set forth above, except wheat flour, which increased \$132,064, shows a decline in the value exported in 1893, as compared with that in 1892. Barley and bread and biscuit show an increase in quantity of 235,192 bushels and 134,342 pounds respectively, but a decline in their respective values of \$282,602 and \$23,243. All others show a decrease in quantity as well as in value. The heaviest decrease is in wheat, amounting to 40,159,242 bushels, and in value \$67,864,162; and corn comes next, with a decrease of 29,414,575 bushels and \$17,002,949. Rye decreased 10,564,258 bushels and \$10,429,364; oats, 7,044,435 bushels and \$2,890,639; oatmeal, \$395,297; corn meal, \$126,880; rye flour, \$12,171; and unenumerated articles in the bread-stuff class, \$155,220. Cotton showed a decrease of 1,460,191 bales or 723,104,685 pounds in quantity, and \$69,689,796 in value. Other articles and classes of articles which decreased were: Cattle, 107,513 in number and \$9,066,667 in value; mules, 331 in number and \$28,313 in value; sheep, 9,700 in number and \$34,711 in value. Horses, while showing a decrease of 259 in number, had an increased value of \$107,419; and hogs, with a decrease in number of 4,588, showed an increased value of \$33,081. Paintings and statuary decreased \$211,346; tan bark, \$7,439; books, maps, etc., \$134,355; brass and its manufactures, \$9,321; broom corn, \$55,028; candles, \$10,530; carriages and horse cars, \$338,369; railroad cars, with a number increased 121, \$350,394; acids, \$16,216; potash and pearl-ash, \$67,791; ginseng, \$10,601, with an increase in quantity of 22,289 pounds; sundry roots, herbs, and barks decreased \$4,029; clocks, and parts of, \$58,450; bituminous coal, notwithstanding an increase of 73,060 tons, decreased \$79,964; copper ore decreased 1,715 tons and \$1,445,439 in value; copper ingots, bars, etc., 18,811,272 pounds, and \$2,746,839 in value; uncolored cot-



ton cloths, 42,162,865 yards, \$2,367,641; earthen and stone ware, \$16,390; cured codfish, haddock, hake, and pollock increased 417,749 pounds, but declined in value \$36,724; pickled mackerel decreased 1,035 barrels, and in value \$13,628; pickled herring, 838 barrels, \$2,821; other pickled fish, 6,527 barrels, \$18,800; salmon, \$29,450; oysters, \$119,192; other shellfish, \$106,236; other fish, \$54,751; flax, hemp, and jute bags, \$47,023; cordage, \$230,225; other manufactures of hemp, etc., \$88,735; dried apples decreased 18,075,244 pounds, and in value \$806,017; apples, 530,729 barrels, \$1,309,989; canned fruits, \$421,160; other fruits, \$214,041; glucose, \$68,563; grease and other soap stock, \$230,875; gunpowder, \$2,729; hay, \$63,198; honey, \$62,933; ice, \$12,112; printers' and other inks, \$27,406; scientific instruments, including telegraph, telephone, and other electric apparatus, etc., \$42,496; bar iron decreased 86,745 pounds, and in value \$12,042; castings, \$218,305; firearms, \$130,357; steel ingots, bars, and rods, 301,952 pounds, \$3,180; wrought nails and tacks increased 244,234 pounds, but decreased in value \$2,146; printing presses decreased \$203,415; sewing machines, \$657,546; fire engines, \$6,305; stoves and ranges, \$13,578; jewelry and manufactures of gold and silver, \$144,295; patent leather, \$3,951; sole leather, \$591,492; boots and shoes, \$324,220; harness and saddles, \$68,723; matches, \$5,692; in naval stores, rosin, spirits of turpentine, and turpentine and pitch showed a considerable increase in quantity, while tar alone slightly decreased, but the aggregate value of the class decreased \$702,632; oil cake and meal decreased 23,982,652 pounds, and in value \$24,431; lard oil decreased 420,763 gallons, and in value \$159,988; sperm oil, 25,551 gallons, \$41,786; other fish oils, 738,477 gallons, \$203,254; other animal oils, 66,688 gallons, \$37,844; crude mineral oils increased from 103,592,767 gallons in 1892 to 111,703,508, but decreased in value \$534,449; refined illuminating oil increased from 564,896,658 to 642,239,816 gallons, but decreased in value \$1,821,820; lubricating and heavy paraffin oil decreased from 33,591,076 gallons in 1892 to 32,432,857, and in value \$464,458; tar and residuum from distillation decreased 388 barrels, and in value \$4,999; naphthas and lighter products of mineral oils increased 4,576,027 gallons, and in value \$161,798, but the entire list of manufactured products showed a net decrease of \$2,129,485. Cotton-seed oil decreased from 13,859,278 gallons in 1892 to 9,462,074, and decreased in value \$1,054,729; paints and painters' colors decreased \$9,549; perfumery and cosmetics, \$59,665; plated ware, \$47,462. In the class provisions, which comprises the meat and dairy products, canned beef decreased from 87,028,084 pounds, valued at \$7,876,454, in 1892, to 79,089,493 pounds, valued at \$7,222,824, in 1893; fresh beef, from 220,554,617 pounds, valued at \$18,053,732, to 206,294,724 pounds, valued at \$17,754,041; salted or pickled beef, from 70,204,736 pounds, value \$3,987,829, to 58,423,963 pounds, value \$3,185,321; other cured beef, from 953,712 pounds, value \$92,524, to 898,920 pounds, value \$87,776; and tallow from 89,780,010 pounds, value \$4,425,630, to 61,819,153 pounds, valued at \$3,129,059. Among hog products, exports of bacon decreased from 507,-

919,830 pounds, valued at \$39,334,933, in 1892, to 391,758,175 pounds, valued at \$35,781,470, in 1893; salted pork decreased from 80,336,481 pounds, value \$4,792,049, to 52,459,722 pounds, value \$4,116,946; lard decreased in quantity from 460,045,776 pounds in 1892, to 365,693,501 in 1893, but showed an increased value in 1893 of \$1,442,372; hams showed an increase from 76,856,559 pounds, value \$7,757,717, in 1892, to 82,178,154 pounds, value \$9,933,096, in 1893; and fresh pork increased from 377,746 pounds, value \$30,246, to 912,644 pounds, value \$79,317. Shipments of poultry and game increased \$4,150; and other meat products, not specified, increased \$25,261. Of the dairy products exported, butter decreased from 15,047,246 pounds in 1892, value \$2,445,878, to 8,920,107 pounds, value \$1,672,690; and cheese, from 82,100,221 pounds, value \$7,676,657, to 81,350,923 pounds, value \$7,624,648; while milk showed an increase of \$37,797 in value. In the exports classed as seeds, clover decreased from 19,532,411 pounds in 1892, value \$1,636,671, to 8,189,553 pounds in 1893, value \$988,029; cotton seed, from 12,149,261 pounds, value \$86,549, to 4,519,327 pounds, value \$35,809; flaxseed or linseed, from 3,613,187 bushels, value \$3,915,547, to 1,837,370 bushels, value \$2,195,374; timothy decreased in quantity from 10,313,074 pounds in 1892, to 7,077,131 pounds in 1893, but the value increased from \$381,651 in 1892 to \$504,937 in 1893; while other seeds showed an increase in value of \$37,716. The amount of soap exported decreased in quantity 2,888,056 pounds, and in value \$55,974. Under the head of distilled spirits, alcohol decreased from 1,440,219 proof gallons in 1892, value \$475,937, to 162,181 proof gallons in 1893, value \$52,328; brandy, from 216,696 proof gallons, value \$178,294, to 123,518 proof gallons, value \$90,731; rum, from 773,713 proof gallons, value \$921,913, to 647,415 proof gallons, value \$778,006. Exports of molasses and sirup decreased 969,928 gallons in quantity, and in value \$64,745; tin manufactures decreased 1,672; cigars decreased \$19,549, and cigarettes increased \$133,060, while the entire list of tobacco manufactures exported showed a net decrease of \$18,825. Toys decreased \$14,979; trunks and traveling bags, \$24,469; varnish, from 215,266 gallons, value \$293,059, to 210,067 gallons, value \$285,400. The aggregate value of the vegetables exported in 1893 was practically unchanged from the previous year, though there was a decrease of 248,059 bushels in beans and peas, and an increase of 288,698 in potatoes. The steam-vessel tonnage sold to foreigners amounted to 321 tons, value \$92,375, in 1893, against 1,510 tons, value \$246,200, in 1892; the sailing-vessel tonnage amounted to 3,181 tons, value \$31,757, against 1,065 tons, value \$11,685, in 1892. Exports of beeswax showed a decrease of \$9,850; of wine, a decrease of \$17,483; of raw wool, a decrease in quantity of 110,598 pounds, and in value of \$15,856. Of the exports of woolen manufactures, carpets and certain unenumerated articles show an increase, but flannels and blankets and wearing apparel declined, and the net decrease in the list is \$41,682. Zinc ore decreased \$108,649, and manufactured zinc, \$154,858. All other unmanufactured articles not enumerated decreased from \$1,034,242 in 1892 to \$902,773, in 1893.



The only articles or classes of articles which exhibited any conspicuous increase in the quantity and value exported during the fiscal year of 1893 were agricultural implements, anthracite coal, fertilizers, iron and steel manufactures, leaf tobacco, oleomargarine, musical instruments, and sausage casings. Among agricultural implements, reapers and mowers, as in previous years, take the lead, showing an increase over 1892 of \$500,959; plows and cultivators increased \$397,735; and other implements, \$114,736. The exports of anthracite coal were 1,073,111 tons, value \$4,854,604, against 808,277 tons, value \$3,419,660, in 1892. The quantity of fertilizers was 460,062 tons, value \$3,927,343, against 251,104 tons, value \$2,657,120, in 1892. Of the exports of iron and steel, pig iron increased from 15,940 tons, value \$289,915, in 1892, to 20,068 tons, value \$335,339, in 1893; band and scroll iron increased \$3,722; car wheels, \$3,175; cutlery, \$7,685; locks, hinges, and other builders hardware, from \$2,309,688 to \$2,648,919; machinery, from \$10,229,293 to \$10,467,091; cut nails and spikes, from 12,197,669 pounds, value \$273,191, to 15,604,347 pounds, value \$330,554; iron plates, from 472,401 pounds, value \$16,641, to 2,838,660 pounds, value \$65,768; steel plates, from 243,616 pounds, value \$8,048, to 654,614 pounds, value \$20,459; iron rails, from 277 tons, value \$8,007, to 409 tons, value \$11,113; steel rails, from 7,983 tons, value \$259,531, to 15,289 tons, value \$471,230; saws and tools, from \$1,900,444 to \$1,902,433; scales and balances, from \$325,417 to \$406,430; locomotive engines, from 197, value \$1,717,715, to 195, value \$1,794,709; stationary engines, from 360, value \$567,485, to 401, value \$607,758; wire, from 26,059,010 pounds, value \$852,659, to 42,798,043 pounds, value \$1,189,219; and unenumerated manufactures of iron and steel, from \$3,877,676 to \$4,896,401. Leaf tobacco and stems and trimmings increased from 255,432,077 pounds, value \$20,670,045, in 1892, to 266,083,083 pounds, value \$22,891,899, in 1893. In the exports of musical instruments, organs increased from 11,856, value \$772,582, to 12,518, value \$897,870; pianofortes, from 858, value \$246,425, to 2,066, value \$76,447; and all other instruments and parts, from \$145,649 to \$165,790. Exports of oleomargarine increased in the item of imitation butter from 1,610,837 pounds, value \$195,587, to 3,479,322 pounds, value \$416,386; and in the oil, from 91,581,703 pounds, value \$9,011,889, to 113,939,363 pounds, value \$11,207,250. Exports of sausage casings increased in value from \$878,675 to \$1,409,280. Other articles which showed an increase in the quantity exported in 1893 were: Blacking, \$20,880; bones, hoofs, horns, etc., \$101,209; building bricks, from 4,723,000, value \$34,288, to 10,625,000, value \$77,846; fire bricks, from the value of \$53,414 to \$118,312; brooms and brushes, \$60,233; dyes and dye stuffs, from \$597,016 to \$679,373; proprietary medicines, from \$1,842,889 to \$1,866,061; all chemicals, drugs, etc., not specified, from \$3,044,631 to \$3,097,952; watches, and parts of, from \$208,743 to \$241,758; ground or prepared coffee, cocoa, etc., \$22,641; manufactures of copper not elsewhere specified, from \$292,043 to \$338,063; colored cotton cloths, from 40,815,450 yards to 43,016,108 yards; cotton clothing, \$19,254;

all other cotton manufactures, \$613,363; china ware, from \$13,824 to \$19,589; eggs, from 143,489 dozen to 183,063 dozen; dried herring, from 3,279,263 pounds, value \$82,772, to 4,085,378 pounds, value \$93,412; other cured fish, not specified, increased \$2,905; canned salmon increased from 18,215,025 pounds, value \$1,738,465, to 22,052,073 pounds, value \$2,279,625; other canned fish, from \$146,067 to \$166,902; flax, hemp, and jute twine, from \$621,479 to \$767,545; preserved fruits other than canned, from \$214,738 to \$224,381; nuts, from \$60,684 to \$94,902; furs and fur skins, \$113,240; glass and glassware, \$31,525; glue, from 580,815 pounds, value \$66,403, to 736,446 pounds, value \$74,722; explosives other than gunpowder, from \$752,079 to \$755,966; hair and its manufactures, \$89,479; hides and skins, \$273,108; hops, while decreasing in quantity from 12,604,686 pounds in 1892, to 11,367,030 in 1893, showed an increase in value of \$275,365; India-rubber boots and shoes increased from 231,105 pairs, value \$183,570, to 410,950 pairs, value \$252,391; other manufactures of India rubber and gutta-percha increased from \$1,232,497 to \$1,357,015; lamps and other lighting apparatus increased \$23,054; lead and its manufactures, \$150,865; buff, grain, split, and other finished upper leather, from \$3,880,475 to \$4,440,552; all leather not specified, from \$605,094 to \$817,409; leather manufactures not elsewhere specified, from \$400,175 to \$443,570; lime and cement increased \$51,176; malt liquors, \$7,604; marble and stone manufactures increased \$148,973; linseed oil increased from 112,386 gallons, value \$54,020, to 128,936 gallons, value \$54,356; oil of peppermint increased from 54,987 pounds, value \$156,418, to 99,629 pounds, value \$267,422; other essential oils, from \$68,501 to \$79,920; and all other vegetable oils not specified, from \$73,731 to \$236,101; gold and silver bearing ores increased \$186,199; paper hangings increased from \$61,360 to \$71,106; writing paper and envelopes, from \$99,870 to 114,016; and other paper and its manufactures, from \$1,221,021 to \$1,355,764; paraffin and paraffin wax increased from 64,998,867 pounds to 82,675,140 pounds; quicksilver from 306,047 pounds to 424,613 pounds; silk manufactures exported increased \$9,523; spermaceti and spermaceti wax, \$14,170; Bourbon whisky increased from 744,172 proof gallons, value \$664,330, to 1,550,425 proof gallons, value \$1,461,013; rye whisky, from 128,273 proof gallons, value \$135,045, to 142,646 proof gallons, value \$179,534; and all distilled spirits not elsewhere specified from 47,724 proof gallons, value \$25,598, to 296,708 proof gallons, value \$162,445; starch increased from 20,081,027 pounds to 21,938,456 pounds; stationery other than of paper increased \$5,149; stereotype and electrotype plates, \$14,810; straw and palm-leaf manufactures, \$89,930; brown sugar increased from 245,783 pounds, value \$8,682, to 359,455 pounds, value \$13,175; refined sugar from 14,604,608 pounds, value \$665,477, to 20,386,672 pounds, value \$963,123; and candy and confectionery, from \$204,609 to \$334,607; vinegar increased from 74,890 gallons to 86,936 gallons; and whalebone, from 82,797 pounds to 148,130 pounds. The exports of wood and its manufactures show a net increase of \$875,868. Fire-



wood increased from 423 cords, value \$1,604, to 1,920 cords, value \$5,877; shooks, from \$781,537 to \$941,008; staves and headings, from \$2,211,716 to \$2,499,520; all other lumber not specified, from \$1,051,397 to \$1,443,539; hewn timber, from 6,736,446 cubic feet, value \$983,574, to 7,836,921 cubic feet, value \$1,188,353; logs and other timber, from \$1,923,604 to \$2,270,072; moldings and other house finishings, from \$202,589 to \$208,002; household furniture, from \$3,090,146 to \$3,112,291; and all other manufactures of wood not specified, from \$1,827,470 to \$1,917,451. Exports of boards, deals, and planks increased in quantity from 592,596 thousand feet in 1892 to 629,355 thousand feet in 1893, but the value fell off from \$9,672,599 to \$9,642,599; joists and scantling decreased in quantity 2,656 thousand feet, and in value \$57,488; hoops and hoop poles decreased from \$88,222 to \$40,350; laths fell off more than one half, both in quantity and value; palings, pickets, etc., decreased \$2,405; shingles, \$15,430; sawed timber, from 235,550 thousand feet, value \$2,673,154, to 214,198 thousand feet, value \$2,320,123; doors, sash, and blinds, from \$295,918 to \$273,455; barrels and hogsheads, from \$290,113 to \$208,002; and wooden ware, from \$356,553 to \$328,817. Exports of all manufactured articles not specified increased from \$1,852,857 in 1892 to \$2,003,879 in 1893.

The total value of the foreign merchandise exported from the United States during the fiscal year of 1893 was \$16,634,409, of which \$10,780,369 represent the dutiable and \$5,854,040 the free merchandise. In 1892 the articles subject to duty amounted to \$9,990,002, and those free of duty to \$4,556,135, a total value of \$14,546,113. The foreign goods exported from warehouse amounted to \$10,500,666 in 1893, and \$9,972,567 in 1892.

**Movement of Specie.**—The following table shows by months the imports and exports of gold and silver coin and bullion for the year ending June 30, 1893, and for the preceding year:

MONTHS.	1892.		1893.	
	Imports.	Exports.	Imports.	Exports.
July .....	\$2,934,290	\$3,323,408	\$1,950,422	\$12,816,628
August.....	3,055,523	3,321,651	1,993,735	9,411,552
September...	9,032,833	2,879,863	3,785,031	7,299,814
October.....	19,320,974	4,040,340	6,613,288	3,991,672
November....	11,070,236	4,991,662	5,298,426	5,038,864
December...	8,099,505	3,089,526	3,865,067	17,589,924
January.....	1,667,631	2,598,064	2,315,923	16,610,838
February....	4,162,887	9,054,434	3,370,516	17,350,891
March.....	3,935,760	8,726,926	7,558,502	11,118,693
April.....	1,669,332	9,694,053	1,710,092	21,481,860
May.....	2,054,093	5,733,891	3,430,789	19,979,807
June.....	2,651,426	20,552,068	2,595,792	6,727,620
Total.....	\$69,654,540	\$83,005,886	\$44,367,633	\$149,418,163

The total imports of coin and bullion for the fiscal year of 1893 fell \$25,286,907 below those of 1892, while the exports of 1893 exceeded those of the previous year \$66,412,277. In other words, the net export of gold in 1893 was greater by \$91,699,184 than that of 1892. In October and November, 1892, which belong to the fiscal year of 1893, the flow of specie was toward the United States, the imports of those two months exceeding the exports \$2,881,178; but in the month following a drain began upon

our specie resources, which continued almost without abatement to the end of the fiscal year. In December the net shipments of specie were \$14,224,857, against a balance of over \$5,000,000 on the other side for the corresponding month of the previous year. In January the export of specie was a little lighter, but the net outflow increased. It continued about the same in February, decreased to \$3,260,191 in March, and reached its acme of \$19,771,768 in April. At this time the stringency in money in New York, and the high rates which prevailed, began to attract foreign capital, and the imports of specie increased in May and June, while the exports declined \$13,000,000 in the latter month. The specie imported in 1893 comprised \$21,174,381 in gold, of which \$3,136,744 were bullion, \$6,074,899 domestic coin, and \$11,962,738 foreign coin; and \$23,193,252 in silver, of which \$4,978,400 were bullion, \$599,189 domestic coin, and \$17,615,663 foreign coin. The exports were \$125,627,407 in domestic coin and bullion, and \$23,790,756 in foreign. The domestic exports consisted of: Gold, \$131,835, in bars of the United States mint or assay office, \$92,231 in other bullion, and \$101,844,087 in coin; and of silver, \$67,655 in bars, \$23,397,091 in other bullion, and \$94,508 in coin. The exports of foreign specie consisted of \$6,612,691 in gold coin, and \$17,187,065 in silver coin. In 1892 the specie exports comprised: Domestic gold, \$43,321,351; domestic silver, \$16,765,067; foreign gold, \$6,873,976, of which \$22,637 were bullion; and foreign silver, \$16,045,492, of which \$11,689 were bullion. The increased export in 1893 consisted almost entirely of American gold and silver.

**Navigation.**—The following table shows by months the number of entries at United States ports of American and foreign vessels in the foreign trade of the United States, and the tonnage during the fiscal year ending June 30, 1893:

MONTHS.	AMERICAN VESSELS.		FOREIGN VESSELS.	
	No.	Tons.	No.	Tons.
July.....	1,371	439,885	2,583	1,442,722
August.....	1,433	432,922	2,617	1,521,141
September....	1,111	368,884	2,161	1,358,470
October.....	1,042	371,908	2,180	1,508,572
November.....	837	362,459	1,855	1,430,819
December.....	466	280,122	1,110	1,111,506
January.....	336	243,114	850	1,047,809
February.....	323	242,887	741	890,005
March.....	433	297,852	897	1,045,891
April.....	616	334,408	1,314	1,109,096
May.....	1,175	457,377	2,162	1,344,853
June.....	1,535	522,468	2,576	1,411,709
Total.....	10,678	4,358,686	21,076	15,222,093
Total previous year.	10,912	4,469,955	22,232	16,543,469
Decrease .....	234	111,269	1,156	1,321,376

The total number of the entries at the ports on the Gulf coast from United States ports north of Cape Sable, Florida, was 581, and the total tonnage 926,732 tons. Of these entries 310 were of American steam vessels, with 668,879 tons; 151 American sailing vessels, with 76,116 tons; 115 foreign steam vessels, with 176,654 tons; and 5 foreign sailing vessels, with 5,083 tons.

The clearances from United States ports of vessels in the foreign trade of the United States, and the tonnage, during the fiscal year ending June 30, 1893, are shown by the following table:



MONTHS.	AMERICAN VESSELS.		FOREIGN VESSELS.		YEAR ENDING JUNE 30.	In cars, etc.	In American vessels.	In foreign vessels.
	No.	Tons.	No.	Tons.				
July.....	1,283	407,928	2,577	1,418,159	1859.....		\$249,617,953	\$107,171,509
August.....	1,384	427,639	2,579	1,488,018	1860.....		279,082,902	121,039,394
September.....	1,076	370,543	2,210	1,332,655	1861.....		179,972,733	69,372,180
October.....	1,010	418,349	2,099	1,400,451	1862.....		125,421,318	104,517,667
November.....	726	354,079	1,818	1,414,680	1863.....		132,127,591	199,880,691
December.....	481	296,304	1,202	1,214,211	1864.....		102,849,409	237,442,730
January.....	353	249,614	763	974,052	1865.....		93,017,756	262,839,688
February.....	339	249,714	764	929,441	1866.....		213,671,466	351,754,928
March.....	473	324,601	968	1,120,841	1867.....		180,625,363	280,708,368
April.....	637	342,674	1,331	1,123,492	1868.....		175,016,348	301,586,401
May.....	1,302	461,947	2,211	1,396,536	1869.....		153,154,748	253,979,781
June.....	1,349	498,370	2,650	1,494,852	1870.....		199,732,324	239,736,973
Total.....	10,463	4,403,862	21,172	15,357,834	1871.....	\$7,798,156	190,378,462	392,301,932
Total previous year.	11,085	4,536,151	22,299	16,624,832	1872.....	10,015,039	168,044,799	293,929,579
Decrease.....	622	132,789	1,127	1,267,498	1873.....	10,799,430	171,566,758	494,915,886

The total number of clearances from ports on the Gulf coast for United States ports north of Cape Sable was 563, with a total of 961,892 tons. These comprised 291 American steam vessels, with 644,015 tons; 117 American sailing vessels, with 97,182 tons; 147 foreign steam vessels, with 215,046 tons; and 8 foreign sailing vessels, with 5,649 tons.

The volume of foreign trade for the year was less by \$143,660,794 than that of the preceding year, and a corresponding decrease occurred in the entries and clearances, both as to the number of vessels and the amount of tonnage.

The following table shows the values of the imports of the United States carried in cars and other land vehicles, in American vessels, and in foreign vessels, from 1859 to 1893, inclusive, embracing merchandise, coin, and bullion to and including 1879, and merchandise thereafter :

YEAR ENDING JUNE 30.	In cars, etc.	In American vessels.	In foreign vessels.
1859.....		\$216,123,428	\$122,644,702
1860.....		228,164,355	134,001,399
1861.....		201,544,055	134,106,093
1862.....		92,274,100	113,497,629
1863.....		109,744,580	143,175,340
1864.....		81,212,077	243,350,318
1865.....		74,385,116	174,170,536
1866.....		112,040,395	333,471,763
1867.....		117,209,536	300,622,035
1868.....		122,965,225	245,659,533
1869.....		136,302,024	300,512,231
1870.....		153,237,077	309,140,510
1871.....	\$15,187,354	163,285,710	369,020,644
1872.....	17,635,681	177,286,302	445,416,783
1873.....	17,070,548	174,739,834	471,806,765
1874.....	14,513,335	176,027,778	405,320,135
1875.....	13,083,559	157,872,726	382,940,568
1876.....	12,143,667	141,389,704	321,139,500
1877.....	10,697,640	151,834,067	329,565,833
1878.....	12,965,999	146,499,282	307,407,565
1879.....	11,933,823	143,590,353	310,499,599
1880.....	15,142,465	149,317,863	503,494,913
1881.....	17,193,213	133,631,146	491,340,269
1882.....	22,354,946	130,266,326	571,517,302
1883.....	23,003,048	136,092,200	564,175,576
1884.....	20,140,294	135,046,207	512,511,192
1885.....	21,149,476	112,364,052	443,513,301
1886.....	24,555,633	118,942,817	491,337,636
1887.....	27,562,059	121,365,493	543,392,216
1888.....	32,209,459	123,525,398	563,222,557
1889.....	38,227,861	120,782,910	536,120,881
1890.....	40,621,361	124,948,948	623,740,100
1891.....	40,932,755	127,471,678	676,511,763
1892.....	39,726,595	139,139,391	643,535,976
1893.....	44,121,094	127,095,434	695,184,394

The values, and modes of carriage of the exports during the same period are given in the following table :

YEAR ENDING JUNE 30.	In cars, etc.	In American vessels.	In foreign vessels.
1859.....		\$249,617,953	\$107,171,509
1860.....		279,082,902	121,039,394
1861.....		179,972,733	69,372,180
1862.....		125,421,318	104,517,667
1863.....		132,127,591	199,880,691
1864.....		102,849,409	237,442,730
1865.....		93,017,756	262,839,688
1866.....		213,671,466	351,754,928
1867.....		180,625,363	280,708,368
1868.....		175,016,348	301,586,401
1869.....		153,154,748	253,979,781
1870.....		199,732,324	239,736,973
1871.....	\$7,798,156	190,378,462	392,301,932
1872.....	10,015,039	168,044,799	293,929,579
1873.....	10,799,430	171,566,758	494,915,886
1874.....	8,509,205	274,424,216	533,885,971
1875.....	7,304,376	156,385,066	501,838,949
1876.....	6,324,437	167,656,467	494,215,487
1877.....	6,767,170	164,826,214	530,354,708
1878.....	7,511,365	166,551,642	569,583,564
1879.....	7,489,862	128,425,339	600,769,633
1880.....	5,833,923	109,029,209	720,770,521
1881.....	8,259,303	116,955,324	777,162,714
1882.....	12,118,371	96,962,919	641,460,967
1883.....	25,059,844	104,418,210	694,331,348
1884.....	26,573,777	98,652,328	615,237,007
1885.....	24,183,299	82,001,691	636,004,765
1886.....	19,144,667	78,406,686	531,973,477
1887.....	21,389,666	72,991,253	621,302,292
1888.....	22,147,363	67,332,175	606,474,964
1889.....	28,436,517	83,022,198	630,942,660
1890.....	32,949,902	77,502,133	747,376,644
1891.....	31,923,439	78,988,047	773,569,324
1892.....	33,221,472	81,033,844	916,022,332
1893.....	43,862,947	70,670,073	733,132,174

The total value of the imports and exports of the United States in the fiscal year of 1859 was \$695,557,592, of which amount 66·9 per cent. was carried in American vessels. In 1860 the trade amounted to \$762,288,550, of which American vessels carried 66·5 per cent. In 1861, the first year of the civil war, the trade decreased to \$584,995,066, and the percentage carried in American vessels was 65·2. In 1862, owing principally to the blockade of Southern ports, there was a further decline of about \$150,000,000 in the volume of trade, and the percentage carried in American vessels dropped to 50. From that time forward there was a steady increase in the amount of imports and exports, but a rapid and almost uninterrupted decline in the percentage carried in American vessels. This percentage dropped to 41·4 in 1863; 27·5 in 1864; and was 27·7 in 1865. After the close of the war the volume of trade still further increased, and there was an increase for a few years in the percentage carried in American vessels. This was 32·2 in 1866, 33·9 in 1867, 35·1 in 1868, 33·1 in 1869, 35·6 in 1870. From this it dropped to 31·9 in 1871, 29·2 in 1872, 26·4 in 1873, 27·2 in 1874, 26·1 in 1875, 27·7 in 1876, 26·9 in 1877, 26·3 in 1878, 23 in 1879, 17·4 in 1880, 16·5 in 1881, 15·8 in 1882, 16 in 1883, 17·2 in 1884, 15·3 in 1885, 15·5 in 1886, 14·3 in 1887, 14 in 1888, 14·3 in 1889, 12·9 in 1890, 12·5 in 1891, 12·3 in 1892, and 12·2 in 1893.

CONGO FREE STATE, a sovereign monarchical state created in Central Africa by the general act of the International Conference of the Congo, signed at Berlin, Feb. 26, 1885, which declares the perpetual neutrality of its territories. Leopold II, King of the Belgians, assumed the sovereignty personally and independently of the Belgian Government after obtaining the consent of the Belgian Legislature to the personal union, and was proclaimed Sovereign of the Independ-

ent State of the Congo at Banana, July 13, 1885. The frontiers have since been more exactly defined by conventions with France and Portugal, and extended north of the Congo by treaties with native chiefs. The sovereign in his will, dated Aug. 2, 1889, bequeathes all his rights of sovereignty over the Congo State to Belgium, and a convention between Belgium and the Independent State of the Congo, concluded on July 3, 1890, assures to Belgium the right to annex the Free State, after the lapse of ten years, with all the property, rights, advantages, and obligations appertaining to the sovereignty. By a codicil, dated July 21, 1890, attached to the testament, the territories of the State are declared inalienable, and the convention was ratified by the Belgian chambers, July 25, 1890. At the International Conference for the Suppression of the Slave Trade which met at Brussels in 1890, the powers revoked the condition of the general act which declared free trade throughout the basin of the Congo, and empowered the Government to levy certain duties on imports.

The Congo is an international river, free to the flags of all nations. The Free State possesses the territory on the north bank of the Congo from its mouth to Manjanga, above which the north bank, up to the mouth of the Mobangi, belongs to France. The south bank is Portuguese territory as far as Nokki, just above which the navigation of the Congo is interrupted by rapids which extend for over 200 miles from Vivi to Stanley Pool. A railroad from Vivi to Leopoldville, on Stanley Pool, has been begun. From Nokki the boundary of the Free State runs due east to the Kwango, follows the course of that river up to 8° of south latitude, runs east for 150 miles, then north to 7°, east again to the Kassai, and follows that river southward up to its source, about 24° of east longitude from Greenwich. From that point eastward to Lake Tanganyika the Free State is coterminous with the British sphere in South Africa, and the boundary has not been settled, although by the convention of May, 1891, between Portugal and the Independent State of the Congo it runs eastward from the source of the Kassai to Lake Bangweolo. The eastern frontier, dividing the Congo State from British South Africa, is not determined. Farther north, Lake Tanganyika and a line from the northern extremity of the lake to Mfumbiro divides it from German East Africa, and from that point northward the thirtieth meridian of east longitude divides it from the British sphere in East Africa. Westward from that meridian to the boundary of the French Congo, on the Mobangi, the Free State is bounded on the north by the northeastern watershed of the Congo. The total area of the Congo State is roughly estimated at 900,000 square miles, and the population at from 14,000,000 to 17,000,000. The capital is Boma, on the lower Congo. There were 774 resident Europeans at the beginning of 1891, of whom 388 were Belgians.

The heads of departments in the Central Government at Brussels, which is presided over by the sovereign, were in the beginning of 1893 as follow: Foreign Affairs, Posts, and Justice, E. de Grelle Rogier; Finance and Domains, C. Janssen; the Interior, Public Forces, and Marine, E. van Eetvelde. The local government was

composed of the Vice-Governor-General, Major Charles Wagis, the governor-generalship being vacant; State Inspectors, A. C. van Gele and Capt. Baert; the Directors of Finance and Justice, A. Bolle and Dr. F. Fuchs; the Commander of the Public Forces, Capt. van der Mensbrugghe; and the commissaries of the 11 administrative districts of Banana, Boma, Matadi, the Cataracts, Stanley Pool, Kassai, the Equator, the Ubanji and Welle, the Aruwimi and Welle, Stanley Falls, the Lualaba, and East Kwango. The public forces numbered 3,792 native troops, divided into 8 companies commanded by Europeans. A decree, issued on July 30, 1891, authorizes an annual conscription of the native Africans between the ages of fourteen and thirty. The Government in 1892 had 5 steamers on the lower and 11 on the upper Congo.

The public revenue is derived from an annual subsidy, formerly of 2,000,000 francs and afterward of 1,000,000 francs, granted by the sovereign out of his private means, an advance of 2,000,000 francs a year from 1890 from the Belgian treasury, and taxes, duties, license fees, and receipts from sales and leases of public lands. The budget for 1891 estimates the receipts, over and above the 3,000,000 francs contributed by the King of the Belgians and the Belgian Government, at 1,554,932 francs, of which 730,966 francs are derived from customs, 193,667 francs from licenses, 255,838 francs from other local sources, and 374,461 francs remained unexpended from the Belgian advance for 1890. The principal estimated expenditures were 2,271,628 francs for the public forces, 329,198 francs for the marine, 648,201 francs for civil administration in Africa, 187,045 francs for the civil service in Europe, and 372,790 francs for caravans, etc. The budget for 1892 was 4,731,981 francs; for 1893, 5,440,681 francs. On July 25, 1892, a decree was issued by the sovereign declaring that the right of hunting elephants is interdicted throughout the territories of the State, except by special permission. Another decree prohibited all private trade with natives in caoutchouc. The latter decree, in answer to the protests of the mereantile community in Africa, was afterward modified so as to allow rubber to be gathered and sold to traders, subject to a duty of 25 centimes per kilo, except in the forests of the north, in the basins of the Welle, the Mbomu, the Aruwimi, the Himbiri, and some other rivers. But it is forbidden to cut the plants that produce the caoutchouc.

The total imports in 1891 were valued at 10,535,619 francs, and the exports at 5,353,519 francs. The principal exports were ivory, 3,318,000 francs; caoutchouc, 2,320,000 francs; palm nuts, 1,864,000 francs; coffee, 1,643,000 francs; palm oil, 1,227,000 francs. During 1891 the number of vessels entered at the ports of Banana and Boma was 893, of 247,689 tons.

**Expedition to the Upper Welle.**—On Feb. 3, 1891, Capt. Van Kerekhoven, state inspector, set out from Leopoldville with two steamers containing the first part of an expedition consisting of 600 black soldiers armed with Albinis rifles, 18 officers, as many under officers, and 2 surgeons, with auxiliaries armed with muskets and a huge body of followers, as was necessary for the transport of the stores and material for such an expedition, which included a Krupp



cannon, a Hotchkiss rapid-fire gun, and 4 other guns. The purpose of the expedition was to traverse the region of the Welle from Yakoma to the Monbuttu country, conclude treaties with the rulers, and put the tribes in a condition to defend themselves against both the Arab slavers and the Mahdists, who were extending their conquests from the Soudan. Before setting out, Capt. Van Kerckhoven went to Stanley Falls to secure the loyal support of Rashid, the vali who had succeeded Tippoo Tib. Lieut. Fievez, commandant of the post of Basoko, opened the line of communications from the Congo to the Itimbiri and Welle, and made sure of the friendly attitude of the powerful Sultan of Djabbir. Capt. Ponthier preceded the expedition to open this route, reaching the confluence of the Bomokandi and the Welle. Itembo, at the head of navigation on the Itimbiri, was fortified so as to serve as a base of supplies. A second advance guard, under Lieut. Milz, proceeded northward toward the sultanate of Senno. The expedition made good progress, and the diplomatic tact of the leader and the imposing display of military force not only secured a peaceful passage, but persuaded the native rulers to accept the protection and alliance of the Congo State. The Arabs disputed the way, and there were frequent bloody encounters with them. In April, 1892, the expedition was heard from as having reached the Monbuttu country, on the confines of the Free State's territory. A few months later there were rumors that it had broken the power of the dervishes on the upper Nile and established a station at Wadelai, or, according to other accounts, even at Lado, in the abandoned Equatorial Province of Egypt. The Congo Government had approached the British Minister of Foreign Affairs and had obtained his assent to a proposition that the expedition should occupy the Nile province provisionally in furtherance of its mission to check the slave trade. Lord Salisbury may have thought that there was little prospect of the establishment of Belgian stations on the upper Nile, and that any success that the expedition could attain in rallying the populations against the slave raiders and damming back the power of the Khalifa would further the British policy in East Africa and help to conserve British interests in Uganda. There were reports that Capt. Van Kerckhoven had established himself at Lado; that the Khalifa had sent a force under the Emir Abugingeh; that the latter had been induced to desert the dervish cause and join in an anti-Mahdist movement that had broken out in southern Kordofan. Either a better knowledge of the rebellious mood of the Shilluks, Denkas, and other warlike tribes on the Nile, who were likely to join hands with the whites and favor their establishment on the Nile and their advance northward, or some other reason, impelled Lord Salisbury to veto the permission granted to the Congo Government by the President of the British East Africa Company, to which he had previously given his assent. He refused to listen to any compromise that would allow the Congo forces to set foot within the English sphere, and Lord Rosebery maintained the same attitude. It was evident that any occupation of the Nile region by the Congo State forces would give a colorable legal title to sovereign rights,

because the Congo Free State was not a party to the Anglo-Italian and Anglo-German arrangements that conceded it to Great Britain, and international law, as defined in Anglo-German and other treaties respecting the coast of Africa and unclaimed countries in general, requires that there must be effective occupation to establish territorial rights. From Lado, or whatever point he reached in the Nile region, Capt. Van Kerckhoven was eventually compelled to retreat. While returning, he was killed, on Aug. 10, 1892, by the accidental discharge of a rifle. His party of 20 whites was much reduced by deaths, and the troops suffered losses in many conflicts with the Soudanese, the Niamniams, and the Monbuttus. Yet the powerful chiefs of the northeast—Bangasso, Djabbir, Semio, and others—remained loyal to the Independent State, and the league against the slave-traders was organized by the survivors of the expedition. Capt. Baert, who was sent to succeed Capt. Van Kerckhoven, was stopped by hostile Niamniams on Bamokandi river, but worsted them after a severe encounter, and succeeded in joining Capt. Delanghe, who took command after the death of Van Kerckhoven. With the consent of the native chiefs, who have considerable armies organized in military fashion, the country was divided into military districts placed under the command of Belgian officers.

**Antislavery Posts at Tanganyika.**—The west shore of Lake Tanganyika was intrusted to the action of the Algerian missionaries by the Independent State of the Congo after the Congress of Berlin in 1885. It was thus that the post of Mpala, founded for the International African Association by Capt. Storms, in 1883, became an antislavery center. Capt. Joubert, an old soldier of the Papal Zouaves, organized a little army recruited from pupils of the Carmelite mission and liberated slaves, and carried on a constant war with the Arab raiders. Many chiefs of natives tribes sought protection against the slavers. The latter redoubled their attacks, and in a battle which took place on June 4, 1890, when a series of sanguinary encounters had decimated the force and left it with not more than 100 rifles in good order, the post was saved by a storm that scattered the enemy's boats.

The Belgian Antislavery Society fitted out an expedition under Capt. Jacques, which arrived at Rumbi, one of Joubert's stations, on Sept. 27, 1891. Jacques, who took the chief command, extended the field of operations, founding the post of Albertville, north of Mpala, on Dec. 30, 1891, as a barrier against Arab incursions. The Arab chiefs collected their forces and hurled them against the two posts, and after each repulse returned in stronger numbers. In answer to the call for re-enforcements the Antislavery Society fitted out a third expedition, which left Amsterdam on April 2, 1892, under the command of Lieut. Long, and in the spring of 1893 a fourth, under Capt. Descamps, who took a large supply of arms and ammunition and stores of victuals. This last expedition took the route of the Zambesi, reaching it by way of the Cape of Good Hope, and passing through Nyassaland with the assistance of the British African Lakes Company to Karenga, north of Lake Nyassa, which is a month's journey from the

Belgian stations on Lake Tanganyika. This new route is less subject to delays than the one from Bagamoyo. Lieut. Long could not come to the relief of Capt. Jacques till February, 1893. War between the Germans and the natives kept him back, and when peace was concluded it was impossible to find porters. Meanwhile, Capt. Jacques was hard pressed by the Arabs. On Sept. 7, 1892, he attacked the fortified camp that they had established near his post, but was compelled to retreat for lack of ammunition. Before the arrival, in August, of Delcommune's party, the chief Arab slave-trader and military chieftain, who operated in this region—Rumaliza, of Ujiji—held his little force closely invested in Albertville, with the intention of starving it out. The siege was raised when Lieut. Long arrived, and the Arabs retired after their *boma* or fort was taken and destroyed, although they greatly outnumbered the Belgian force. Rumaliza was acting in concert with Moharra and all the Arab chiefs to the west and north in an effort to sweep the Belgians from the center of Africa, and it was the success of the arms of the Congo State in the Congo region that caused him finally to desist, and saved the anti-slavery settlements from extinction.

**Katanga Expeditions.**—Four expeditions operated between 1890 and 1893 in the vast tract lying between the lakes of Tanganyika, Moero, and Bangweolo, with the object of opening its rich resources to Belgian enterprise and planting there the flag of the Free State. This region, situated at the southeastern extremity of the treaty limits of the Congo State, is popularly known as Katanga, from one of the tribes inhabiting it which had subjugated several others. The expeditions were sent out by the Katanga Company, which had received a concession for the commercial exploitation of this particular region, and were led by Lieut. Paul Le Marinel, Alexandre Delcommune, Capt. Lucien Bia, and Capt. Stairs. Lieut. Le Marinel left the fortified camp of Lusambo, on the Sankuru, on Dec. 29, 1890. Delcommune entered the country by way of the Lomami, departing from Gongo Lutita on May 13, 1891; Capt. Bia advanced from Lusambo on Nov. 11, 1891; and Capt. Stairs, coming from the east coast, set out from Mpala, on Lake Tanganyika at the end of the same month. The country through which they passed has been turned into a desert by Arab slave raids, which have compelled the people, instead of living in little communities of a thousand persons or so, to collect in huge villages containing 9,000 or 10,000, separated by wide stretches of deserted waste. Delcommune lost half his 200 porters before he reached Lupongo, the first of these settlements, and after replacing them he left 50 more dead on the road in the next week. The famished party refreshed themselves with hippopotamus meat when they reached the Lomami. In a battle with a caravan of Arabs, who were encouraged by the brother of Msiri, the tyrant of Uganda, Dr. Briart, the surgeon, was killed, and henceforth they had to fight their way to Bunkeia, Msiri's capital, where they arrived on Oct. 6, 1891. A Swedish officer, Lieut. Hakansson, who usually commanded the military operations, was killed in an encounter with the natives. Msiri,

a political ally of the Arabs, who respected his dominions because they could not cope with his formidable forces, received the expedition with politic friendliness, and gave permission to explore his dominions, as he had the pioneer expedition of Lieut. Le Marinel, which made its entry into the King's capital on April 18, and departed on June 11, 1891, leaving Lieut. Legat and a small force at the fortified camp that was established at Lafoi, near Bunkeia. Capt. Bia reached Bunkeia on Feb. 4, 1892, and there met the party of Capt. Stairs. A few days before Capt. Bodson and King Msiri had both been killed in an affray regarding the recognition of the flag of the Free State, and Capt. Stairs had taken possession of the country and received the submission of Msiri's vassals, and of his son, who was installed as King of Katanga. Stairs sickened and died on his return trip to the Zanzibar coast, and his expedition suffered terribly from famine. Bia also fell a victim to the deadly climate, and the expedition was brought back to Europe by Lieut. Francqui. Delcommune made an extensive exploration of Katanga, and visited the copper mines of Katabi. Msiri tried to drag him into a war with the Bassanga, the most numerous and warlike tribe in his dominions, but Delcommune refused, and even obtained an escort from the old tyrant. In the vicinity of Ntenke the band of 600 persons suffered from starvation, and was reduced to 200 before it reached the village of Mussima, where food was obtained. Reaching the banks of the Lualaba on Dec. 20, 1891, they made canoes in which to descend the river, but were obliged to leave it at Nzilo, where the river contracts and descends in a torrent broken by cataracts through a narrow gorge for 48 miles. They dragged their boats for several miles over the land, and then famine again began to thin their ranks, compelling them to retrace their steps to Bunkeia in order to take the route to Tanganyika. They reached Bunkeia on June 8, 1892, and made their way to the shore of Lake Tanganyika by a northeasterly route, crossing the Luapala where it emerges from Lake Moero. This lake is only an expansion of the Luapala, which is found to be the main branch of the Congo. When Delcommune reached Rumbi, now called Baudouinvillie, he learned from Capt. Joubert that Capt. Jacques was besieged by Arabs at Albertville, and hastened to his relief. From there he descended the Lukuga to the Lualaba and explored Lake Landji. Instead of descending the Lualaba to Nyangwe and Riba Riba, where the expedition would have been annihilated by the Arabs, he made his way across the country to Lusambo, for he had been warned of the Arab revolt by Mfimbi, a son of Msiri. Dhanis had crossed the Lomami and occupied the country between that river and the Lualaba, and both Bia and Delcommune were able to leave men and arms to strengthen his force.

**War with the Congo Arabs.**—After the massacre of Hodister and his companions in 1892, and the general revolt of the Arabs of the upper Congo region, the Free State authorities placed in the field one of the strongest military forces they had ever collected, for the purpose of re-establishing their power and punishing the rebels. The expedition, which was commanded by



Lieut. Dhannis, numbered 450 soldiers of the Congo State, and was joined by 7,000 native auxiliaries. The Arab rebels occupied the country from the fortified post at Basoko, at the junction of the Congo and the Aruwimi, southward to the fort at Lusambo, on the upper Sankuru, and Albertville, on Lake Tanganyika. The aged Tippoo Tib, who had retired, leaving his son Sefu bin Mohammed in his place as vali at Stanley Falls, wrote to assure the Government of his loyalty; and Sefu and Rashid, Tippoo Tib's nephew and deputy, who commanded at Kassongo, his chief place in the Manyema district, for some time after the massacre of the Hodister expedition by the Arab chief of Nyangwe, Muini Moharra, continued to act in harmony with the State authorities, and when Lieut. Dhannis prepared to move upon the enemy he expected that their forces would co-operate with him. Instead of that, they were drawn into the rebellion, and the Free State found itself at war with the united Arab power in Central Africa. The Belgian officers at Kassongo—Lippens and De Bruyn—were murdered. Arab forces attacked Albertville, Basoko, and Lusambo, and were repelled at each point. Sefu, in his camp at Stanley Falls, had expressed horror at the acts of Muini Moharra, whom he promised to bring speedily to terms, saying that he would join Dhannis in Lusambo with a large force. On his march through the rebellious districts on the Lomami he was joined by the other Arab chiefs, and advanced against Lusambo, supported by Moharra with a large army. Dhannis, however, learned in time his treacherous purpose, and obtained in haste the aid of Gongo Lutete, a powerful negro chief on the upper Lomami, and of the latter's principal vassal, Lupungu. The Arabs blocked the entrance to the Lomami at its junction with the Congo, and threatened to invade the possessions of Gongo Lutete, destroy the fortified camp at Lusambo, and advance upon Lulualberg and the commercial stations on the Kassai. The Arab army numbered about 10,000 rifles—a far greater force than Dhannis could muster—but the Belgian officer relied on his trained soldiers and his Krupp gun, and was not afraid to go out to meet the invaders. He attacked Sefu's army, forming the advance guard, near Gino Muisso, on Nov. 22, 1892. The battle lasted several hours and was fiercely fought. The Arabs were routed before Moharra and the main body came up, and these were involved in the disorderly retreat across the Lomami. The Arabs lost 1,100 men and left 603 rifles in the hands of the Belgians. After this victory the negroes, who before had feared to take up arms against their cruel oppressors, flocked to the banner of the Free State. More than 20,000 joined Dhannis, ready to carry the war into Manyema. Dhannis and his negro allies marched as rapidly as the conditions of transport and subsistence would permit upon the Arab strongholds of Kassongo and Nyangwe, thoroughly occupying the country as they advanced, first between the Sankuru and the Lomami, and then between the Lomami and the Lualaba. On Jan. 9 Lieut. Dhannis attacked the main body of the Arabs in an intrenched position at Goia Kapaka, and by shelling their camp brought on a general engagement and won another complete victory. Muini Moharra was killed and Sefu put to flight. He

made another stand at Angoi, between the Lomami and the Lualaba, and after a third defeat retired toward Nyangwe, which was strongly fortified on the river bank to prevent a passage. The strong positions on the left bank were also occupied by the Arabs, and fortified for the purpose of defending the approaches to the river. They made several attacks on the camp of the Congo troops, and one day attacked in force, and were badly beaten and driven across the Lualaba. Lieut. Dhannis then encamped before Nyangwe, Jan. 29, and besieged it for several weeks. After several bombardments, he crossed, on March 4, in canoes that the natives had brought up, and after a brisk fight, which lasted several hours, the Arabs fled in the direction of Kassongo, and the Belgians took possession of the city. A part of the Arab forces had retired northward with Sefu, and when the Congo troops entered Kassongo they found it deserted. A junction was made with Capt. Jacques, lest the remnant of Moharra's army that passed eastward, joining Rumaliza, might attempt to storm his fortifications at Albertville.

In the north, Lieut. Chaltin, commandant at Basoko, who had been operating with success against slave-raiders on the Aruwimi with the aid of the Mabenja negroes before the friendly Arabs revolted on the Congo, co-operated with Commandant Tobbak, of Stanley Falls, as soon as Rashid's people, who remained quiet till long after Sefu took the field with Moharra, took up arms against the Free State. They occupied in force the strong Arab fortress of Issanghi, at the mouth of the Lomami, and threatened Basoko, hoping to block the water communications and prevent the sending of assistance to the forces that were opposed to Moharra and Sefu. From this post they were dislodged by Chaltin, who converted it into a station of the Free State. He set out in the beginning of May, 1893, from Bena Kemba, on the Lomami, for the purpose of capturing the great Arab town of Riba Riba, on the Lualaba, north of Nyangwe. The Arabs met him at a river 14 miles from the place, and attempted to contest the passage. He was unable to procure boats, but finally dislodged the Arabs with his artillery, and constructed a raft, on which he crossed. After several days of fighting the expedition entered Riba Riba, which the enemy had left in ruins, abandoning it at the approach of the conquerors, after taking all that was valuable that could be carried, setting fire to the houses and destroying all the plantations, but leaving in their hasty retreat a quantity of arms and powder. Lieut. Chaltin suspected that the defeated Arabs would attack Stanley Falls, which had not previously been threatened, for Rashid continued to protest his loyalty and submission to the Congo State, and represented that the war in the south was due to the lamentable blunder of the whites in espousing the cause of Gongo Lutete, whose country Sefu had invaded in order to punish him as a false vassal, who had stolen merchandise that was confided to his care and rebelled against his chief. Chaltin's apprehensions were well founded. He arrived at Stanley Falls on May 15, while Commandant Tobbak was engaged in a battle against overwhelming odds, and put the assailants to flight, killing 200, and captur-

ing a quantity of munitions and several hundred prisoners. Sefu and Rashid, who had joined forces here, retreated to the fort at Kibonge, which was strong enough to offer a serious resistance. Soon afterward Capt. Ponthier reached Stanley Falls with 500 men and several cannon. He relieved Capt. Tobbak of the command, and at the end of June set out in canoes with 300 men and a Krupp gun and easily reduced Kibonge. By this victory the entire country involved in the Arab insurrection was cleared of the enemy.

In connection with the Arab revolt the Congo State had serious complaints to make of violations of the general act of the Brussels Conference by one or more of the signatory powers. Among the arms left on the battlefield by the Arabs at the various engagements on the Sankuru, the Lomami, and the Lualaba were many breech-loading rifles. The spoils taken at Stanley Falls included 100 kegs of powder. The Arabs in their slave raids are known to be extremely wasteful of gunpowder, and yet seem always to have had a never-failing supply. These munitions could only reach them by way of German East Africa or British Nyassaland, or through the Portuguese possessions on either the east or the west coast; and such importations could not take place without the connivance or extreme remissness of the European customs authorities, although the Antislavery Conference imposed on the governments the duty of taking all necessary measures to insure the fulfillment of the prohibition against the importation, sale, and transport of firearms and ammunition, as well as to prevent the entry or exit thereof by their inland frontiers or the passage thereof to regions where the slave trade is rife.

**Boundary Questions.**—The French and the Congo Government have both sent expeditions to occupy the region of the upper Welle, and a sharp dispute arose regarding their conflicting claims, which the Congo Government proposed to refer to arbitration in accordance with the terms of the Berlin general act. In January, 1893, M. Ribot, receding from some of the French demands, proposed to the Comte de Grelle Rogier, the Congo plenipotentiary, an acceptable compromise. According to this arrangement, the Mobangi or Ubangi and the Welle form the boundary up to the confluence of the Welle and the Mbomu, and then the latter river up to the point where the Shinko, an important tributary, flows into it, in about 6° of north latitude and 24° of east longitude; and east of that all the territory south of the Shinko, up to its course in the Bahr-el-Gazal territory, was conceded to the Congo State. From this arrangement M. Ribot afterward receded, and his successor was still more unwilling to acknowledge any Belgian rights beyond the Welle or north of 4° of north latitude.

The delimitation of the frontier in Lunda, west of the Kassai, the only part of the Portuguese boundary that remained undetermined, was carried out by the Rev. G. Grenfell, commissioner for the Independent State, and Col. Sarmento, acting for Portugal. They began their operations on the spot on Dec. 20, 1892, and the convention was signed at Lisbon on May 25, 1893.

**CONGREGATIONALISTS.** The "Congregational Yearbook" for 1893 gives statistics of the Congregational churches in the United States of which the summaries are as follow: Number of churches, 5,140; of ministers, 5,003; of members, 542,725; of members of Sunday schools, 644,782, with an average attendance of 397,201; of Young People's Societies of Christian Endeavor, 3,195, with 157,678 members: number of additions during the year by confession of faith, 31,582; number of baptisms, 14,040 of adults and 10,357 of infants; number of families, 364,350. Amount of benevolent contributions, so far as reported: For foreign missions, \$441,948; for education, \$252,699; for church building, \$137,770; for home missions, \$593,974; for American Missionary Association, \$148,805; for Sunday schools, \$54,974; for the New West Educational Commission, \$47,091; for ministerial aid, \$26,326; for other purposes, \$948,305; benevolent contributions of the Sunday schools, \$148,376. Of the churches, 3,723 are returned as "supplied with pastors" and 1,417 as "vacant"; of the ministers, 3,279 are in pastoral work, and 1,724 "without charge." The 7 theological seminaries—at Andover, Mass., Bangor, Me., Chicago, Ill., Hartford, Conn., Oberlin, Ohio, Oakland, Cal. (Pacific), and New Haven, Conn. (Yale)—return 52 professors, 38 instructors or lecturers, 11 resident licentiates or fellows, 29 advanced or graduate students, and 545 undergraduate students. Of 195 students in the Chicago Seminary, 68 are marked special, of whom 11 were in the German, 17 in the Dano-Norwegian, and 40 in the Swedish departments.

The total receipts in all departments of the American College and Education Society for the three years ending in 1892 were \$414,045; of this sum, \$152,941 were for the young men, and \$261,104 were for the colleges. The amount received for the colleges during the previous three years was \$162,727; so that an increase is shown for the last three years of \$98,377.

The New West Education Commission returned, July 1, 1892, 28 schools of all grades, with 68 teachers and 2,812 pupils; of whom 742 were Mormons, 585 "apostates," and 287 Mexicans; with 21 Sabbath schools, having 2,000 pupils. This society was to be united with the College and Education Society, under the name of the American Education Society.

The American Congregational Association returned the value of its Congregational House, Boston, in 1892, as \$501,000; its income for the year was \$23,104; and its indebtedness was \$165,000. The library contained 31,800 volumes, of which nearly 1,000 had been added during the past year 57,448 pamphlets, and 37,567 unbound numbers of periodicals. The chief specialty of the library is the early Congregational literature of New England, with its sources in the mother country; and it collects portraits, town histories, biographical sketches, etc.

The total income of the Congregational Sunday School and Publishing Society for 1892 was \$80,249, of which \$67,316 was available for immediate use.

**Congregational Church Building Society.**—The fortieth annual meeting of the Congregational Church Building Society (formerly Ameri-



can Congregational Union) was held in New York, Jan. 12. Vice-President A. S. Hatch presided. The trustees reported that the receipts of the society for the year had been \$168,450, of which \$13,670 had been contributed through the Women's Home Missionary Unions, \$540 through 43 Young People's Societies of Christian Endeavor, and \$1,059 through 111 Sunday schools. Loans and grants had been voted to 188 churches, and parsonage loans to 58 churches. By paying \$71,645 directly from the church-building funds, property worth \$361,591 had been secured; and by paying out \$20,060 from the Parsonage Loan fund, parsonage property valued at \$48,230. Thirty-five churches aided in building houses of worship had closed their accounts with the society by paying the balance of the grant or loan; making a total of 351 out of the 2,294 churches which had been aided that had discharged their obligations. Certain officers of the society were authorized to act as a committee of conference to decide upon the expediency of undertaking building enterprises in cases where there may be doubt of financial ability, or in which questions of denominational comity or multiplication of churches may be involved.

#### **Congregational Home Missionary Society.**

—The sixty-seventh annual meeting of the American Home Missionary Society was held at Saratoga Springs, N. Y., May 30. The receipts for the year had been \$775,262, of which \$526,582 were from contributions and legacies, and \$211,500 were collected and expended on the field. Two thousand and two missionaries had been employed in 47 States and Territories, of whom 1,169 were pastors or stated supplies of single congregations, 599 had ministered to two or three congregations each, and 257 had labored over still wider fields. They had supplied fully, or by preaching at stated intervals, 3,841 congregations and missionary districts. Four missionaries had served congregations of colored people, and 196 had preached in foreign languages—8 to Welsh congregations, 50 to German, 81 to Scandinavian, 22 to Bohemian, 4 to Polish, 15 to French, 2 each to Mexican, Italian, Spanish, and Finnish, 3 to Danish, 2 to Armenian congregations, and 1 to a congregation of Jews. The organization of 265 new Sunday schools, was reported, and 2,270 Sunday schools, with 159,420 pupils, were under the care of the missionaries. Seven thousand two hundred and forty-nine members had been added to the churches on confession of faith. One hundred and forty churches had been organized in connection with the labors of the missionaries, and 75 churches had become self-supporting. One hundred and fifty-three houses of worship had been completed, 34 were in course of erection, 217 had been materially repaired or improved, 4 chapels had been built, and 110 parsonages provided; and 122 men in connection with the missionary churches were preparing for the ministry. A special report on the work done among foreigners gave the following results: German work, 91 churches, with a membership of over 4,000, in 13 States, mostly west of the Mississippi; Slavic, 6 Bohemian churches, 350 members, in Ohio, Illinois, Wisconsin, Minnesota, etc., 1 Polish church in Detroit, 1 Slovak or Hungarian Slav church at Maddock, Pa., and a Magyar work at South Norwalk

and Bridgeport, Conn.; Scandinavian, over 100 churches, with a membership of more than 4,000 scattered over the whole country, from Maine to California. There were also mentioned 130 Churches of Welshmen in Ohio and Pennsylvania, 6 churches of French Canadians in New England, a Spanish church in New York city, besides earnest calls for work among Italians, Armenians, and others. The Woman's Department, organized in 1883, had contributed \$51,000 to the resources of the society, making the whole amount of its contributions since 1886, when they were first reported, \$280,000. Packages of "family supplies" had been sent out through the medium of officers of the society, amounting in value to \$46,597. A committee appointed in 1892 to examine into the relations between the national society and its auxiliaries and report what changes might be needed to render them more harmonious, reported a plan for the allotment of funds, which was approved. The name of the society was changed to Congregational Home Missionary Society; the changes in the constitution necessary to make it conformable to the new name were directed to be made, and the executive committee was instructed to take the steps required to secure legal sanction for the change.

**American Board.**—The eighty-third annual meeting of the American Board of Commissioners for Foreign Missions was held in Worcester, Mass., beginning Oct. 10. The Rev. R. S. Storrs, D. D., presided. The Prudential Committee reported that the total receipts for the year had been \$641,421, of which \$483,188 had been from donations, \$146,759 from legacies, and the rest from other sources. Of the donations, \$205,683 had been received from the three Woman's boards, and \$14,000 from the Societies of Christian Endeavor. The sum of \$30,865 had been appropriated for the two new missions in East Central and West Central Africa, and \$7,000 from the small remnant of the Swett bequest to the missions in China and Japan. The expenditures had amounted to \$768,333; and for the first time in sixteen years, or since 1877, a large debt was reported at the end of the year. The general summary of the missions for 1893 furnishes the following figures:

**Missions.**—Number of missions, 20; stations, 96; out stations, 1,128; places for stated preaching, 1,323; average congregations, 69,357.

**Laborers employed.**—Ordained missionaries (10 being physicians), 183; male physicians not ordained (besides 6 women), 12; other male assistants, 6; women—6 of them physicians (wives, 185; unmarried, 171)—356; whole number of laborers sent from this country, 557. Native pastors, 219; native preachers and catechists, 562; native school teachers, 1,462; other native laborers, 495. Total of native laborers, 2,738; total of American and native laborers, 3,295.

**The Churches.**—Number of churches, 442; church members, 41,566; added during the year, 3,570; whole number from the first, as nearly as can be learned, 125,593.

**Educational Department.**—Theological seminaries and station classes, 17; pupils, 228; colleges and high schools, 65; pupils in the above, 3,744; boarding schools for girls, 63; pupils in boarding schools for girls, 3,118; common schools,



1,019; pupils in common schools, 40,615; whole number under instruction, 48,585; native contributions, so far as reported, \$112,507.

Among the special facts of interest noticed in the survey of the condition and growth of the missions in the several fields it is observed that the social and intellectual progress of Bulgaria, as compared with the situation twenty years ago, under Turkish rule, attracts the attention of all thoughtful observers, and is justly recognized as due to Robert College and to the missionaries of the board. In India, according to the testimony of thoughtful observers, a great change of sentiment is in progress, and there is a readiness on the part of the people to listen to the gospel such as has never before been shown. In Japan, the earnest manner in which the native Christians have taken up the support of their own institutions and have entered into the evangelistic work is remarked. Missionary operations in Micronesia, after having been carried on for forty years with great benefit to the islanders, were now interfered with by the aggressions of the Germans in the Marshall Islands and of the Spaniards in the Caroline Islands. Remonstrances had been addressed by the Government to Spain, and amends were promised for the injurious treatment by that country of the missionaries and their property on Ponape; but as yet no relief had been obtained against the attacks of the Germans upon the native pastors and churches in the Marshall Islands. Yet the churches and schools in the Marshall Islands were well maintained, the number of communicants had been materially increased, and the quality of Christian life was improving. The work was prospering in the African missions. In Asiatic Turkey, interference of the Government with missionary work was complained of, with arrests and exile of teachers, and the burning of the new building for the girls' school at Marsovan, all showing, the report says, "that it is the settled purpose of the Ottoman Government to cripple the schools and churches which have been established by our missions, and eventually to drive out the missionaries themselves."

A committee of eleven, appointed at the preceding annual meeting to consider the relation of the board to the churches, and the question of increasing the number of corporate members, reported, recommending that a plan for securing a certain portion of its new members through the nomination of specified organizations of Congregational churches, temporarily adopted at the previous meeting, be continued for the next two years, and advising that the limit of corporate membership be fixed at the number of 350, and that, in addition to the vacancies regularly occurring, 25 persons be nominated and appointed for the next four years, beginning with 1894; also, that the by-laws be amended to correspond with this recommendation. The report was adopted. A number of memorials and resolutions relating to the subjects of enlarging the Prudential Committee, the appointment of missionaries, and other matters, were referred to a special committee of fifteen, which reported, recommending the appointment of an assistant secretary; the enlargement of the Prudential Committee at once to fifteen members, including the president and vice-president of the board; also,

That, beginning at the annual meeting of 1894, the members of the Prudential Committee shall be elected in three classes, one class to serve three years, one class two years, one class one year; that at the expiration of these terms members shall be chosen in classes for terms of three years each. It is further recommended that no member who has served three full successive terms shall be eligible for re-election till after a year has passed.

That the Prudential Committee be requested to secure the necessary legal authority, through a change in the charter, to carry the above vote into effect; together with the resolution,

That this board, in response to the expressed wish of its missionaries in Japan, and in recognition of the successful labors of the Rev. William H. Noyes in that empire, requests the Prudential Committee to offer him an appointment as a missionary of the board. The board declares that this action is not to be understood as in any way modifying its former utterances on the subject of future probation.

The recommendations and resolution were adopted.

In explanation of the course the board and he had pursued with reference to the appointment of the Rev. Mr. Noyes as a missionary, President Storrs said, in an address to the meeting:

Six years ago, when . . . you elected me to the presidency of this institution, I said that I could accept it only on the condition that I could find some way in which we all might walk and work together as Christian brethren, trying to advance the kingdom of the Lord on earth. That way I outlined in the letter of acceptance which I wrote a short time afterward, and which the board did me the honor to adopt as a practical basis of administration two years later, at the meeting in New York. In that letter of acceptance there was not a hair-breadth of compromise on the doctrinal position of the board. A certain hypothesis, which had been presented as a tolerable hypothesis, was regarded by me, as it was by many others, and as it still is by me, as a dangerous dream of the human mind, unauthorized by the Scriptures, and perhaps damaging to the souls of men. But I made the distinction, which I have made many times in the examination of candidates for license or candidates for ordination or installation, between that which a man thinks more or less loosely and the man himself, or a doctrine positively and centrally held by him. . . . I said in the letter to which I have referred that I thought that a just distinction, and that we were to estimate carefully and critically the spiritual force of any tendency which might appear in the candidate toward a doctrine which we might not indorse. As I understand it, the board itself has adopted and applied precisely that principle in the action which it took this morning. It recognizes that a man may be entangled in statements made by himself which he is not ready to repudiate, feeling, perhaps, that it would be unjust to his self-respect to do so, but which do not represent a part of his working theology. And so it was said that it does not change in any degree the doctrinal basis of the board, but it believes, or hopes—certainly, I think, believes—that this man, whose work has been seen and known of men in Japan, who is commended to the board by all the missionaries working in that empire connected with us, will work precisely as I said at Chicago last year, as if he knew that that hypothesis which has interested his mind was not a reality, but a dream. The board has exercised this generous confidence in him. I trust, and I surely hope, that the result will justify this expectation. It has not changed in any degree the doctrinal basis of the board, but it has given to this brother, laboring afar from us and commending himself thus far by his work, the opportunity to labor in its service and under its commission while he continues to labor in faithfulness and with zeal. This is what the board has done, and nothing else.



I believe firmly in the correctness and wisdom of each of the minutes adopted by the Prudential Committee in April and in June. I ought to, for I had some hand in shaping each of those minutes. I believe that we desired—I know we did—to appoint Mr. Noyes, as we stated in the first minute, and gave grounds upon which we could make the appointment. I believed, when certain declarations came from him to us, that it was not within the province of the committee to complete the appointment, but that it must be referred to the board. I reaffirm both the positions in those minutes, and nothing has been done which is inconsistent with them. The board has only exercised its authority, which it had not delegated to the committee, but which was perfectly within its own power and hand.

The Rev. E. K. Alden, D. D., the Rev. A. C. Thompson, D. D., and Elbridge Torrey, having declined re-election upon the Prudential Committee, a minute was adopted testifying to their high character and to the value of their services. Pledges were made to further the liquidation of the debt of the board, and a special committee was appointed to make an appeal to the churches for its immediate relief. A petition was telegraphed to Congress that the "Geary" anti-Chinese law be so amended that "its objectionable features imperiling the interests of all American subjects in China be eliminated."

**American Missionary Association.**—The forty-seventh annual meeting of the American Missionary Association was held at Elgin, Ill., Oct. 24 to 26. The Rev. Dr. Merrill E. Gates presided. The receipts for the year had been \$340,728, and the expenditures \$380,739. The educational work in the South included 78 schools, of which 5 were chartered colleges, 29 normal schools, and 43 schools of lower grades, with 389 instructors and 12,609 pupils. Among the most important and promising of these schools were the mountain schools specially provided for the people of the mountain districts of Kentucky and Tennessee. Twenty new churches had been formed, 14 of them in the mountain region. Assistance in the support of their pastor for the coming year had been pledged to a colony of Waldensians from Italy settled in Burke County, North Carolina. The whole number of churches in the South under the care of the association was 152, with 8,988 members, and 15,331 pupils in Sunday schools. Missionary work among the Indians was carried on in 12 schools, in which 858 pupils were enrolled, with 90 missionaries and teachers, and 1,300 pupils in Sunday schools, while 301 members had been added during the year to the Indian churches. The work among the Chinese included 21 schools, with 40 teachers and 1,215 pupils. A new feature had been introduced into it in the shape of an effort to reach the Chinese women in San Francisco, Cal., by means of woman missionaries and physicians. The following resolutions were adopted concerning the Chinese exclusion law:

*Whereas*, The law known as the Geary Act is in contravention of sacred promises made by the United States to China; and

*Whereas*, It distinguishes among immigrants to our country in a way utterly inconsistent with the vital principles of our nation and the inalienable rights of man; and

*Whereas*, It has been justly characterized by members of the highest tribunal of justice in our Government as "inhuman and brutal"; therefore be it

*Resolved*, That the American Missionary Association, the organ of the Congregational churches of the United States, in one great department of their missionary operations, and representing undoubtedly the sentiment of these churches, respectfully protests against this law and asks for its repeal.

*Resolved*, That the officers of this association are instructed to bring this, its action, to the attention of Congress as promptly and effectively as possible.

Forty State organizations of the Woman's Bureau were co-operating with the association, and had sent contributions to the treasury of \$16,324, besides helping in other ways.

**Congregational Union of England and Wales.**—The sixty-first annual assembly of the Congregational Union of England and Wales

was held in London, May 7. The Rev. G. S. Barrett, editor of the "Congregational Hymnal," was chosen chairman for the year. The annual report gave prominence to the question of the amalgamation of the Congregational societies. A tentative report had been submitted to the General Committee setting forth certain conclusions and making important suggestions. The committee recommended that it be laid before the committees of the different societies, and they be invited to communicate their views preparatory to a final report to be laid before the assembly in October. The committee had conditionally expressed its readiness to take into consideration a scheme for aiding ministers in time of sickness. A report had been submitted by a subcommittee, appointed to consider certain questions raised by the International Council, suggesting that it was a matter for consideration whether a joint permanent council, representing the Congregational Union, the Colonial Missionary Society, and the London Missionary Society, might not be appointed by annual vote to consider all questions arising in connection with the churches and populations, so as to be able to present their claims and report actual work done to the churches throughout the Congregational Union. The secretary of the Union had visited 90 churches and attended the sessions of 8 county unions. The assembly, by resolution, expressed its surprise and indignation that an endeavor had been made by the School Board of London to disturb the scheme of biblical and religious teaching, which was accepted as a practical compromise by the first board, and which had "worked successfully for twenty-two years"; declared that no attempt to enforce any definition of the word "Christian" could be made "without imposing a new religious test and consequent professional disability upon many excellent teachers"; and deprecated the introduction into any popular council of theological discussions and definitions. The Council on Secondary Education reported that it had issued a calendar of the public schools maintained by Congregationalists, and a wider appreciation of the inefficiency of these institutions was believed to have been already called into existence. It was hoped that, without injury to private establishments, something had been done to counteract the unjust and unintelligent impression that a secondary education could not be had in England apart from clerical and conformist influences. A report on the drift toward dogmatic teaching in schools, reviewing certain discussions and acts which had occurred, presented in

an appendix the facts on the present conditions of religious freedom at the seven great public schools and on regulations as to the conscience clause; and expressed the conclusion that though there was a determined attempt further to anglicize the religious teaching at the public schools, the difficulties in this way have only been brought into greater prominence, and that the discussion made it clear that the schools in question were not really at present tending toward ecclesiasticism, but "rather toward catholicity in its true sense." The assembly recommended that, in view of the leakage of members by emigration to the British colonies, pastors send details of expected removals to the office of the Colonial Missionary Society for transmittal to ministers in the colonies, that they may look after the persons on arrival. A special representative committee was appointed to consider the subject of Church extension in England and Wales and report upon it as soon as possible. The introduction of the Welsh Suspensory bill was welcomed as a preliminary to the disestablishment of the Church of England in Wales and an affirmation of the principle of religious equality. The introduction by the Government of the Local Veto bill was approved as a recognition of the principle of popular control over the liquor traffic. A special committee was appointed, in which each college should be equally represented, to consider how the colleges may be adapted more fully to the needs of the time either by consolidation or by extension by development of internal conditions and by intercollegiate and interdenominational relationships, the committee to confer with the governing body of each college and report.

At the autumnal meeting of the Union, Oct. 16, a committee was appointed to confer with the council of the Church Aid Society concerning the desirability, or otherwise, of its amalgamation with the Union; of establishing a sustentation fund; or, if these be deemed impracticable, of modifying the constitution of the Church Aid Society according to such suggestions as may have been or may be made. The Christian sympathy of the assembly was expressed with the persecuted Stundists and other Christians in Russia, as well as with all who in other lands are suffering for the gospel's sake. The resolution also expressed the deep concern of the assembly at the "intolerant spirit displayed by some European governments toward those who, though compelled by conscience to separate themselves from the national Church of the country, are yet known to be peaceable and law-abiding citizens." A resolution was passed regretting the unsettled condition of questions affecting the relations of capital and labor; lamenting the widespread distress resulting from strikes and lockouts in the colliery and other trades, and bearing testimony "to the ethical principle that the rights of humanity must always take precedence of those of property"; declaring "that alike mining royalties and profits made out of the labors of men receiving wages inadequate for the support of themselves and their families are obviously inconsistent with righteousness and fraternity"; and recommending the submitting "of all labor disputes to settlement by impartial tribunals." Another reso-

lution called upon the Government to enforce at once upon all administrators of English law in India an absolute obedience to the will of the Imperial Parliament, and suggesting that "the only effective measure of enforcing the law was by penal legislation." The approval of the Union was given to what had already been done by the Government in the direction of disestablishment in Wales and Scotland, and the trust was expressed that that policy might be pressed forward, at the earliest practicable period, "not only that justice may be done to the inhabitants of those countries, but that the time may be hastened when in England also, and throughout the empire, all Christian churches may be self-sustained and self-governed communities."

Meetings of the National Council of Congregational Guilds and Young People's Meetings were held in connection with the assembly.

### **Tercentenary of Congregational Martyrs.**

—The tercentenary of the martyrdom of Henry Barrowe, John Greenwood (executed at Tyburn, April 6, 1593) and John Penry (executed May 29 of the same year) was celebrated in Hyde Park, London, near the Reformers' Tree, April 8. The procession marched behind a banner bearing the inscription, "In memory of Barrow, Greenwood, and Penry, who died in the cause of liberty three hundred years ago." Mr. T. E. Ellis, M. P., presided, and addresses were made by him, Dr. Clifford, the Rev. Hugh Price Hughes, the Rev. P. Williams, and the Rev. Sylvester Horne; and a resolution was adopted, That we who are here assembled (representing the free Churches of London) gratefully commemorate the heroic martyrs of our faith who died in vindication of our religious privileges three hundred years ago; that we recognize, with devout thankfulness to God, the blessings won for all the people by their fidelity; and that we solemnly pledge ourselves strenuously to maintain the heritage committed unto us and steadfastly to labor for the perfecting of religious liberty, the spread of religious truth, and the promotion of Christian righteousness and brotherhood among our fellow-men.

The celebrations were continued at the autumnal meetings of the Congregational Union in October, when addresses were delivered on "The Principles for which the Separatists contended," by the Rev. Dr. Albert Goodrich; "The Effects of their Testimony on the National Life," by the Rev. Dr. Robert Bruce; "The Spiritual Development of Congregationalism," by the Rev. Samuel Pearson; and "The Relation of Congregational Principles to the Life and Controversies of To-day," by the Rev. Alfred Rowland. The meetings were closed with a united thanksgiving meeting of free Churchmen, Oct. 17, when addresses were delivered by the Rev. J. G. Rogers, Congregationalist; the Rev. C. H. Kelly, Wesleyan; the Rev. T. M. Morris, President of the Baptist Union, and the Rev. J. B. Meharry, Presbyterian.

**Home Missions.**—In the home mission stations of England and Wales during the financial year 1892-'93, 927 churches and missions were aided by grants to the extent of £22,710, in addition to £95,531 raised locally. These churches have supported 549 pastors and evangelists; they have 33,728 communicants, an increase for the year of 1,213. The places thus aided afford accommodation for 222,290 persons.



**London Missionary Society.**—The annual meeting of the London Missionary Society was held in London, May 7. The balance sheet showed that while the society had begun the year with a balance of £9,000 in hand, it had closed it with a debt of £13,000. The expenditures had risen from £112,496 in 1892 to £137,048. Thirty-eight missionaries had been added to the staff of the society, and in two years the number had increased from 196 to 245, or, including the wives of missionaries, to 391.

**Union of Churches in Scotland.**—Joint meetings of the Committees of the Evangelical Union and of the Congregational Union of Scotland were held in Edinburgh in March to consider the question of the amalgamation of the two bodies. A resolution was unanimously adopted declaring such a union desirable, and asserting that there were no real difficulties in the way. Special committees were appointed to draw up a theological basis of agreement, and also to draft plans for the union and working of the various denominational societies.

**CONGRESS OF THE UNITED STATES.** The second session of the Fifty-second Congress began on Monday, Dec. 5, 1892. On the next day the President's annual message was read, as follows:

*To the Senate and House of Representatives:*

In submitting my annual message to Congress, I have great satisfaction in being able to say that the general conditions affecting the commercial and industrial interests of the United States are in the highest degree favorable. A comparison of the existing conditions with those of the most favored period in the history of the country will, I believe, show that so high a degree of prosperity and so general a diffusion of the comforts of life were never before enjoyed by our people.

The total wealth of the country in 1860 was \$16,159,616,068. In 1890 it amounted to \$62,610,000,000, an increase of 287 per cent.

The total mileage of railways in the United States in 1860 was 30,626; in 1890 it was 167,741, an increase of 448 per cent.; and it is estimated that there will be about 4,000 miles of track added by the close of the year 1892.

The official returns of the eleventh census and those of the tenth census for 75 leading cities furnish the basis for the following comparisons:

In 1880 the capital invested in manufacturing was \$1,232,839,670.

In 1890 the capital invested in manufacturing was \$2,900,735,884.

In 1880 the number of employees was 1,301,388.

In 1890 the number of employees was 2,251,134.

In 1880 the wages earned were \$501,965,778.

In 1890 the wages earned were \$1,221,170,454.

In 1880 the value of the product was \$2,711,579,899.

In 1890 the value of the product was \$4,860,286,837.

I am informed by the Superintendent of the Census that the omission of certain industries in 1880, which were included in 1890, accounts in part for the remarkable increase thus shown. But, after making full allowance for differences of method and deducting the returns for all industries not included in the census of 1880, there remain in the reports from these 75 cities an increase in the capital employed of \$1,522,745,604; in the value of the product of \$2,024,236,166; in wages earned of \$677,943,929, and in the number of wage earners employed of 856,029. The wage earnings not only show an increased aggregate, but an increase *per capita* from \$386 in 1880 to \$547 in 1890, or 41.71 per cent.

The new industrial plants established since Oct. 6, 1890, and up to Oct. 22, 1892, as partially reported

in the "American Economist," number 345, and the extension of existing plants 108; the new capital invested amounts to \$40,449,050, and the number of additional employees to 37,285.

The "Textile World" for July, 1892, states that during the first six months of the present calendar year 135 new factories were built, of which 40 are cotton mills, 48 knitting mills, 26 woolen mills, 15 silk mills, 4 plush mills, and 2 linen mills. Of the 40 cotton mills 21 have been built in the Southern States. Mr. A. B. Shepperson, of the New York Cotton Exchange, estimates the number of working spindles in the United States on Sept. 1, 1892, at 15,200,000, an increase of 660,000 over the year 1891. The consumption of cotton by American mills in 1891 was 2,396,000 bales, and in 1892 2,584,000 bales, an increase of 188,000 bales. From the year 1869 to 1892, inclusive, there has been an increase in the consumption of cotton in Europe of 92 per cent., while during the same period the increased consumption in the United States has been about 150 per cent.

The report of Ira Ayer, special agent of the Treasury Department, shows that at the date of Sept. 30, 1892, there were 32 companies manufacturing tin andterne plate in the United States and 14 companies building new works for such manufacture. The estimated investment in buildings and plants at the close of the fiscal year, June 30, 1893, if existing conditions were to be continued, was \$5,000,000, and the estimated rate of production 200,000,000 pounds per annum. The actual production for the quarter ending Sept. 30, 1892, was 10,952,725 pounds.

The report of Labor Commissioner Peck, of New York, shows that during the year 1891, in about 6,000 manufacturing establishments in that State embraced within the special inquiry made by him, and representing 67 different industries, there was a net increase over the year 1890 of \$81,315,130.68 in the value of the product, and of \$6,377,925.09 in the amount of wages paid. The report of the commissioner of labor for the State of Massachusetts shows that 3,745 industries in that State paid \$129,416,248 in wages during the year 1891, against \$126,030,303 in 1890, an increase of \$3,385,945, and that there was an increase of \$9,932,490 in the amount of capital and of 7,346 in the number of persons employed in the same period.

During the last six months of the year 1891 and the first six months of 1892 the total production of pig iron was 9,710,819 tons, as against 9,202,703 tons in the year 1890, which was the largest annual production ever attained. For the same twelve months of 1891-'92 the production of Bessemer ingots was 3,878,581 tons, an increase of 189,710 gross tons over the previously unprecedented yearly production of 3,688,871 gross tons in 1890. The production of Bessemer steel rails for the first six months of 1892 was 772,436 gross tons, as against 702,080 gross tons during the last six months of the year 1891.

The total value of our foreign trade (exports and imports of merchandise) during the last fiscal year was \$1,857,680,610, an increase of \$128,283,604 over the previous fiscal year. The average annual value of our imports and exports of merchandise for the ten fiscal years prior to 1891 was \$1,457,322,019. It will be observed that our foreign trade for 1892 exceeded this annual average value by \$400,358,591, an increase of 27.47 per cent. The significance and value of this increase are shown by the fact that the excess in the trade of 1892 over 1891 was wholly in the value of exports, for there was a decrease in the value of imports of \$17,513,754.

The value of our exports during the fiscal year 1892 reached the highest figure in the history of the Government, amounting to \$1,030,278,148, exceeding by \$145,797,338 the exports of 1891, and exceeding the value of the imports by \$202,875,686. A comparison of the value of our exports for 1892 with the annual average for the ten years prior to 1891 shows an excess of \$265,142,651, or of 34.65 per cent. The value of our imports of merchandise for 1892, which was



\$829,402,462, also exceeded the annual average value of the ten years prior to 1891 by \$135,215,940. During the fiscal year 1892 the value of imports free of duty amounted to \$457,999,658, the largest aggregate in the history of our commerce. The value of the imports of merchandise entered free of duty in 1892 was 55.35 per cent. of the total value of imports, as compared with 43.35 per cent. in 1891 and 33.66 per cent. in 1890.

In our coastwise trade a most encouraging development is in progress, there having been in the last four years an increase of 16 per cent. In internal commerce the statistics show that no such period of prosperity has ever before existed. The freight carried in the coastwise trade of the Great Lakes in 1890 aggregated 28,295,959 tons. On the Mississippi, Missouri, and Ohio rivers and tributaries in the same year the traffic aggregated 29,405,046 tons, and the total vessel tonnage passing through the Detroit river during that year was 21,684,000 tons. The vessel tonnage entered and cleared in the foreign trade of London during 1890 amounted to 13,480,767 tons, and of Liverpool 10,941,800 tons, a total for these two great shipping ports of 24,422,568 tons, only slightly in excess of the vessel tonnage passing through the Detroit river. And it should be said that the season for the Detroit river was but two hundred and twenty-eight days, while, of course, in London and Liverpool the season was for the entire year. The vessel tonnage passing through the St. Mary's Canal for the fiscal year 1892 amounted to 9,828,874 tons, and the freight tonnage of the Detroit river is estimated for that year at 25,000,000 tons, against 23,209,619 tons in 1891. The aggregate traffic on our railroads for the year 1891 amounted to 704,398,609 tons of freight, compared with 691,344,437 tons in 1890, an increase of 13,054,172 tons.

Another indication of the general prosperity of the country is found in the fact that the number of depositors in savings banks increased from 693,870 in 1860 to 4,258,893 in 1890, an increase of 513 per cent., and the amount of deposits from \$149,277,504 in 1860 to \$1,524,844,506 in 1890, an increase of 921 per cent. In 1891 the amount of deposits in savings banks was \$1,623,079,749. It is estimated that 90 per cent. of these deposits represent the savings of wage earners. The bank clearances for nine months ending Sept. 30, 1891, amounted to \$41,049,390,808. For the same months in 1892 they amounted to \$45,189,601,947, an excess for the nine months of \$4,140,211,139.

There never has been a time in our history when work was so abundant or when wages were as high, whether measured by the currency in which they are paid or by their power to supply the necessities and comforts of life. It is true that the market prices of cotton and wheat have been low. It is one of the unfavorable incidents of agriculture that the farmer can not produce upon orders. He must sow and reap in ignorance of the aggregate production of the year, and is peculiarly subject to the depreciation which follows overproduction. But, while the fact I have stated is true as to the crops mentioned, the general average of prices has been such as to give to agriculture a fair participation in the general prosperity. The value of our total farm products has increased from \$1,363,646,866 in 1860 to \$4,500,000,000 in 1891, as estimated by statisticians, an increase of 230 per cent. The number of hogs, Jan. 1, 1891, was 50,625,106, and their value \$210,193,925; on Jan. 1, 1892, the number was 52,398,019, and the value \$241,031,415. On Jan. 1, 1891, the number of cattle was 36,875,648, and the value \$544,127,908; on Jan. 1, 1892, the number was 37,651,239, and the value \$570,749,155.

If any are discontented with their state here; if any believe that wages or prices, the returns for honest toil, are inadequate, they should not fail to remember that there is no other country in the world where the conditions that seem to them hard would not be accepted as highly prosperous. The English agriculturist would be glad to exchange the returns of his labor for those of the American farmer, and

the Manchester workmen their wages for those of their fellows at Fall River.

I believe that the protective system, which has now for something more than thirty years continuously prevailed in our legislation, has been a mighty instrument for the development of our national wealth and a most powerful agency in protecting the homes of our workmen from the invasion of want. I have felt a most solicitous interest to preserve to our working people rates of wages that would not only give daily bread, but supply a comfortable margin for those home attractions and family comforts and enjoyments without which life is neither hopeful nor sweet. They are American citizens—a part of the great people for whom our Constitution and Government were framed and instituted—and it can not be a perversion of that Constitution to so legislate as to preserve in their homes the comfort, independence, loyalty, and sense of interest in the Government which are essential to good citizenship in peace, and which will bring this stalwart throng, as in 1861, to the defense of the flag when it is assailed.

It is not my purpose to renew here the argument in favor of a protective tariff. The result of the recent election must be accepted as having introduced a new policy. We must assume that the present tariff, constructed upon the lines of protection, is to be repealed, and that there is to be substituted for it a tariff law constructed solely with reference to revenue; that no duty is to be higher because the increase will keep open an American mill or keep up the wages of an American workman, but that in every case such a rate of duty is to be imposed as will bring to the Treasury of the United States the largest returns of revenue. The contention has not been between schedules, but between principles, and it would be offensive to suggest that the prevailing party will not carry into legislation the principles advocated by it and the pledges given to the people. The tariff bills passed by the House of Representatives at the last session were, as I suppose—even in the opinion of their promoters—inadequate, and justified only by the fact that the Senate and House of Representatives were not in accord, and that a general revision could not therefore be undertaken.

I recommend that the whole subject of tariff revision be left to the incoming Congress. It is matter of regret that this work must be delayed for at least three months; for the threat of great tariff changes introduces so much uncertainty that an amount, not easily estimated, of business inaction and of diminished production will necessarily result. It is possible also that this uncertainty may result in decreased revenues from customs duties, for our merchants will make cautious orders for foreign goods in view of the prospect of tariff reductions and the uncertainty as to when they will take effect. Those who have advocated a protective tariff can well afford to have their disastrous forecasts of a change of policy disappointed.

If a system of customs duties can be framed that will set the idle wheels and looms of Europe in motion and crowd our warehouses with foreign-made goods, and at the same time keep our own mills busy; that will give us an increased participation in the "markets of the world" of greater value than the home market we surrender; that will give increased work to foreign workmen upon products to be consumed by our people without diminishing the amount of work to be done here; that will enable the American manufacturer to pay to his workmen from 50 to 100 per cent. more in wages than is paid in the foreign mill and yet to compete in our market and in foreign markets with the foreign producer; that will further reduce the cost of articles of wear and food without reducing the wages of those who produce them; that can be celebrated, after its effects have been realized, as its expectation has been, in European as well as in American cities, the authors and promoters of it will be entitled to the highest praise. We have had in our history several experi-



ences of the contrasted effects of a revenue and of a protective tariff; but this generation has not felt them, and the experience of one generation is not highly instructive to the next. The friends of the protective system, with undiminished confidence in the principles they have advocated, will await the results of the new experiment.

The strained and too often disturbed relations existing between the employees and the employers in our great manufacturing establishments have not been favorable to a calm consideration by the wage earner of the effect upon wages of the protective system. The facts that his wages were the highest paid in like callings in the world and that a maintenance of this rate of wages, in the absence of protective duties upon the product of his labor, was impossible, were obscured by the passion evoked by these contests. He may now be able to review the question in the light of his personal experience under the operation of a tariff for revenue only. If that experience shall demonstrate that present rates of wages are thereby maintained or increased, either absolutely or in their purchasing power, and that the aggregate volume of work to be done in this country is increased, or even maintained, so that there are more or as many days' work in a year at as good or better wages for the American workman as has been the case under the protective system, every one will rejoice.

A general process of wage reduction can not be contemplated by any patriotic citizen without the gravest apprehension. It may be, indeed I believe is, possible for the American manufacturer to compete successfully with his foreign rival in many branches of production without the defense of protective duties if the pay rolls are equalized; but the conflict that stands between the producer and that result and the distress of our working people when it is attained are not pleasant to contemplate. The Society of the Unemployed, now holding its frequent and threatening parades in the streets of foreign cities, should not be allowed to acquire an American domicile.

The reports of the heads of the several executive departments which are herewith submitted have very naturally included a *résumé* of the whole work of the administration with the transactions of the last fiscal year. The attention not only of Congress but of the country is again invited to the methods of administration which have been pursued and to the results which have been attained. Public revenues amounting to \$1,414,079,292.23 have been collected and disbursed without loss from misappropriation, without a single defalcation of such importance as to attract the public attention, and at a diminished per cent. of cost for collection. The public business has been transacted not only with fidelity, but progressively, and with a view to giving to the people in the fullest possible degree the benefits of a service established and maintained for their protection and comfort.

Our relations with other nations are now undisturbed by any serious controversy. The complicated and threatening differences with Germany and England relating to Samoan affairs, with England in relation to the seal fisheries in the Bering Sea, and with Chili growing out of the Baltimore affair have been adjusted.

There have been negotiated and concluded, under section 3 of the tariff law, commercial agreements relating to reciprocal trade with the following countries: Brazil, Dominican Republic, Spain for Cuba and Puerto Rico, Guatemala, Salvador, the German Empire, Great Britain for certain West Indian colonies and British Guiana, Nicaragua, Honduras, and Austria-Hungary.

Of these, those with Guatemala, Salvador, the German Empire, Great Britain, Nicaragua, Honduras, and Austria-Hungary have been concluded since my last annual message. Under these trade arrangements a free or favored admission has been secured in every case for an important list of American products. Especial care has been taken to secure markets for farm

products in order to relieve that great underlying industry of the depression which the lack of an adequate foreign market for our surplus often brings. An opening has also been made for manufactured products that will undoubtedly, if this policy is maintained, greatly augment our export trade. The full benefits of these arrangements can not be realized instantly. New lines of trade are to be opened. The commercial traveler must survey the field. The manufacturer must adapt his goods to the new markets and facilities for exchange must be established. This work has been well begun, our merchants and manufacturers having entered the new fields with courage and enterprise. In the case of food products, and especially with Cuba, the trade did not need to wait, and the immediate results have been most gratifying. If this policy and these trade arrangements can be continued in force and aided by the establishment of American steamship lines, I do not doubt that we shall, within a short period, secure fully one third of the total trade of the countries of Central and South America, which now amounts to about \$600,000,000 annually. In 1885 we had only 8 per cent. of this trade.

The following statistics show the increase in our trade with the countries with which we have reciprocal trade agreements from the date when such agreements went into effect up to Sept. 30, 1892, the increase being in some almost wholly and in others in an important degree the result of these agreements.

The domestic exports to Germany and Austria-Hungary have increased in value from \$47,673,756 to \$57,993,064, an increase of \$10,319,308, or 21.63 per cent. With American countries the value of our exports has increased from \$44,160,285 to \$54,613,598, an increase of \$10,453,313, or 23.67 per cent. The total increase in the value of exports to all the countries with which we have reciprocity agreements has been \$20,772,621. This increase is chiefly in wheat, flour, meat, and dairy products, and in manufactures of iron and steel and lumber. There has been a large increase in the value of imports from all these countries since the commercial agreements went into effect, amounting to \$74,294,525, but it has been entirely in imports from the American countries, consisting mostly of sugar, coffee, India rubber, and crude drugs. The alarmed attention of our European competitors for the South American market has been attracted to this new American policy, and to our acquisition and their loss of South American trade.

A treaty providing for the arbitration of the dispute between Great Britain and the United States as to the killing of seals in the Bering Sea was concluded on the 29th of February last. This treaty was accompanied by an agreement prohibiting pelagic sealing pending the arbitration, and a vigorous effort was made during this season to drive out all poaching sealers from the Bering Sea. Six naval vessels, 3 revenue cutters, and 1 vessel from the Fish Commission, all under the command of Commander Evans, of the navy, were sent into the sea, which was systematically patrolled. Some seizures were made, and it is believed that the catch in the Bering Sea by poachers amounted to less than 500 seals. It is true, however, that in the north Pacific, while the seal herds were on their way to the passes between the Aleutian Islands, a very large number, probably 35,000, were taken. The existing statutes of the United States do not restrain our citizens from taking seals in the Pacific Ocean, and perhaps should not, unless the prohibition can be extended to the citizens of other nations. I recommend that power be given to the President, by proclamation, to prohibit the taking of seals in the north Pacific by American vessels, in case, either as the result of the findings of the tribunal of arbitration, or otherwise, the restraints can be applied to the vessels of all countries. The case of the United States for the tribunal of arbitration has been prepared with great care and industry by the Hon. John W. Foster, and the counsel who represent this Government express confidence that a result substantially establishing our claims and preserving this



great industry for the benefit of all nations will be attained.

During the past year a suggestion was received through the British minister that the Canadian Government would like to confer as to the possibility of enlarging, upon terms of mutual advantage, the commercial exchanges of Canada and of the United States, and a conference was held at Washington, with Mr. Blaine acting for this Government, and the British minister at this capital and three members of the Dominion Cabinet acting as commissioners on the part of Great Britain. The conference developed the fact that the Canadian Government was only prepared to offer to the United States, in exchange for the concessions asked, the admission of natural products. The statement was frankly made that favored rates could not be given to the United States as against the mother country. This admission, which was foreseen, necessarily terminated the conference upon this question. The benefits of an exchange of natural products would be almost wholly with the people of Canada. Some other topics of interest were considered in the conference, and have resulted in the making of a convention for examining the Alaskan boundary and the waters of Passamaquoddy Bay adjacent to Eastport, Me., and in the initiation of an arrangement for the protection of fish life in the coterminous and neighboring waters of our northern border.

The controversy as to tolls upon the Welland Canal, which was presented to Congress at the last session by special message, having failed of adjustment, I felt constrained to exercise the authority conferred by the act of July 26, 1892, and to proclaim a suspension of the free use of St. Mary's Falls Canal to cargoes in transit to ports in Canada. The Secretary of the Treasury established such tolls as were thought to be equivalent to the exactions unjustly levied upon our commerce in the Canadian canals.

If, as we must suppose, the political relations of Canada and the disposition of the Canadian Government are to remain unchanged, a somewhat radical revision of our trade relations should, I think, be made. Our relations must continue to be intimate, and they should be friendly. I regret to say, however, that in many of the controversies, notably those as to the fisheries on the Atlantic, the sealing interests on the Pacific, and the canal tolls, our negotiations with Great Britain have continuously been thwarted or retarded by unreasonable and unfriendly objections and protests from Canada. In the matter of the canal tolls our treaty rights were flagrantly disregarded. It is hardly too much to say that the Canadian Pacific and other railway lines which parallel our northern boundary are sustained by commerce having either its origin or terminus, or both, in the United States. Canadian railroads compete with those of the United States for our traffic, and without the restraints of our interstate-commerce act. Their cars pass almost without detention into and out of our territory.

The Canadian Pacific Railway brought into the United States from China and Japan, *via* British Columbia, during the year ended June 30, 1892, 23,239,689 pounds of freight, and it carried from the United States, to be shipped to China and Japan, *via* British Columbia, 24,068,346 pounds of freight. There were also shipped from the United States over this road from Eastern ports of the United States to our Pacific ports during the same year 13,912,073 pounds of freight, and there were received over this road at the United States Eastern ports from ports on the Pacific coast 13,293,315 pounds of freight. Mr. Joseph Nimmo, Jr., former Chief of the Bureau of Statistics, when before the Senate Select Committee on Relations with Canada, April 26, 1890, said that "the value of goods thus transported between different points in the United States across Canadian territory probably amounts to \$100,000,000 a year."

There is no disposition on the part of the people or Government of the United States to interfere in the smallest degree with the political relations of Canada. That question is wholly with her own people. It is

time for us, however, to consider whether, if the present state of things and trend of things is to continue, our interchanges upon lines of land transportation should not be put upon a different basis, and our entire independence of Canadian canals and of the St. Lawrence as an outlet to the sea secured by the construction of an American canal around the falls of Niagara and the opening of ship communication between the Great Lakes and one of our own seaports. We should not hesitate to avail ourselves of our great natural trade advantages. We should withdraw the support which is given to the railroads and steamship lines of Canada by a traffic that properly belongs to us, and no longer furnish the earnings which lighten the otherwise crushing weight of the enormous public subsidies that have been given to them. The subject of the power of the Treasury to deal with this matter without further legislation has been under consideration, but circumstances have postponed a conclusion. It is probable that a consideration of the propriety of a modification or abrogation of the article of the Treaty of Washington relating to the transit of goods in bond is involved in any complete solution of the question.

Congress at the last session was kept advised of the progress of the serious and, for a time, threatening differences between the United States and Chili. It gives me now great gratification to report that the Chilean Government, in a most friendly and honorable spirit, has tendered and paid as an indemnity to the families of the sailors of the Baltimore who were killed and to those who were injured in the outbreak in the city of Valparaiso the sum of \$75,000. This has been accepted, not only as an indemnity for a wrong done, but as a most gratifying evidence that the Government of Chili rightly appreciates the disposition of this Government to act in a spirit of the most absolute fairness and friendliness in our intercourse with that brave people. A further and conclusive evidence of the mutual respect and confidence now existing is furnished by the fact that a convention submitting to arbitration the mutual claims of the citizens of the respective governments has been agreed upon. Some of these claims have been pending for many years, and have been the occasion of much unsatisfactory diplomatic correspondence.

I have endeavored in every way to assure our sister republics of Central and South America that the United States Government and its people have only the most friendly disposition toward them all. We do not covet their territory. We have no disposition to be oppressive or exacting in our dealings with any of them, even the weakest. Our interests and our hopes for them all lie in the direction of stable governments by their people and of the largest development of their great commercial resources. The mutual benefits of enlarged commercial exchanges and of a more familiar and friendly intercourse between our peoples we do desire, and in this have sought their friendly co-operation.

I have believed, however, while holding these sentiments in the greatest sincerity, that we must insist upon a just responsibility for any injuries inflicted upon our official representatives or upon our citizens. This insistence, kindly and justly, but firmly made, will, I believe, promote peace and mutual respect.

Our relations with Hawaii have been such as to attract an increased interest, and must continue to do so. I deem it of great importance that the projected submarine cable, a survey for which has been made, should be promoted. Both for naval and commercial uses we should have quick communication with Honolulu. We should before this have availed ourselves of the concession, made many years ago to this Government, for a harbor and naval station at Pearl river. Many evidences of the friendliness of the Hawaiian Government have been given in the past, and it is gratifying to believe that the advantage and necessity of a continuance of very close relations is appreciated.

The friendly act of this Government in expressing



to the Government of Italy its reprobation and abhorrence of the lynching of Italian subjects in New Orleans by the payment of 125,000 francs, or \$24,380.90, was accepted by the King of Italy with every manifestation of gracious appreciation, and the incident has been highly promotive of mutual respect and good will.

In consequence of the action of the French Government in proclaiming a protectorate over certain tribal districts of the west coast of Africa eastward of the San Pedro river, which has long been regarded as the southeastern boundary of Liberia, I have felt constrained to make protest against this encroachment upon the territory of a republic which was founded by citizens of the United States, and toward which this country has for many years held the intimate relation of a friendly counselor.

The recent disturbances of the public peace by lawless foreign marauders on the Mexican frontier have afforded this Government an opportunity to testify its good will for Mexico and its earnest purpose to fulfill the obligations of international friendship by pursuing and dispersing the evil doers. The work of relocating the boundary of the treaty of Guadalupe Hidalgo, westward from El Paso, is progressing favorably.

Our intercourse with Spain continues on a friendly footing. I regret, however, not to be able to report as yet the adjustment of the claims of the American missionaries arising from the disorders at Ponape, in the Caroline Islands, but I anticipate a satisfactory adjustment in view of renewed and urgent representations to the Government at Madrid.

The treatment of the religious and educational establishments of American citizens in Turkey has of late called for a more than usual share of attention. A tendency to curtail the toleration which has so beneficially prevailed is discernible, and has called forth the earnest remonstrances of this Government. Harassing regulations in regard to schools and churches have been attempted in certain localities, but not without due protest and the assertion of the inherent and conventional rights of our countrymen. Violations of domicile and search of the persons and effects of citizens of the United States by apparently irresponsible officials in the Asiatic *vilayets* have from time to time been reported. An aggravated instance of injury to the property of an American missionary at Bourdour, in the province of Konia, called for than urgent claim for reparation, which I am pleased to say was promptly heeded by the Government of the Porte. Interference with the trading ventures of our citizens in Asia Minor is also reported, and the lack of consular representation in that region is a serious drawback to instant and effective protection. I can not believe that these incidents represent a settled policy, and shall not cease to urge the adoption of proper remedies.

International copyright has been extended to Italy by proclamation in conformity with the act of March 3, 1891, upon assurance being given that Italian law permits to citizens of the United States the benefit of copyright on substantially the same basis as to subjects of Italy. By a special convention, proclaimed Jan. 15, 1892, reciprocal provisions of copyright have been applied between the United States and Germany. Negotiations are in progress with other countries to the same end.

I repeat with great earnestness the recommendation which I have made in several previous messages that prompt and adequate support be given to the American company engaged in the construction of the Nicaragua Ship Canal. It is impossible to overstate the value from every standpoint of this great enterprise, and I hope that there may be time, even in this Congress, to give to it an impetus that will insure the early completion of the canal, and secure to the United States its proper relation to it when completed.

The Congress has been already advised that the invitations of this Government for the assembling

of an international monetary conference to consider the question of an enlarged use of silver were accepted by the nations to which they were addressed. The conference assembled at Brussels on the 22d of November, and has entered upon the consideration of this great question. I have not doubted, and have taken occasion to express that belief as well in the invitations issued for this conference as in my public messages, that the free coinage of silver upon an agreed international ratio would greatly promote the interests of our people and equally those of other nations. It is too early to predict what results may be accomplished by the conference. If any temporary check or delay intervenes, I believe that very soon commercial conditions will compel the now reluctant governments to unite with us in this movement to secure the enlargement of the volume of coined money needed for the transaction of the business of the world.

The report of the Secretary of the Treasury will attract especial interest in view of the many misleading statements that have been made as to the state of the public revenues. Three preliminary facts should not only be stated, but emphasized, before looking into details: First, that the public debt has been reduced since March 4, 1889, \$259,074,200, and the annual interest charge \$11,684,469; second, that there have been paid out for pensions during this administration up to Nov. 1, 1892, \$432,564,178.70, an excess of \$114,466,386.09 over the sum expended during the period from March 1, 1885, to March 1, 1889; and, third, that under the existing tariff up to Dec. 1 about \$93,000,000 of revenue, which would have been collected upon imported sugars if the duty had been maintained, has gone into the pockets of the people and not into the public treasury, as before. If there are any who still think that the surplus should have been kept out of circulation by hoarding it in the Treasury, or deposited in favored banks without interest while the Government continued to pay to these very banks interest upon the bonds deposited as security for the deposits, or who think that the extended pension legislation was a public robbery, or that the duties upon sugar should have been maintained, I am content to leave the argument where it now rests, while we wait to see whether these criticisms will take the form of legislation.

The revenues for the fiscal year ending June 30, 1892, from all sources were \$425,868,260.22, and the expenditures for all purposes were \$415,953,806.56, leaving a balance of \$9,914,453.66. There were paid during the year upon the public debt \$40,570,467.98. The surplus in the Treasury and the bank redemption fund, passed by the act of July 14, 1890, to the general fund, furnished in large part the cash available and used for the payments made upon the public debt. Compared with the year 1891, our receipts from customs duties fell off \$42,069,241.08, while our receipts from internal revenue increased \$8,284,823.13, leaving the net loss of revenue from these principal sources \$33,784,417.95. The net loss of revenue from all sources was \$32,675,972.81.

The revenues, estimated and actual, for the fiscal year ending June 30, 1893, are placed by the Secretary at \$463,336,350.44, and the expenditures at \$461,336,350.44, showing a surplus of receipts over expenditures of \$2,000,000. The cash balance in the Treasury at the end of the fiscal year, it is estimated, will be \$20,992,377.03.

So far as these figures are based upon estimates of receipts and expenditures for the remaining months of the current fiscal year, there are not only the usual elements of uncertainty, but some added elements. New revenue legislation, or even the expectation of it, may seriously reduce the public revenues during the period of uncertainty and during the process of business adjustment to the new conditions when they become known. But the Secretary has very wisely refrained from guessing as to the effect of possible changes in our revenue laws, since the scope of those changes and the time of their taking effect can not in



any degree be forecast or foretold by him. His estimates must be based upon existing laws and upon a continuance of existing business conditions, except so far as these conditions may be affected by causes other than new legislation.

The estimated receipts for the fiscal year ending June 30, 1894, are \$490,121,365.38, and the estimated appropriations \$457,261,335.33, leaving an estimated surplus of receipts over expenditures of \$32,860,030.05. This does not include any payment to the sinking fund. In the recommendation of the Secretary that the sinking-fund law be repealed I concur. The redemption of bonds since the passage of the law to June 30, 1892, has already exceeded the requirements by the sum of \$990,510,681.49. The retirement of bonds in the future before maturity should be a matter of convenience, not of compulsion. We should not collect revenue for that purpose, but only use any casual surplus. To the balance of \$32,860,030.05 of receipts over expenditures for the year 1894 should be added the estimated surplus at the beginning of the year, \$20,992,377.03; and from this aggregate there must be deducted, as stated by the Secretary, about \$44,000,000 of estimated unexpended appropriations.

The public confidence in the purpose and ability of the Government to maintain the parity of all of our money issues, whether coin or paper, must remain unshaken. The demand for gold in Europe and the consequent calls upon us are in a considerable degree the result of the efforts of some of the European governments to increase their gold reserves, and these efforts should be met by appropriate legislation on our part. The conditions that have created this drain of the Treasury gold are in an important degree political, and not commercial. In view of the fact that a general revision of our revenue laws in the near future seems to be probable, it would be better that any changes should be a part of that revision rather than of a temporary nature.

During the last fiscal year the Secretary purchased, under the act of July 14, 1890, 54,355,748 ounces of silver, and issued in payment therefor \$51,106,608 in notes. The total purchases since the passage of the act have been 120,479,981 ounces, and the aggregate of notes issued \$116,783,590. The average price paid for silver during the year was 94 cents per ounce, the highest price being \$1.02½, July 1, 1891, and the lowest 83 cents, March 21, 1892. In view of the fact that the monetary conference is now sitting and that no conclusion has yet been reached, I withhold any recommendation as to legislation upon this subject.

The report of the Secretary of War brings again to the attention of Congress some important suggestions as to the reorganization of the infantry and artillery arms of the service, which his predecessors have before urgently presented. Our army is small, but its organization should all the more be put upon the most approved modern basis. The conditions upon what we have called the "frontier" have heretofore required the maintenance of many small posts, but now the policy of concentration is obviously the right one. The new posts should have the proper strategic relations to the only "frontiers" we now have, those of the seacoast and of our northern and part of our southern boundary. I do not think that any question of advantage to localities or to States should determine the location of the new posts. The reorganization and enlargement of the Bureau of Military Information which the Secretary has effected is a work the usefulness of which will become every year more apparent. The work of building heavy guns and the construction of coast defenses has been well begun, and should be carried on without check.

The report of the Attorney-General is by law submitted directly to Congress, but I can not refrain from saying that he has conducted the increasing work of the Department of Justice with great professional skill. He has in several directions secured from the courts decisions giving increased protection to the officers of the United States, and bringing some classes of crime that escaped local cognizance and

punishment into the tribunals of the United States, where they could be tried with impartiality.

The numerous applications for Executive clemency presented in behalf of persons convicted in United States courts and given penitentiary sentences have called my attention to a fact referred to by the Attorney-General in his report, namely, that a time allowance for good behavior for such prisoners is prescribed by the Federal statutes only where the State in which the penitentiary is located has made no such provision. Prisoners are given the benefit of the provisions of the State law regulating the penitentiary to which they may be sent. These are various, some perhaps too liberal and some perhaps too illiberal. The result is that a sentence for five years means one thing if the prisoner is sent to one State for confinement, and quite a different thing if he is sent to another. I recommend that a uniform credit for good behavior be prescribed by Congress.

I have before expressed my concurrence in the recommendation of the Attorney-General that degrees of murder should be recognized in the Federal statutes, as they are, I believe, in all the States. These grades are founded on correct distinctions in crime. The recognition of them would enable the courts to exercise some discretion in apportioning punishment, and would greatly relieve the Executive of what is coming to be a very heavy burden—the examination of these cases on application for commutation.

The aggregate of claims pending against the Government in the Court of Claims is enormous. Claims to the amount of nearly \$400,000,000 for the taking of or injury to the property of persons claiming to be loyal during the war are now before that court for examination. When to these are added the Indian depredation claims and the French spoliation claims, an aggregate is reached that is indeed startling. In the defense of all these cases the Government is at great disadvantage. The claimants have preserved their evidence, whereas the agents of the Government are sent into the field to rummage for what they can find. This difficulty is peculiarly great where the fact to be established is the disloyalty of the claimant during the war. If this great threat against our revenues is to have no other check, certainly Congress should supply the Department of Justice with appropriations sufficiently liberal to secure the best legal talent in the defense of these claims and to pursue its vague search for evidence effectively.

The report of the Postmaster-General shows a most gratifying increase and a most efficient and progressive management of the great business of that department. The remarkable increase in revenues, in the number of post-offices, and in the miles of mail carriage furnishes further evidence of the high state of prosperity which our people are enjoying. New offices mean new hamlets and towns; new routes mean the extension of our border settlements, and increased revenues mean an active commerce. The Postmaster-General reviews the whole period of his administration of the office and brings some of his statistics down to the month of November last. The postal revenues have increased during the last year nearly \$5,000,000. The deficit for the year ending June 30, 1892, is \$848,341 less than the deficiency of the preceding year. The deficiency of the present fiscal year, it is estimated, will be reduced to \$1,552,423, which will not only be extinguished during the next fiscal year, but a surplus of nearly \$1,000,000 should then be shown. In these calculations the payments to be made under the contracts for ocean mail service have not been included.

There have been added 1,590 new mail routes during the year, with a mileage of 8,563 miles; and the total number of new miles of mail trips added during the year is nearly 17,000,000. The number of miles of mail journeys added during the last four years is about 76,000,000, this addition being 21,000,000 miles more than were in operation in the whole country in 1861.

The number of post-offices has been increased by



2,790 during the year, and during the past four years and up to Oct. 29 last the total increase in the number of offices has been nearly 9,000. The number of free-delivery offices has been nearly doubled in the last four years, and the number of money-order offices more than doubled within that time.

For the three years ending June 30, 1892, the postal revenue amounted to \$197,744,359, which was an increase of \$52,263,150 over the revenue for the three years ending June 30, 1888, the increase during the last three years being more than three and a half times as great as the increase during the years ending June 30, 1888. No such increase as that shown for these three years has ever previously appeared in the revenues of the department. The Postmaster-General has extended to the post-offices in the larger cities the merit system of promotion, introduced by my direction into the departments here, and it has resulted there, as in the departments, in a larger volume of work, and that better done.

Ever since our merchant marine was driven from the sea by the rebel cruisers during the war of the rebellion, the United States has been paying an enormous annual tribute to foreign countries in the shape of freight and passage moneys. Our grain and meats have been taken at our docks and our large imports there laid down by foreign shipmasters. An increasing torrent of American travel to Europe has contributed a vast sum annually to the dividends of foreign shipowners. The balance of trade shown by the books of our customhouses has been very largely reduced and in many years altogether extinguished by this constant drain. In the year 1892 only 12.3 per cent. of our imports were brought in American vessels. These great foreign steamships maintained by our traffic are many of them under contracts with their respective governments, by which in time of war they will become a part of their armed naval establishments. Profiting by our commerce in peace, they will become the most formidable destroyers of our commerce in time of war. I have felt and have before expressed the feeling that this condition of things was both intolerable and disgraceful. A wholesome change of policy and one having in it much promise, as it seems to me, was begun by the law of March 3, 1891. Under this law contracts have been made by the Postmaster-General for 11 mail routes. The expenditure involved by these contracts for the next fiscal year approximates \$954,123.33. As one of the results already reached, 16 American steamships of an aggregate tonnage of 57,400 tons, costing \$7,400,000, have been built or contracted to be built in American shipyards.

The estimated tonnage of all steamships required under existing contracts is 165,802, and when the full service required by these contracts is established there will be 41 mail steamers under the American flag, with the probability of further necessary additions in the Brazilian and Argentine service. The contracts recently let for transatlantic service will result in the construction of 5 ships of 10,000 tons each, costing 9 or 10 million dollars, and will add, with the "City of New York" and "City of Paris," to which the Treasury Department was authorized by legislation at the last session to give American registry, 7 of the swiftest vessels upon the sea to our naval reserve. The contracts made with the lines sailing to Central and South American ports have increased the frequency and shortened the time of the trips, added new ports of call, and sustained some lines that otherwise would almost certainly have been withdrawn. The service to Buenos Ayres is the first to the Argentine Republic under the American flag. The service to Southampton, Boulogne, and Antwerp is also new, and is to be begun with the steamships "City of New York" and "City of Paris" in February next.

I earnestly urge a continuance of the policy inaugurated by this legislation, and that the appropriations required to meet the obligations of the Government under the contracts may be made promptly, so

that the lines that have entered into these engagements may not be embarrassed. We have had, by reason of connections with the transcontinental railway lines constructed through our own territory, some advantages in the ocean trade of the Pacific that we did not possess on the Atlantic. The construction of the Canadian Pacific Railway and the establishment under large subventions from Canada and England of fast steamship service from Vancouver with Japan and China seriously threaten our shipping interests in the Pacific. This line of English steamers receives, as is stated by the Commissioner of Navigation, a direct subsidy of \$400,000 annually, or \$30,767 per trip for 13 voyages, in addition to some further aid from the admiralty in connection with contracts under which the vessels may be used for naval purposes. The competing American Pacific mail line, under the act of March 3, 1891, receives only \$6,389 per round trip.

Efforts have been making within the last year, as I am informed, to establish under conditions a line between Vancouver and some Australian port, with a view of seizing there a trade in which we have had a large interest. The Commissioner of Navigation states that a very large per cent. of our imports from Asia are now brought to us by English steamships and their connecting railways in Canada. With a view of promoting this trade, especially in tea, Canada has imposed a discriminating duty of 10 per cent. upon tea and coffee brought into the Dominion from the United States. If this unequal contest between American lines without subsidy, or with diminished subsidies, and the English Canadian line to which I have referred is to continue, I think we should at least see that the facilities for customs entry and transportation across our territory are not such as to make the Canadian route a favored one, and that the discrimination as to duties, to which I have referred, is met by a like discrimination as to the importation of these articles from Canada.

No subject, I think, more nearly touches the pride, the power, and the prosperity of our country than this of the development of our merchant marine upon the sea. If we could enter into conference with other competitors and all would agree to withhold Government aid, we could perhaps take our chances with the rest, but our great competitors have established and maintained their lines by Government subsidies until they now have practically excluded us from participation. In my opinion no choice is left to us but to pursue, moderately at least, the same lines.

The report of the Secretary of the Navy exhibits great progress in the construction of our new navy. When the present Secretary entered upon his duties only 3 modern steel vessels were in commission. The vessels since put in commission and to be put in commission during the winter will make a total of 19 during his administration of the department. During the current year 10 war vessels and 3 navy tugs have been launched, and during the four years 25 vessels will have been launched. Two other large ships and a torpedo boat are under contract and work upon them well advanced, and the 4 monitors are awaiting only the arrival of their armor, which has been unexpectedly delayed, or they would have been before this in commission.

Contracts have been let during this administration, under the appropriations for the increase of the navy, including new vessels and their appurtenances, to the amount of \$35,000,000, and there has been expended during the same period for labor at navy yards upon similar work \$8,000,000, without the smallest scandal or charge of fraud or partiality. The enthusiasm and interest of our naval officers, both of the staff and line, have been greatly kindled. They have responded magnificently to the confidence of Congress, and have demonstrated to the world an unexcelled capacity in construction, in ordnance, and in everything involved in the building, equipping, and sailing of great war ships.

At the beginning of Secretary Tracy's administra-



tion several difficult problems remained to be grappled with and solved before the efficiency in action of our ships could be secured. It is believed that, as the result of new processes in the construction of armor plate, our later ships will be clothed with defensive plates of higher resisting power than are found on any war vessels afloat. We were without torpedoes. Tests have been made to ascertain the relative efficiency of different constructions, a torpedo has been adopted, and the work of construction is now being carried on successfully. We were without armor-piercing shells, and without a shop instructed and equipped for the construction of them. We are now making what is believed to be a projectile superior to any before in use. A smokeless powder has been developed, and a slow-burning powder for guns of large caliber. A high explosive, capable of use in shells fired from service guns, has been found, and the manufacture of gun cotton has been developed so that the question of supply is no longer in doubt.

The development of a naval militia, which has been organized in eight States and brought into cordial and co-operative relations with the navy, is another important achievement. There are now enlisted in these organizations 1,800 men, and they are likely to be greatly extended. I recommend such legislation and appropriations as will encourage and develop this movement. The recommendations of the Secretary will, I do not doubt, receive the friendly consideration of Congress, for he has enjoyed, as he has deserved, the confidence of all those interested in the development of our navy, without any division upon partisan lines. I earnestly express the hope that a work which has made such noble progress may not now be stayed. The wholesome influence for peace and the increased sense of security which our citizens domiciled in other lands feel when these magnificent ships under the American flag appear is already most gratefully apparent. The ships from our navy which will appear in the great naval parade next April in the harbor of New York will be a convincing demonstration to the world that the United States is again a naval power.

The work of the Interior Department, always very burdensome, has been larger than ever before during the administration of Secretary Noble. The disability pension law, the taking of the eleventh census, the opening of vast areas of Indian lands to settlement, the organization of Oklahoma, and the negotiations for the cession of Indian lands furnish some of the particulars of the increased work; and the results achieved testify to the ability, fidelity, and industry of the head of the department and his efficient assistants.

Several important agreements for the cession of Indian lands negotiated by the commission appointed under the act of March 2, 1889, are awaiting the action of Congress. Perhaps the most important of these is that for the cession of the Cherokee Strip. This region has been the source of great vexation to the Executive Department, and of great friction and unrest between the settlers who desire to occupy it and the Indians who assert title. The agreement which has been made by the commission is perhaps the most satisfactory that could have been reached. It will be noticed that it is conditioned upon its ratification by Congress before March 4, 1893. The Secretary of the Interior, who has given the subject very careful thought, recommends the ratification of the agreement, and I am inclined to follow his recommendation. Certain it is that some action by which this controversy shall be brought to an end and these lands opened to settlement is urgent.

The form of government provided by Congress on May 17, 1884, for Alaska was, in its frame and purpose, temporary. The increase of population and the development of some important mining and commercial interests make it imperative that the law should be revised and better provision made for the arrest and punishment of criminals.

The report of the Secretary shows a very gratifying state of facts as to the condition of the General Land Office. The work of issuing agricultural patents, which seemed to be hopelessly in arrear when the present Secretary undertook the duties of his office, has been so expedited that the bureau is now upon current business. The relief thus afforded to honest and worthy settlers upon the public lands, by giving to them an assured title to their entries, has been of incalculable benefit in developing the new States and the Territories.

The Court of Private Land Claims established by Congress for the promotion of this policy of speedily settling contested land titles is making satisfactory progress in its work, and when the work is completed a great impetus will be given to the development of those regions where unsettled claims under Mexican grants have so long exercised their repressive influence. When to these results are added the enormous cessions of Indian lands which have been opened to settlement, aggregating during this administration nearly 26,000,000 acres, and the agreements negotiated and now pending in Congress for ratification by which about 10,000,000 additional acres will be opened to settlement, it will be seen how much has been accomplished.

The work in the Indian Bureau, in the execution of the policy of recent legislation, has been largely directed to two chief purposes: First, the allotment of lands in severalty to the Indians and the cession to the United States of the surplus lands, and, secondly, to the work of educating the Indian for his own protection in his closer contact with the white man and for the intelligent exercise of his new citizenship. Allotments have been made and patents issued to 5,900 Indians under the present Secretary and commissioner, and 7,600 additional allotments have been made for which patents are now in process of preparation. The school attendance of Indian children has been increased during that time over 13 per cent., the enrollment for 1892 being nearly 20,000. A uniform system of school text-books and of study has been adopted, and the work in these national schools brought as near as may be to the basis of the free common schools of the States. These schools can be transferred and merged into the common-school systems of the States when the Indian has fully assumed his new relation to the organized civil community in which he resides, and the new States are able to assume the burden.

I have several times been called upon to remove Indian agents appointed by me, and have done so promptly upon every sustained complaint of unfitness or misconduct. I believe, however, that the Indian service at the agencies has been improved, and is now administered on the whole with a good degree of efficiency. If any legislation is possible by which the selection of Indian agents can be wholly removed from all partisan suggestions or considerations, I am sure it would be a great relief to the Executive and a great benefit to the service. The appropriation for the subsistence of the Cheyenne and Arapahoe Indians made at the last session of Congress was inadequate. This smaller appropriation was estimated for by the commissioner upon the theory that the large fund belonging to the tribe in the public Treasury could be and ought to be used for their support. In view, however, of the pending depredation claims against this fund and other considerations, the Secretary of the Interior on the 12th of April last submitted a supplemental estimate for \$50,000. This appropriation was not made, as it should have been, and the oversight ought to be remedied at the earliest possible date.

In a special message to this Congress at the last session I stated the reasons why I had not approved the deed for the release to the United States by the Choctaws and Chickasaws of the lands formerly embraced in the Cheyenne and Arapahoe Reservation and remaining after allotments to that tribe. A resolution of the Senate expressing the opinion of that body that,



notwithstanding the facts stated in my special message, the deed should be approved and the money, \$2,991,450, paid over, was presented to me May 10, 1892. My special message was intended to call the attention of Congress to the subject, and in view of the fact that it is conceded that the appropriation proceeded upon a false basis as to the amount of lands to be paid for, and is by \$50,000 in excess of the amount they are entitled to (even if their claim to the land is given full recognition at the rate agreed upon), I have not felt willing to approve the deed, and shall not do so, at least until both Houses of Congress have acted upon the subject. It has been informally proposed by the claimants to release this sum of \$50,000, but I have no power to demand or accept such a release, and such an agreement would be without consideration and void.

I desire further to call the attention of Congress to the fact that the recent agreement concluded with the Kiowas and Comanches relates to lands which were a part of the "leased district," and to which the claim of the Choctaws and Chickasaws is precisely that recognized by Congress in the legislation I have referred to. The surplus lands to which this claim would attach in the Kiowa and Comanche Reservation is 2,500,000 acres, and at the same rate the Government will be called upon to pay to the Choctaws and Chickasaws for these lands \$3,125,000. This sum will be further augmented, especially if the title of the Indians to the tract now Grier County, Texas, is established. The duty devolved upon me in this connection was simply to pass upon the form of the deed, but as in my opinion the facts mentioned in my special message were not adequately brought to the attention of Congress in connection with the legislation, I have felt that I would not be justified in acting without some new expression of the legislative will.

The report of the Commissioner of Pensions, to which extended notice is given by the Secretary of the Interior in his report, will attract great attention. Judged by the aggregate amount of work done, the last year has been the greatest in the history of the office. I believe that the organization of the office is efficient, and that the work has been done with fidelity. The passage of what is known as the disability bill has, as was foreseen, very largely increased the annual disbursements to the disabled veterans of the civil war. The estimate for this fiscal year was \$144,956,000, and that amount was appropriated. A deficiency amounting to \$10,508,621 must be provided for at this session. The estimate for pensions for the fiscal year ending June 30, 1894, is \$165,000,000. The Commissioner of Pensions believes that, if the present legislation and methods are maintained and further additions to the pension laws are not made, the maximum expenditure for pensions will be reached June 30, 1894, and will be at the highest point \$188,000,000 per annum.

I adhere to the views expressed in previous messages, that the care of the disabled soldiers of the war of the rebellion is a matter of national concern and duty. Perhaps no emotion cools sooner than that of gratitude, but I can not believe that this process has yet reached a point with our people that would sustain the policy of remitting the care of these disabled veterans to the inadequate agencies provided by local laws. The parade on the 20th of September last, upon the streets of this capital, of 60,000 of the surviving Union veterans of the war of the rebellion was a most touching and thrilling episode, and the rich and gracious welcome extended to them by the District of Columbia, and the applause that greeted their progress from tens of thousands of people from all the States, did much to revive the glorious recollections of the grand review, when these men and many thousand others now in their graves were welcomed with grateful joy as victors in a struggle in which the national unity, honor, and wealth were all at issue.

In my last annual message I called attention to the fact that some legislative action was necessary in order to protect the interests of the Government in its rela-

tions with the Union Pacific Railway. The Commissioner of Railroads has submitted a very full report, giving exact information as to the debt, the liens upon the company's property, and its resources. We must deal with the question as we find it, and take that course which will, under existing conditions, best secure the interests of the United States. I recommended in my last annual message that a commission be appointed to deal with this question, and I renew that recommendation, and suggest that the commission be given full power.

The report of the Secretary of Agriculture contains not only a most interesting statement of the progressive and valuable work done under the administration of Secretary Rusk, but many suggestions for the enlarged usefulness of this important department. In the successful effort to break down the restrictions to the free introduction of our meat products in the countries of Europe, the Secretary has been untiring from the first, stimulating and aiding all other Government officers, at home and abroad, whose official duties enabled them to participate in the work. The total trade in hog products with Europe in May, 1892, amounted to 82,000,000 pounds, against 46,900,000 in the same month of 1891; in June, 1892, the exports aggregated 85,700,000 pounds, against 46,500,000 pounds in the same month of the previous year; in July there was an increase of 41 per cent., and in August of 55 per cent., over the corresponding months of 1891.

Over 40,000,000 pounds of inspected pork have been exported since the law was put into operation, and a comparison of the four months of May, June, July, and August, 1892, with the same months of 1891 shows an increase in the number of pounds of our export of pork products of 62 per cent., and an increase in value of 66½ per cent. The exports of dressed beef increased from 137,900,000 pounds in 1889 to 220,500,000 pounds in 1892, or about 60 per cent. During the past year there have been exported 394,607 head of live cattle, as against 205,786 exported in 1889. This increased exportation has been largely promoted by the inspection authorized by law and the faithful efforts of the Secretary and his efficient subordinates to make that inspection thorough and to carefully exclude from all cargoes diseased or suspected cattle. The requirement of the English regulations that live cattle arriving from the United States must be slaughtered at the docks had its origin in the claim that pleuropneumonia existed among American cattle, and that the existence of the disease could only certainly be determined by a post-mortem inspection.

The Department of Agriculture has labored with great energy and faithfulness to extirpate this disease, and on the 26th day of September last a public announcement was made by the Secretary that the disease no longer existed anywhere within the United States. He is entirely satisfied, after the most searching inquiry, that this statement was justified, and that by a continuance of the inspection and quarantine now required of cattle brought into this country the disease can be prevented from again getting any foothold. The value to the cattle industry of the United States of this achievement can hardly be estimated. We can not, perhaps, at once insist that this evidence shall be accepted as satisfactory by other countries; but if the present exemption from the disease is maintained, and the inspection of our cattle arriving at foreign ports, in which our own veterinarians participate, confirms it, we may justly expect that the requirement that our cattle shall be slaughtered at the docks will be revoked, as the sanitary restrictions upon our pork products have been. If our cattle can be taken alive to the interior the trade will be enormously increased.

Agricultural products constituted 78.1 per cent of our unprecedented exports for the fiscal year which closed June 30, 1892, the total exports being \$1,030,278,030, and the value of the agricultural products \$793,717,676, which exceeds by more than \$150,000,000 the shipment of agricultural products in any previous year.



An interesting and a promising work for the benefit of the American farmer has been begun through agents of the Agricultural Department in Europe, and consists in efforts to introduce the various products of Indian corn as articles of human food. The high price of rye offered a favorable opportunity for the experiment in Germany of combining corn meal with rye to produce a cheaper bread. A fair degree of success has been attained, and some mills for grinding corn for food have been introduced. The Secretary is of the opinion that this new use of the products of corn has already stimulated exportations, and that, if diligently prosecuted, large and important markets can presently be opened for this great American product.

The suggestions of the Secretary for an enlargement of the work of the Department are commended to your favorable consideration. It may, I think, be said without challenge that in no corresponding period has so much been done as during the last four years for the benefit of American agriculture.

The subject of quarantine regulations, inspection, and control was brought suddenly to my attention by the arrival at our ports in August last of vessels infected with cholera. Quarantine regulations should be uniform at all our ports. Under the Constitution they are plainly within the exclusive Federal jurisdiction when and so far as Congress shall legislate. In my opinion the whole subject should be taken into national control, and adequate power given to the Executive to protect our people against plague invasions. On the 1st of September last I approved regulations establishing a twenty-day quarantine for all vessels bringing immigrants from foreign ports. This order will be continued in force. Some loss and suffering have resulted to passengers, but a due care for the homes of our people justifies in such cases the utmost precaution. There is danger that with the coming of spring cholera will again appear, and a liberal appropriation should be made at this session to enable our quarantine and port officers to exclude the deadly plague.

But the most careful and stringent quarantine regulations may not be sufficient absolutely to exclude the disease. The progress of medical and sanitary science has been such, however, that if approved precautions are taken at once to put all of our cities and towns in the best sanitary condition, and provision is made for isolating any sporadic cases, and for a thorough disinfection, an epidemic can, I am sure, be avoided. This work appertains to the local authorities, and the responsibility and the penalty will be appalling if it is neglected or unduly delayed.

We are peculiarly subject in our great ports to the spread of infectious diseases by reason of the fact that unrestricted immigration brings to us out of European cities, in the overcrowded steerages of great steamships, a large number of persons whose surroundings make them the easy victims of the plague. This consideration, as well as those affecting the political, moral, and industrial interests of our country, lead me to renew the suggestion that admission to our country and to the high privileges of its citizenship should be more restricted and more careful. We have, I think, a right, and owe a duty to our own people, and especially to our working people, not only to keep out the vicious, the ignorant, the civil disturber, the pauper, and the contract laborer, but to check the too great flow of immigration now coming by further limitations.

The report of the World's Columbian Exposition has not yet been submitted. That of the Board of Management of the Government exhibit has been received, and is herewith transmitted. The work of construction and of preparation for the opening of the Exposition in May next has progressed most satisfactorily, and upon a scale of liberality and magnificence that will worthily sustain the honor of the United States.

The District of Columbia is left, by a decision of the Supreme Court of the District, without any law

regulating the liquor traffic. An old statute of the Legislature of the District, relating to the licensing of various vocations, has hitherto been treated by the commissioners as giving them power to grant or refuse licenses to sell intoxicating liquors, and as subjecting those who sold without license to penalties; but in May last the Supreme Court of the District held against this view of the powers of the commissioners. It is of urgent importance, therefore, that Congress should supply, either by direct enactment or by conferring discretionary powers upon the commissioners, proper limitations and restraints upon the liquor traffic in the District. The District has suffered in its reputation by many crimes of violence, a large per cent. of them resulting from drunkenness and the liquor traffic. The capital of the nation should be freed from this reproach by the enactment of stringent restrictions and limitations upon the traffic.

In renewing the recommendation which I have made in three preceding annual messages, that Congress should legislate for the protection of railroad employees against the dangers incident to the old and inadequate methods of braking and coupling which are still in use upon freight trains, I do so with the hope that this Congress may take action upon the subject. Statistics furnished by the Interstate Commerce Commission show that during the year ending June 30, 1891, there were 47 different styles of car couplers reported to be in use, and that during the same period there were 2,660 employees killed and 26,140 injured. Nearly 16 per cent. of the deaths occurred in the coupling and uncoupling of cars, and over 36 per cent. of the injuries had the same origin.

The Civil Service Commission ask for an increased appropriation for needed clerical assistance, which I think should be given. I extended the classified service, March 1, 1892, to include physicians, superintendents, assistant superintendents, school teachers, and matrons in the Indian service, and have had under consideration the subject of some further extensions, but have not as yet fully determined the lines upon which extensions can most properly and usefully be made.

I have, in each of the three annual messages which it has been my duty to submit to Congress, called attention to the evils and dangers connected with our election methods and practices as they are related to the choice of officers of the National Government. In my last annual message I endeavored to invoke serious attention to the evils of unfair apportionments for Congress. I can not close this message without again calling attention to these grave and threatening evils. I had hoped that it was possible to secure a nonpartisan inquiry, by means of a commission, into evils the existence of which is known to all, and that out of this might grow legislation from which all thought of partisan advantage should be eliminated and only the higher thought appear of maintaining the freedom and purity of the ballot and the equality of the elector, without the guarantee of which the Government could never have been formed, and without the continuance of which it can not continue to exist in peace and prosperity.

It is time that mutual charges of unfairness and fraud between the great parties should cease, and that the sincerity of those who profess a desire for pure and honest elections should be brought to the test of their willingness to free our legislation and our election methods from everything that tends to impair the public confidence in the announced result. The necessity for an inquiry, and for legislation by Congress, upon this subject is emphasized by the fact that the tendency of the legislation in some States in recent years has in some important particulars been away from and not toward free and fair elections and equal apportionments. Is it not time that we should come together upon the high plane of patriotism while we devise methods that shall secure the right of every man qualified by law to cast a free ballot, and give to every such ballot an equal value in



choosing our public officers, and in directing the policy of the Government?

Lawlessness is not less such, but more, where it usurps the functions of the peace officer and of the courts. The frequent lynching of colored people accused of crime is without the excuse which has sometimes been urged by mobs for a failure to pursue the appointed methods for the punishment of crime, that the accused have an undue influence over courts and juries. Such acts are a reproach to the community where they occur, and so far as they can be made the subject of Federal jurisdiction the strongest repressive legislation is demanded. A public sentiment that will sustain the officers of the law in resisting mobs and in protecting accused persons in their custody should be promoted by every possible means. The officer who gives his life in the brave discharge of this duty is worthy of special honor. No lesson needs to be so urgently impressed upon our people as this, that no worthy end or cause can be promoted by lawlessness.

This exhibit of the work of the Executive Departments is submitted to Congress and to the public in the hope that there will be found in it a due sense of responsibility and an earnest purpose to maintain the national honor and to promote the happiness and prosperity of all our people. And this brief exhibit of the growth and prosperity of the country will give us a level from which to note the increase or decadence that new legislative policies may bring to us. There is no reason why the national influence, power, and prosperity should not observe the same rates of increase that have characterized the past thirty years. We carry the great impulse and increase of these years into the future. There is no reason why in many lines of production we should not surpass all other nations as we have already done in some. There are no near frontiers to our possible development. Retrogression would be a crime. BENJ. HARRISON.

EXECUTIVE MANSION, Dec. 6, 1892.

**Counting the Electoral Vote.**—The Senate and the House of Representatives adopted the following concurrent resolution in regard to the counting of the electoral votes for President and Vice-President:

*Resolved by the House of Representatives (the Senate concurring),* That the two Houses of Congress shall assemble in the hall of the House of Representatives on Wednesday, the 8th day of February, 1893, at 1 o'clock in the afternoon, pursuant to the requirement of the Constitution and laws relating to the election of President and Vice-President of the United States, and the President of the Senate shall be the presiding officer; that two persons be appointed tellers on the part of the Senate and two on the part of the House of Representatives, to make a list of the votes as they shall be declared; that the result shall be delivered to the President of the Senate, who shall announce the state of the vote and the persons elected to the two Houses assembled as aforesaid, which shall be deemed a declaration of the persons elected President and Vice-President of the United States, and, together with a list of the votes, be entered on the journals of the two Houses.

On the appointed day (Feb. 8, 1893) both Houses of Congress met in joint session, Vice-President Morton in the chair; tellers were appointed, and the electoral certificates from the several States were read without objection. The following report of the result was made:

The undersigned, Eugene Hale and Joseph C. S. Blackburn, tellers on the part of the Senate, and J. Logan Chipman and Henry Cabot Lodge, tellers on the part of the House of Representatives, report the following as the result of the ascertainment and counting of the electoral vote for President and Vice-President of the United States for the term beginning March 4, 1893:

Number of electoral votes to which each State is entitled.	STATES.	FOR PRESIDENT.			FOR VICE-PRESIDENT.		
		Grover Cleveland, of New York.	Benjamin Harrison, of Indiana.	James B. Weaver, of Iowa.	Adlai E. Stevenson, of Illinois.	Whitelaw Reid, of New York.	James G. Field, of Virginia.
11	Alabama.....	11	.....	.....	11	.....	.....
8	Arkansas.....	8	.....	.....	8	.....	.....
9	California.....	8	1	.....	8	1	.....
4	Colorado.....	.....	.....	4	.....	.....	4
6	Connecticut.....	6	.....	.....	6	.....	.....
3	Delaware.....	3	.....	.....	3	.....	.....
4	Florida.....	4	.....	.....	4	.....	.....
13	Georgia.....	13	.....	.....	13	.....	.....
3	Idaho.....	.....	.....	3	.....	.....	3
24	Illinois.....	24	.....	.....	24	.....	.....
15	Indiana.....	15	.....	.....	15	.....	.....
13	Iowa.....	.....	13	.....	.....	13	.....
10	Kansas.....	.....	.....	10	.....	.....	10
13	Kentucky.....	13	.....	.....	13	.....	.....
8	Louisiana.....	8	.....	.....	8	.....	.....
6	Maine.....	.....	6	.....	.....	6	.....
8	Maryland.....	8	.....	.....	8	.....	.....
15	Massachusetts.....	.....	15	.....	.....	15	.....
14	Michigan.....	5	9	.....	5	9	.....
9	Minnesota.....	.....	9	.....	.....	9	.....
9	Mississippi.....	9	.....	.....	9	.....	.....
17	Missouri.....	17	.....	.....	17	.....	.....
3	Montana.....	.....	3	.....	.....	3	.....
8	Nebraska.....	.....	8	.....	.....	8	.....
3	Nevada.....	.....	.....	3	.....	.....	3
4	New Hampshire.....	.....	4	.....	.....	4	.....
10	New Jersey.....	10	.....	.....	10	.....	.....
36	New York.....	36	.....	.....	36	.....	.....
11	North Carolina.....	11	.....	.....	11	.....	.....
3	North Dakota.....	1	1	1	1	1	1
23	Ohio.....	1	22	.....	1	22	.....
4	Oregon.....	.....	3	1	.....	3	1
32	Pennsylvania.....	.....	32	.....	.....	32	.....
4	Rhode Island.....	.....	4	.....	.....	4	.....
9	South Carolina.....	9	.....	.....	9	.....	.....
4	South Dakota.....	.....	4	.....	.....	4	.....
12	Tennessee.....	12	.....	.....	12	.....	.....
15	Texas.....	15	.....	.....	15	.....	.....
4	Vermont.....	.....	4	.....	.....	4	.....
12	Virginia.....	12	.....	.....	12	.....	.....
4	Washington.....	.....	4	.....	.....	4	.....
6	West Virginia.....	6	.....	.....	6	.....	.....
12	Wisconsin.....	12	.....	.....	12	.....	.....
3	Wyoming.....	.....	3	.....	.....	3	.....
444	.....	277	145	22	277	145	22

Vice-President Morton said: "The state of the vote for President of the United States, as delivered to the President of the Senate, is as follows:

"The whole number of the electors appointed to vote for President of the United States is 444, of which a majority is 223.

"Grover Cleveland, of the State of New York, has received for President of the United States 277 votes.

"Benjamin Harrison, of the State of Indiana, has received 145 votes; and

"James B. Weaver, of the State of Iowa, has received 22 votes.

"The state of the vote for Vice-President of the United States, as delivered to the President of the Senate, is as follows:

"The whole number of the electors appointed to vote for Vice-President of the United States is 444, of which a majority is 223.

"Adlai E. Stevenson, of the State of Illinois, has received 277 votes.

"Whitelaw Reid, of the State of New York, has received 145 votes; and

"James G. Field, of the State of Virginia, has received 22 votes.

"This announcement of the state of the vote by the President of the Senate is, by law, a sufficient declaration that Grover Cleveland, of the State of New York, is elected President of the United States, and that Adlai E. Stevenson, of the State of Illinois, is elected Vice-President of the United States, each for the term beginning March 4, 1893, and will be entered, together with a list of the votes, on the Journals of the Senate and House of Representatives."

**Silver Purchase.**—Pursuant to notice, Mr. Catchings, of Mississippi, called up, Feb. 9, 1893, in the House of Representatives, the following resolution from the Committee on Rules:

*Resolved*, That immediately upon the adoption of this resolution the House proceed to consider H. R. 10143, "A bill to increase the circulation of national banks, and for other purposes," and if such bill shall not be disposed of on said day then the consideration thereof shall be continued during the next legislative day.

The purpose of this resolution was to bring to an immediate decision the fate of this measure, which involved a change of policy in regard to silver.

Mr. Bacon, of New York, said in support of the resolution:

"The House is well informed of the nature of this bill as it has come from the Committee on Banking and Currency. The importance of the questions which it involves and the serious situation of the country it is intended to relieve are also well known to the members of the House, and will not be a subject by me of extended remarks at this time. Suffice it to say that the intent of this bill, the purpose for which it has been brought into this House by the committee, is that, either by its provisions as they came from the committee or by such amendment of them as the House may make, a condition of things which all people agree in deploring may be ended.

"The main purpose of the bill; the main purpose for pressing its consideration; the main purpose for demanding a vote upon it, is that the purchase of silver bullion and the storing of it in the vaults of the Treasury as a commodity and in metallic form and without coinage shall stop.

"Now, Mr. Speaker, the rule as it has been reported by the committee is in the form which the Committee on Rules has invariably used in this Congress for the purpose of bringing before the House important questions; and that form of rule has invariably been found ineffectual to enable this House to vote upon such measures and to determine such questions in the face of a decided and determined opposition, even from a small minority.

"The lessons which we ought to learn from what has occurred during this session of the House upon the bankruptcy bill and upon other measures which have received from the Committee on Rules the right of way for consideration here, are not to be overlooked. There remains no phase of this silver question which needs discussion in this House. There is no view of the subject which has not been exploited. There is no addition which needs to be made to the arguments on either side of the questions involved at this time, save only a fair and candid state-

ment of the condition of the Treasury as the result of the policy which we have been pursuing. Consideration and argument, therefore, upon this bill at this time will serve no useful purpose unless this House shall come to a vote.

"If gentlemen in this House, the majority of them, are fixed and settled in their opinions that some other measure than the bill reported by the Committee on Banking and Currency ought to take the place of the existing law on the statute book and this vexed question be settled so far as this House is concerned, the opportunity is given to them by amendment to this bill. But when that right is exhausted, when this bill and its amendments are ready to be voted upon, this House ought to vote upon them; members ought to discharge their responsibility to this House and to their country by standing in their places here and recording their votes upon this proposition. And no matter what may be done elsewhere, no matter what duty others may shirk, let us perform our duty, and it will put the responsibility then upon others who shirk it. We shall not have failed in the performance of our duties."

Mr. Bland, of Missouri, said in opposition to the resolution:

"Mr. Speaker, it will be a curious thing for the country and the members of this House to observe the vote upon this *clôture* resolution, to ascertain how many men upon this side of the House who last summer, when the free-coinage bill was up for consideration in the interest of the people, planted themselves upon the high horse of Democratic principle, declaring they would not vote for *clôture*. It will be interesting, I say, to ascertain how many of those gentlemen are going to come down from their high horse to-day and vote *clôture*, in the interest of Wall Street, to demonetize silver.

"We will watch the roll to see how a gentleman can in one instance raise himself above the people in professed democracy and vote in favor of Wall Street, and yet forsake his avowed principles when it comes to a bill of this character. What is this bill, Mr. Speaker? The gentleman talks about coining silver. Why does he not report a bill to coin all the silver purchased, instead of a bill to stop the purchases and the coinage both?

"A bill, sir, professing to carry out the Democratic platform—a platform which demanded the repeal of the 'Sherman law,' a misnomer, for Sherman never liked the bill himself, and is now trying to have it repealed, which is one good reason why this side of the House especially ought to stand by it and sustain it. That part of it which may be in the interest of stock-gambling and bond-bulling in Wall Street must come here with a *clôture* rule.

"But what becomes of the rest of it? The free-coinage proposition in that platform is utterly ignored: the people's voice is not heard in the introduction of that bill. The measure is a monstrosity, yielding to the national banks further privileges, increasing their circulation in the interest of the bondholders, to defeat the monetization of silver in behalf of the gold gamblers and speculators.

"It is hardly susceptible of amendment, Mr. Speaker. We will meet them on that proposi-



tion. When we want silver legislation in the interest of the people we will take action upon it here, and not at the dictation of the gold speculators. When the Democratic party in the last campaign, and especially gentlemen on this side presenting this bill now, went before the people, they said that the free coinage of silver and the silver question was nothing in comparison to the tariff question. That was the overshadowing, paramount issue which the people had to face.

"But as soon as the election is over we hear nothing of the Committee on Ways and Means. They have absolutely subsided. The tariff question is relegated to the rear in this body. If we do that, we will have betrayed every promise made to the American people in that campaign on the tariff and silver question, and up to this moment, sir, in this House, the people of this country will have been deceived in the last election.

"I defy you to undertake to demonetize silver again in this country and go back to the infamous legislation of 1873. The Democratic party for the last twenty years has denounced that as the most infamous piece of legislation that was ever accomplished in American history, and here it is calmly and coolly proposed in a Democratic House that we shall demonetize, go back to that act of 1873, wipe out the silver legislation—all laws which recognize that metal as money in this country—and ratify and confirm the most villainous and tyrannical piece of legislation that was ever enacted in the history of the American Government.

"Mr. Speaker, I wish to say that the so-called Sherman law puts in circulation about \$50,000,000 annually, or over \$4,000,000 every month, in the way of legal-tender Treasury notes issued in the purchase monthly of 4,500,000 ounces of silver bullion. This to some extent meets the wants of increased population and needs of business. To repeal the law and stop there would mean a practical contraction of the currency to the amount of \$50,000,000 annually.

"This would cause prices to fall and make times still harder, especially in all our agricultural districts. This will not do as the first step in Democratic reform, for this would be to reform backward. It is no answer to say that gold would come here to supply currency demands, for we all know there is no gold to bring here without bringing on a panic in the gold-using countries.

"Besides, the countries now using gold are those where all or nearly all our exports go. The more we drain those people of their gold the lower of necessity will prices go in those countries; so that when we sell them our wheat, corn, pork, beef, and cotton we must expect them to pay us less than they give us now. Certainly those things are at this time much lower than they should be, and so low that the producing of them yields but little profit. The Democratic party can not afford to so legislate as to cause prices here and abroad to fall.

"The people who sent us here did not think they were voting for such a thing as that, but, on the contrary, they were aiming to improve matters in this direction and not to make them worse."

Mr. Reed, of Maine, advocated taking up the

subject in the House and passing a measure repealing the Sherman act. He said:

"Mr. Speaker, I was not aware until the session opened this morning that there was to be any preliminary debate on this question, and therefore I shall not be able to express myself with that accuracy which ought to be used upon an occasion so important as this. However, I have no doubt that what I say will be received with indulgence by the House under these circumstances. Questions of finance are always exceedingly difficult, and on such topics no wise man indulges himself much in prophetic utterances. We may, however, safely deal with some portions of the past.

"The so-called Sherman act was a compromise measure, intended to stay for the time being a strong feeling which existed on the part of a good many citizens of this country in favor of the free coinage of silver. The friends of the free coinage of silver thought that the result of the Sherman act would be to bring silver to par. If it could have done that, the problem which had convulsed this country for a long time would have been solved and finished and relegated to the past. Other people supported the Sherman act because they were afraid that the public mind was in such condition, owing to various circumstances too numerous to describe now, that there was danger of our going even to the extent of free coinage. Nobody ever regarded that act as anything but a measure passed for the time being, as, indeed, all legislation upon complex human affairs must be.

"We have now come to a change of conditions, or perhaps, to speak more accurately, of apparent conditions; and to my mind the Sherman act stands in unfortunate case for two different reasons. It seems to be to-day one of the obstacles which prevent bimetallicism all over the world. I think almost every reasonable man, who has not talked so much about this question that he has ceased to think, believes that whenever bimetallicism is sustained it must be upon the shoulders of the whole world. Nations which are monometallic are naturally now desirous of not changing their condition. They feel that perhaps the United States will undertake to shoulder the whole load. Therefore, it seems to me that the present condition of things is in our way in the negotiations we are making for the purpose of reaching a bimetallic standard all over the world, which we desire, both silver men and those who are denounced as 'gold bugs.'

"On the other hand, the constant increase of our currency, more than was contemplated at the time of the passage of the Sherman act, so called, together with the efflux of gold from this country, is producing another kind of fear—a fear in regard to the basis upon which our financial affairs are to be conducted. I do not fully share that fear myself. I think that the efflux of gold is in all probability the result of causes other than the Sherman act, although the possibility of the indefinite continuance of the Sherman act may have some influence upon the subject.

"We are now to perform an act which is to have in all human probability (for we might as well talk plainly and openly about this business as about all other matters of legislation)—we

are now about to perform an act which will have a certain moral influence, though probably not a legislative influence; because there is another body whose rules are such that deliberation goes on until deliberation ceases to be an absolute and unqualified advantage to the community. Hence, what we do to-day may not have a final legislative result; yet it may have a moral result; and I think it will, whatever may be the outcome. If the motion for the previous question is voted down, it will show to the community that we are ready—that people of both parties are ready—to take this question into careful consideration, and to do any acts in the future which may be necessary to preserve this country upon a sound currency basis.

"For my part, as an individual, I do not need such an assurance. I have no doubt now, and I never had any doubt, that this country will remain upon a sound currency basis, and that whenever any danger actually arises and is imminent the wisdom and good sense of the people will be equal to it. If the motion for the previous question shall be sustained, I think nevertheless the vote of this House will show, when analyzed, that there is really a feeling of willingness to meet the crisis whenever it shall come. And whenever we do get fairly at it, I hope for my part (and I am speaking only as an individual) that it will result finally in the establishment of such a banking system as will remove our currency question from the domain of active politics, and that we shall have a sound business system, carried out on sound business principles and automatic in its character. That I believe the wisdom of Congress will be equal to whenever the proper time shall arrive."

Mr. Catchings, at the close of the debate of an hour allowed on resolutions, reported from the Committee on Rules, called for the previous question; and it was ordered by a vote of 152 yeas to 143 nays, not voting 34. Those who voted in the affirmative were the opponents of the repeal of the purchase clause of the Sherman act and the advocates of silver coinage. Following is the vote:

YEAS—Abbott, Alderson, Allen, Antony, Arnold, Babbitt, Bailey, Baker, Bankhead, Bartine, Beeman, Belknap, Beltzhoover, Blanchard, Bland, Blount, Boatner, Bowers, Breckinridge of Arkansas, Bretz, Broderick, Brookshire, Brown of Indiana, Bryan, Buchanan of Virginia, Bullock, Bunn, Burrows, Butler, Bynum, Caminetti, Capehart, Clark of Wyoming, Clarke of Alabama, Clover, Cobb of Alabama, Compton, Cooper, Cowles, Cox of Tennessee, Crain, Crawford, Culbertson, Davis, DeArmond, Dockery, Dolliver, Dungan, Edmunds, Ellis, Enloe, Epes, Everett, Flick, Funston, Fyan, Gantz, Grady, Halvorson, Hatch, Haugen, Heard, Henderson of North Carolina, Hermann, Hilborn, Holman, Hooker of Mississippi, Hooker of New York, Hopkins of Pennsylvania, Hopkins of Illinois, Houk of Tennessee, Hull, Johnston of North Dakota, Johnstone of South Carolina, Jolley, Jones, Kem, Kendall, Kribbs, Kyle, Lane, Lanham, Lawson of Virginia, Lawson of Georgia, Lester of Virginia, Lester of Georgia, Lewis, Lind, Livingston, Long, Loud, Mallory, Mansur, Martin, McCreary, McKeighan, McMillin, McRae, Montgomery, Moore, Moses, Norton, Oates, O'Donnell, O'Ferrall, Otis, Owens, Parrett, Patterson of Tennessee, Patton, Paynter, Pearson, Peel, Perkins, Pickler, Pierce, Post, Price, Quackenbush, Richardson, Robertson of Louisiana, Sayers, Shell, Shively, Simpson, Smith, Snodgrass, Stephenson, Stewart of Texas, Stockdale, Stone

of Kentucky, Sweet, Tarsney, Taylor of Illinois, Taylor of Tennessee, V. A. Taylor, Terry, Tillman, Townsend, Tucker, Turner, Turpin, Watson, Wever, Wheeler of Alabama, White, Williams of North Carolina, Williams of Illinois, Wilson of Kentucky, Wilson of Missouri, Winn, Wise—152.

NAYS—Amerman, Andrew, Bacon, Barwig, Bentley, Bergen, Bingham, Boutelle, Bowman, Brawley, Breckinridge of Kentucky, Brickner, Brosius, Brown of Maryland, Brunner, Buchanan of New Jersey, Bunting, Busey, Bushnell, Cadmus, Caldwell, Campbell, Caruth, Castle, Catchings, Cate, Chipman, Clancy, Cobb of Missouri, Coburn, Cockran, Cogswell, Coolidge, Coombs, Covert, Cox of New York, Crosby, Cummings, Curtis, Cutting, Dazell, Daniell, De Forest, Dickerson, Dingley, Doan, Dunphy, Durborow, Elliott, English, Enochs, Fellows, Fitch, Fowler, Geary, Geissenhainer, Gorman, Greenleaf, Grout, Hall, Hollowell, Hamilton, Hare, Harmer, Harries, Harter, Hayes of Iowa, Haynes of Ohio, Hemphill, Herbert, Hitt, Hoar, Houk of Ohio, Johnson of Indiana, Johnson of Ohio, Ketcham, Kilgore, Lagan, Lapham, Layton, Little, Lodge, Lynch, Magner, McAleer, McClellan, McGann, McKaig, McKinney, Meyer, Miller, Milliken, Mitchell, Morse, Mutchler, Newberry, Ohliger, O'Neil of Massachusetts, O'Neill of Pennsylvania, Outhwaite, Payne, Pendleton, Powers, Raines, Randall, Rayner, Reed, Reyburn, Robinson of Pennsylvania, Rockwell, Rusk, Russell, Scott, Scull, Seerley, Shonk, Snow, Sperry, Springer, Stahlnecker, Stevens, Steward of Illinois, C. W. Stone, W. A. Stone, Storer, Stout, Stump, J. D. Taylor, Tracey, Van Horn, Walker, Warner, Washington, Waugh, Weadock, Wheeler of Michigan, Wike, Wilcox, Williams of Massachusetts, Wilson of Washington, Wilson of West Virginia, Wolverton, Youmans—143.

NOT VOTING—Alexander, Atkinson, Belden, Branch, Byrns, Cable, Causey, Cheatham, Dixon, Donovan, Fithian, Forman, Forney, Gillespie, Goodnight, Griswold, Henderson of Iowa, Henderson of Illinois, Huff, Lockwood, McLaurin, Meredith, O'Neill of Missouri, Page, Pattison of Ohio, Ray, Reilly, Rife, Sanford, Sipe, E. B. Taylor, Wadsworth, Whiting, Wright—34.

So the previous question was ordered—the question of agreeing to the resolution submitted by the Committee on Rules; and Mr. Cox, of Tennessee, moved to recommit to the committee without instructions. The motion was carried by a vote of 153 to 83.

On Jan. 17, 1893, a bill for the repeal of the purchase clause of the Sherman act was reported from the Finance Committee of the Senate with an amendment. The bill was as follows:

*Be it enacted, etc.,* That so much of the act entitled "An act directing the purchase of silver bullion and the issue of Treasury notes thereon, and for other purposes," approved July 14, 1890, as directs the Secretary of the Treasury to purchase, from time to time, silver bullion to the aggregate amount of 4,500,000 ounces, or so much thereof as may be offered in each month, at the market price thereof, and to issue in payment for such purchases of silver bullion Treasury notes of the United States, is hereby repealed, to take effect on the 1st day of January, 1894: *Provided*, That this act shall not in any way affect or impair or change the legal qualities, redemption, or use of the Treasury notes issued under said act.

The proposed amendment was as follows:

SEC. 2.—That upon any deposit already or hereafter made of any United States bonds bearing interest in the manner required by law, any national banking association having made or making the same shall be entitled to receive from the Comptroller of the Currency circulating notes of different denominations, in blank, registered, and countersigned as provided by law, not exceeding in the whole amount the par value of the bonds deposited: *Provided*, That at no time



shall the total amount of such notes issued to any such association exceed the amount at such time actually paid in of its capital stock.

On Feb. 6, Senator Hill, of New York, called up this measure for action, and in support of it he delivered a carefully prepared argument. Among other things he said:

"Gold is not purchased by the Government. It has free coinage into full legal-tender money for the people who bring it, and no matter how much. If melted, it has free recoinage into the same amount of full legal-tender money again, without loss.

"Those great populations which now as ever maintain the free coinage of silver, do not purchase silver in our fashion, by government. It is coined for the people, whoever brings it and no matter how much, just as gold-coining nations deal with gold. If the silver is melted for other uses, it loses nothing of its value, for it is assured of recoinage into the same amount of full legal tender money again without loss.

"Is it not clear, then, that our silver purchases are the polar opposite of free silver coinage? But they are worse than opposite; they are effective contraries to free bimetallic coinage whatever their amount and whether minted or not.

"If minted, as by the Bland-Allison law, they make a local accumulation of nonexportable money.

"If they are not minted, but measure Treasury note issues, as by the Sherman law, they likewise make an accumulation of nonexportable money. Too great accumulation of such money must surely extrude gold, which is now our only exportable money.

"Silver purchased, even if coined, monetizes no unpurchased silver, and if not coined monetizes none at all.

"Free coinage of silver is not the purchase of an ounce of silver. Nor is free coinage of gold the purchase of any gold. The function of free coinage is to effect the monetization of all, but not by the purchase of any.

"Now, there is about the same aggregate of gold money as of silver money in existence. The free coinage of silver has never ceased, and will not cease, so far as human beings can now foresee. The free coinage of gold has never ceased, and will not cease.

"Nations may shift and change. This mint may be closed to gold, as the mints of India once, or that mint may be closed to silver, as the mint of Germany was.

"But what ceased on the earth in 1873 was not free gold coinage, was not free silver coinage.

"What ceased in 1873 was free bimetallic coinage, to wit, the free coinage of silver and the free coinage of gold at the same mint in a rated parity.

"The two free coinages, elsewhere going on separately, lost their virtual conjunction due to the two free coinages which till then had gone on actually conjoined in one mint and one law.

"Lost thereby was the parity of gold and silver.

"A specified weight of gold, having free coinage into one monetary unit, no longer retained its former stable equivalence with  $15\frac{1}{2}$  times its

weight of silver having free coinage elsewhere into another national monetary unit.

"If the monetary unit had been bimetallic, thereafter the parity of the franc in silver and the franc in gold, the parity of the silver dollar and the gold dollar was but a local parity, lost in the crucible.

"Silver purchases have not so much as even a tendency to lay the foundations of universal parity between the silver dollar and the gold dollar; for their renewed parity is impossible except, as before, concurrently with the parity of all gold and all silver, which parity not only depends upon the monetization of each by the offer of free coinage to each, which has always gone on somewhere, but also upon the rated parity of both by the free coinage of both at a fixed weight ratio, to wit, upon free bimetallic coinage which ceased in 1873.

"What earthly relation has the purchase of silver to its parity with gold?

"What earthly relation has the purchase of gold to its parity with silver?

"The two halves of the money of the world, the gold half and the silver half, together constitute the great money measure of mankind (though now for nineteen years dislocated by the novel absence of free bimetallic coinage)—the one great bimetallic money measure standing over against the total inventory of their wealth.

"So that if all silver were put out of existence and the gold doubled, the money measure would be the same, the convenience of it vastly less. Subdivisional small payments would everywhere require paper certificates. But free coinage of all gold would constitute the whole of the yellow money metal the perfect money measure for mankind. All might not be brought for coinage. All could be. All would be taken out of the category of commodities and raised to the uniform level of the monetization.

"Now, what could gold purchases do, gold being the sole money metal, except transfer ownership?

"So if all gold were put out of existence and the silver doubled, again the money measure would be the same and the convenience less. But free coinage of all silver would constitute the whole of that white metal the still perfect money measure of mankind. All would never be brought for coinage. All could be. Enough would be brought for all payments to be made, and standard bullion would be as precious as the same weight of coin, for all would be taken out of the category of commodities and raised to the uniform level of monetization.

"What now could silver purchases do, silver being the sole money metal, except transfer ownership?

"Instead of \$8,000,000,000 of gold with no silver, and instead of \$8,000,000,000 of silver with no gold, mankind has a better, a bimetallic money; in round numbers, say \$4,000,000,000 of silver and \$4,000,000,000 of gold—a bimetallic money, although for the moment lacking their ancient legal correlation.

"What now is it conceivable that gold purchases or silver purchases can do, by transfer of ownership, more than in the monometallic cases I have imagined, when the money of mankind is bimetallic?

"How can purchases of one money metal repair the lack of legal correlation of the two money metals? Whence could come a rated parity of both save by competent conjoined free coinage of both, to wit, free bimetallic coinage?"

"Excepting a comparatively small amount in the arts and industries, all this gold is in monetary use and has free coinage somewhere. Likewise all this silver is in monetary use, and has free coinage somewhere.

"Wherever free coinage of either metal exists, the metal of the coin loses nothing in the crucible. It can be recoined into the same money with no loss. This is just as true of silver as of gold, under free-coinage *régimes*. Liquid in the crucible or solid in the coin, the weight and worth of the money metal remain identical.

"But what have silver purchases to do with that effect of free coinage?"

"Nothing.

"What have silver purchases to do with that effect of free bimetallic coinage, which, besides establishing equality in crucible or coin for each of the two metals separately, also in all payments, establishes, at a ratio of weight, parity for both?"

"Nothing.

"It is for these reasons that I would respectfully ask the Senators of the silver-producing States to consider whether a just view of the particular interest of their constituents, whom they so loyally represent, will not be soonest reached among all who do not mine silver, by the disassociation of that money-metal output from every Government relation first, and, finally, from every Government relation except that which, as with gold, should alone subsist in the United States, namely, free bimetallic coinage."

Mr. Hill's motion to take up the bill for consideration was put to a vote and defeated, as follows:

YEAS—Brice, Caffery, Davis, Dawes, Dixon, Faulkner, Frye, Gallinger, Gibson, Gorman, Hale, Hawley, Hill, Hoar, McPherson, Mills, Morrill, Palmer, Proctor, Sherman, Vest, Vilas, White—23.

NAYS—Bate, Berry, Blackburn, Blodgett, Call, Carey, Cockrell, Coke, Cullom, Daniel, Dolph, Dubois, Felton, George, Gordon, Hansbrough, Harris, Hunton, Irby, Jones of Nevada, Kyle, McMillan, Manderson, Mitchell, Morgan, Pasco, Pepper, Perkins, Pettigrew, Platt, Power, Pugh, Ransom, Shoup, Squire, Stewart, Stockbridge, Teller, Turpie, Vanee, Voorhees, Wolcott—42.

NOT VOTING—Aldrich, Allen, Allison, Butler, Camden, Cameron, Casey, Chandler, Colquitt, Gray, Higgins, Hiscock, Jones of Arkansas, Paddock, Quay, Sanders, Sawyer, Stanford, Walthall, Warren, Washburn, Wilson—22.

And so the measure fell by the way in both Houses of Congress.

**Mexican-War Pensions.**—The Senate passed at the first session the following bill increasing the rate of pensions for certain persons who had served in the war with Mexico:

*Be it enacted, etc.,* That the Secretary of the Interior be, and he is hereby, authorized to increase the pension of every pensioner who is now on the rolls at \$8 per month on account of services in the Mexican War, and who is wholly disabled for manual labor and is in such destitute circumstances that \$8 per month are insufficient to provide him the necessities of life, to \$12 per month.

Dec. 19, 1892, Mr. Wilson, of Missouri, moved, in the House of Representatives, that the rules be suspended and the following substitute for the Senate bill be passed:

Strike out all after the enacting clause and insert:

"That the Secretary of the Interior be, and he is hereby, authorized and directed to increase to the sum of \$12 per month the pension of every pensioner, including widows and the officers and enlisted men of Powell's Battalion of Missouri Mounted Volunteers, who is now on the rolls or entitled to be pensioned at \$8 per month under the act of Congress entitled 'An Act granting pensions to the soldiers and sailors of the Mexican War, and for other purposes,' approved Jan. 29, 1887, and the act of Congress entitled 'An Act granting pensions to Powell's Battalion of Missouri Mounted Volunteers,' approved March 3, 1891: *Provided*, That the increase of pension provided herein shall begin from and after the date of the passage of this act."

Mr. Wilson said, in answer to an inquiry as to the increased expenditure which such a measure would entail, by reading from the report of the Committee on Pensions: "From figures submitted to your committee by the Commissioner of Pensions, it appears that the number of survivors of said war now on the pension roll is 15,398, and the number of widows 7,286, making a total of 22,684. If all of these pensioners were to receive an increase of \$4 per month pension, the aggregate additional expenditures for the first year would be \$1,088,832; but, as is well known, the beneficiaries are all now greatly advanced in years, and the number of pensioners is being rapidly reduced by death, so that if this bill becomes a law the annual cost will not be so great as to add to any very appreciable extent to the pension expenditure."

In explanation of the peculiar character of the proposed amendment, Mr. Wilson said, in answer to a question from Mr. Dingley, of Maine:

"The gentleman from Maine will perhaps remember that the act granting a pension to Powell's battalion was passed on March 3, 1891. This battalion was raised for service in the Mexican War, and were *en route* to the scene of war when they were stopped on the way, and orders were issued countermanding the original order sending them to the seat of war, and they were sent out on the plains to replace the regulars who were operating there against the Indians. This battalion was sent out on what was known as the Oregon trail, and were there engaged while the regulars were sent to Mexico."

Mr. Heard, of Missouri, added a word on this curious topic:

"If my colleague will allow me a moment, I will state for the information of the gentleman from Maine, and any one else who has any difficulty in his mind upon this subject, that there were several other military organizations which were in exactly the same condition as these Mexican troops. Morgan's Iowa battalion, for instance, enlisted just like this Missouri battalion for service in the Mexican War, but in place of being sent into Mexico they were sent out on the frontier to hold the forts, while the regulars, who had been performing this service before, were sent into Mexico.

"The gentleman will remember the language of the general act provided for pensioning the Mexican volunteers who had served for sixty



days, I think it was, in the actual operations of war or *en route* to the seat of war. That language, however, did not embrace this Missouri battalion, nor would it have embraced the battalion of Iowa troops. It was necessary, therefore, to supplement this act by the provision which my colleague from Missouri has submitted to bring these soldiers within the purview of the general pension law granting pensions to the Mexican soldiers.

"Now, the soldiers of Powell's battalion and Morgan's battalion, and a half dozen other organizations of the same kind, were not actually sent to the seat of war. They enlisted for the purpose of going into Mexico, but in place of being sent there their services were used on the frontiers, to replace the regulars who were sent in their stead into Mexico; and we have been granting special pensions from time to time for all of these people."

As the amendment was received with strong marks of disfavor, Mr. Wilson withdrew it by unanimous consent, and asked for a vote on the bill as it came from the Senate. The rules were suspended, and the measure was passed by a vote of 172 yeas to 8 nays, 149 Representatives not voting:

YEAS—Alexander, Amerman, Arnold, Atkinson, Babbitt, Baker, Bartine, Barwig, Beeman, Belknap, Beltzhoover, Bland, Boatner, Bowers, Branch, Brawley, Bretz, Brickner, Broderick, Brookshire, Brosius, Brunner, Bryan, Bullock, Bunn, Busey, Butler, Byrns, Causey, Clark of Wyoming, Clover, Cobb of Alabama, Cobb of Missouri, Coburn, Cockran, Covert, Cox of Tennessee, Crain of Texas, Crawford, Crosby, Culbertson, Cummings, Curtis, Cutting, Daniell, Davis, De Armond, Dingley, Dixon, Donovan, Durborow, English, Enloe, Enochs, Epes, Everett, Fellows, Forney, Fowler, Funston, Fyan, Geary, Gorman, Grady, Greenleaf, Hallowell, Halvorson, Hare, Harmer, Harries, Hatch, Haugen, Haynes of Ohio, Heard, Hemphill, Hermann, Hilborn, Holman, Hooker of Mississippi, Hopkins of Pennsylvania, Huff, Hull, Johnson of North Dakota, Johnstone of South Carolina, Jolley, Kem, Kribbs, Lanham, Lawson of Virginia, Layton, Lind, Livingston, Lockwood, Long, Loud, Lynch, Mallory, Martin, McKaig, McKinney, McLaurin, McMillin, MeRae, Meyer, Miller, Milliken, Mitchell, Moore, Mutehler, Oates, O'Donnell, O'Ferrall, Ohliger, O'Neill of Pennsylvania, O'Neill of Missouri, Otis, Outhwaite, Page of Rhode Island, Parrett, Patterson of Tennessee, Patton, Payne, Paynter, Pearson, Peel, Perkins, Piekler, Post, Powers, Raines, Randall, Reburn, Richardson, Seull, Shonk, Simpson, Smith, Sperry, Springer, Stephenson, Steward of Illinois, Stewart of Texas, Stockdale, W. A. Stone, Stone of Kentucky, Stout, Sweet, Tarsney, Taylor of Illinois, E. B. Taylor, J. D. Taylor, Terry, Tillman, Tracey, Tucker, Turner, Turpin, Van Horn, Wadsworth, Watson, Waugh, Wheeler of Alabama, Wike, Wilcox, Williams of North Carolina, Williams of Illinois, Wilson of Washington, Wilson of Missouri, Winn, Wolverton, Wright, Youmans—172.

NAYS—Andrew, Bankhead, Breckinridge of Arkansas, Diekerson, Herbert, Hoar, Pierce, Snodgrass—8.

NOT VOTING—Abbott, Alderson, Allen, Antony, Bacon, Bailey, Belden, Bentley, Bergen, Bingham, Blanchard, Blount, Boutelle, Bowman, Breckinridge of Kentucky, Brown of Indiana, Brown of Maryland, Buchanan of New Jersey, Buchanan of Virginia, Bunting, Burrows, Bushnell, Bynum, Cable, Cadmus, Caldwell, Caminetti, Campbell, Capehart, Caruth, Castle, Catchings, Cate, Cheatham, Chipman, Clancy, Clarke of Alabama, Cogswell, Compton, Coolidge, Coombs, Cooper, Cowles, Cox of New York, Dalzell, De Forest, Doan, Dockery, Dolliver, Dungan, Dun-

phy, Edmunds, Elliott, Ellis, Fitch, Fithian, Fliek, Forman, Gantz, Geissenhainer, Gillespie, Goodnight, Griswold, Grout, Hall, Hamilton, Harter, Hayes of Iowa, Henderson of Iowa, Henderson of North Carolina, Henderson of Illinois, Hitt, Hooker of New York, Hopkins of Illinois, Houk of Ohio, Houk of Tennessee, Johnson of Indiana, Johnson of Ohio, Jones, Kendall, Ketcham, Kilgore, Kyle, Lagan, Lane, Lapham, Lawson of Georgia, Lester of Virginia, Lester of Georgia, Lewis, Little, Lodge, Magner, Mansur, McAleer, McClellan, McCreary, McGann, McKeighan, Meredith, Montgomery, Morse, Moses, Newberry, Norton, O'Neil of Massachusetts, Owens, Pattison of Ohio, Pendleton, Price, Quackenbush, Ray, Rayner, Reed, Reilly, Rife, Robertson of Louisiana, Robinson of Pennsylvania, Rockwell, Rusk, Russell, Sanford, Sayers, Scott, Seerley, Shell, Shively, Sipe, Snow, Stahlnecker, Stevens, C. W. Stone, Storer, Stump, Taylor of Tennessee, V. A. Taylor, Townsend, Walker, Warner, Washington, Weadock, Wever, Wheeler of Michigan, White, Whiting, Williams of Massachusetts, Wilson of Kentucky, Wilson of West Virginia, Wise—149.

Jan. 3, 1893, the President approved the measure.

**Issue of Bonds.**—One of the most interesting contests in this session of Congress was that arising out of an amendment to the Sundry Civil Appropriation bill proposed by Mr. Sherman, of Ohio, when the House measure was under consideration in the Senate. The amendment was as follows:

To enable the Secretary of the Treasury to provide for and maintain the redemption of United States notes according to the provisions of the act approved Jan. 14, 1875, entitled "An Act to provide for the resumption of specie payments," \$50,000; and, at the discretion of the Secretary, he is authorized to issue, sell, and dispose of, at not less than par in coin, either of the description of bonds authorized in said act, or bonds of the United States bearing not to exceed 3 per cent. interest, payable semiannually and redeemable at the pleasure of the United States after five years from their date with like qualities, privileges, and exemptions provided in said act for the bonds therein authorized, to the extent necessary to carry said resumption act into full effect, and to use the proceeds thereof for the purposes provided in said act and none other.

This provision for an issue of bonds brought on in the Senate a general discussion of the financial situation with a renewal of the old controversy in regard to silver. Feb. 18, 1893, the Senate, after rejecting various proposed modifications, adopted the amendment by the following vote:

YEAS—Aldrich, Allison, Brier, Caffery, Chandler, Cullom, Davis, Dixon, Felton, Frye, Gorman, Gray, Hale, Hansbrough, Harris, Hawley, Higgins, Hiscock, Hoar, McMillan, McPherson, Morrill, Perkins, Sawyer, Sherman, Stockbridge, Vilas, Voorhees, Washburn, White—30.

NAYS—Bate, Call, Coekrell, Coke, George, Gordon, Jones of Nevada, Kyle, Mitchell, Pepper, Power, Pugh, Shoup, Stewart, Teller, Vest—16.

NOT VOTING—Allen, Berry, Blackburn, Blodgett, Butler, Camden, Cameron, Carey, Casey, Colquitt, Daniel, Dawes, Dolph, Dubois, Faulkner, Gallinger, Gibson, Hill, Hinton, Irby, Jones of Arkansas, Mandererson, Mills, Morgan, Paddock, Palmer, Paseo, Pettigrew, Platt, Proctor, Quay, Ransom, Sanders, Squire, Stanford, Turpie, Vanee, Walthall, Warren, Wilson, Wolcott—41.

The House non-concurred in the Senate amendments to this appropriation bill, and the Senate finally receded from this amendment. Mr. Sher-

man said on that occasion, March 1, in explanation of the measure :

"Mr. President, the resumption act referred to in the amendment contains an important stipulation, which I ask the Secretary to read. Let the clause of the resumption act which enables the Secretary to maintain specie payments be read :

To enable the Secretary of the Treasury to prepare and provide for the redemption in this act authorized or required, he is authorized to use any surplus revenues, from time to time, in the Treasury not otherwise appropriated, and to issue, sell, and dispose of, at not less than par, in coin, either of the descriptions of bonds of the United States described in the act of Congress approved July 14, 1870, entitled "An Act to authorize the refunding of the national debt," with like qualities, privileges, and exemptions, to the extent necessary to carry this act into full effect, and to use the proceeds thereof for the purposes aforesaid.

"I wish also to have read to the Senate the character and description of bonds authorized to be issued under what is called the refunding act referred to in the resumption act :

That the Secretary of the Treasury is hereby authorized to issue, in a sum or sums not exceeding in the aggregate \$200,000,000, coupon or registered bonds of the United States, in such form as he may prescribe, and of denominations of \$50, or some multiple of that sum, redeemable in coin of the present standard value, at the pleasure of the United States after ten years from the date of their issue, and bearing interest, payable semiannually in such coin, at the rate of 5 per cent. per annum ; also, a sum or sums not exceeding in the aggregate \$300,000,000 of like bonds the same in all respects, but payable at the pleasure of the United States, after fifteen years from the date of their issue, and bearing interest at the rate of  $4\frac{1}{2}$  per cent. per annum ; also, a sum or sums not exceeding in the aggregate \$1,000,000,000 of like bonds, the same in all respects, but payable at the pleasure of the United States after thirty years from the date of their issue, and bearing interest at the rate of 4 per cent. per annum.

"It is apparent from these laws, which are fundamental in their character, that the Secretary has imposed upon him not merely the privilege but the duty of maintaining or providing for the resumption of specie payments and the maintenance of the specie standard in gold and silver coin. He is also authorized by a subsequent act, which I do not care to have read because it is not necessary, to maintain \$100,000,000 in gold in the nature of a redemption fund, or rather that was the minimum limit provided in the law.

"Mr. President, in order to perform this grave duty the Secretary of the Treasury was authorized, at his discretion, whenever necessary—and the whole matter was left to the Secretary of the Treasury—in order to obtain the coin required, to issue a bond bearing 4 per cent. interest running for thirty years, or a bond bearing  $4\frac{1}{2}$  per cent. interest running fifteen years, or a bond bearing 5 per cent. interest running ten years.

"It has been feared—I do not say that there has been occasion for this fear—that the Secretary of the Treasury can not maintain the necessary resumption fund ; that he may have to resort to the credit of the Government, upon which all the greenback issues of the United States notes and bonds are founded ; that he might have to resort to the sale of bonds to obtain money in order

to maintain the parity of the different forms of money in this country and the redemption or payment in coin when demanded of the obligations of the United States, especially the United States notes, commonly called greenbacks.

"When I came, in examining this question, to see whether or not the law enacted in 1875 was applicable to the condition of affairs in 1893, it was apparent to me, as it must have been to every man, however ignorant he might be of the principles of finance, that the conditions of our country were such that we would not be justified by public opinion or by the interests of our people to sell a bond bearing 4 or  $4\frac{1}{2}$  or 5 per cent. interest.

"There was some doubt, in fact, whether a 5-per-cent. or  $4\frac{1}{2}$ -per-cent. bond could be issued, because the general theory and habit of the Government has been, when a particular class or description of bonds is issued, though the bonds may be sold at different dates, to have them all dated on the date of the first issue. Though many of the 4-per-cent. bonds now outstanding were issued in 1880 and 1881, yet they all bear the date 1877, because that was the year of the first issue, and they are maintained as of that date. When issued the coupons are cut off up to the date of issue, so that the bond shall bear interest only from the date of issue.

"There are difficulties, therefore, which will fall upon the Secretary of the Treasury when he comes to exercise this power in issuing this class of bonds, first, because they bear too high a rate of interest, and next, because they run too long. The experience of our country shows that the right to redeem bonds within a short period of time is one of the most important and valuable properties which can be given to a bond. I, for one, with my experience and knowledge of these subjects, would not now be willing to issue any bond running more than five or ten years at any rate of interest and then redeemable at the pleasure of the United States, because we know that by changing circumstances we may reduce the rate of interest and borrow money at a less rate than the rate of interest we were obliged to pay at the time of borrowing the principal or issuing the bonds.

"Then there was another trouble. If the Secretary of the Treasury was called upon to issue 4-per-cent. bonds, if he should date them as of the date of 1877, they would mature in 1907. So that with this, the most favorable bond he could issue, he would have to issue a bond running for fourteen years and bearing interest at 4 per cent.

"Therefore it was manifest to me, as it would be manifest to any one who would look at the question without any feeling about it at all, that if we could borrow money at 3 per cent. on bonds running for five years or for a short period of time, always reserving our right to redeem these bonds within a short period, it would save a vast sum to the people of the United States, at least one fourth of the interest on the bonds, and we would save more by the right to redeem them if a favorable turn in the market should enable us to do so."

Mr. Wolcott, of Colorado, said in criticism of the Sherman amendment :

"Mr. President, it is very apparent that the



purpose of the Senator from Ohio in taking the time of the Senate this afternoon was that he might give voice officially to the fact which has generally been understood through both Houses of Congress that both political parties, as represented by the present Secretary of the Treasury and the Secretary of the Treasury to be, have coincided in the desire for the passage of the amendment, which was to permit the Secretary of the Treasury to add to the public debt of the United States and to sell more bonds.

"I think the announcement of that fact was a wise announcement. I think it is proper for the country to know that the incoming Administration as well as the Administration now going out are in agreement upon the proposition that the people should be further burdened with a public debt, upon a silly proposition to sell bonds the proceeds of which were to draw no interest and were to go into the Treasury, and the only effect of which was to make a gold scare in New York, and depress the market for bonds and for securities.

"Beyond that point, Mr. President, I am sorry the Senator from Ohio went. In the first place, referring not alone to the remarks of the Senator from Ohio, I think any one who at this stage of the session makes an extended financial speech, when everybody knows that this amendment is to be voted out and we are only going through the formality of submitting it to the Senate, is not regardful of public interests and the demands of public business."

**Safety of Life on Railroads.**—During the first session of Congress the House of Representatives passed a bill "to promote the safety of employees and travelers upon railroads by compelling common carriers engaged in interstate commerce to equip their cars with automatic couplers and continuous brakes and their locomotives with driving-wheel brakes." In the Senate the following substitute for the House bill was adopted:

*Be it enacted, etc.,* That from and after the 1st day of January, 1893, it shall be unlawful for any common carrier engaged in interstate commerce by railroad to use on its line any locomotive engine in moving interstate traffic not equipped with a power driving-wheel brake and appliances for operating the train-brake system, or to run any train in such traffic after said date that has not a sufficient number of cars in it so equipped with power or train brakes that the engineer on the locomotive drawing such train can control its speed without requiring brakemen to use the common hand brake for that purpose.

SEC. 2. That on and after the 1st day of January, 1893, it shall be unlawful for any such common carrier to haul or permit to be hauled or used on its line any car used in moving interstate traffic not equipped with couplers coupling automatically by impact, and which can be uncoupled without the necessity of men going between the ends of the cars.

SEC. 3. That when any person, firm, company, or corporation engaged in interstate commerce by railroad shall have equipped a sufficient number of its cars so as to comply with the provisions of section 1 of this act, it may lawfully refuse to receive from connecting lines of roads or shippers any cars not equipped sufficiently, in accordance with the first section of this act, with such power or train brakes as will work and readily interchange with the brakes in use on its own cars, as required by this act.

SEC. 4. That from and after the 1st day of July, 1895, until otherwise ordered by the Interstate Com-

merce Commission, it shall be unlawful for any railroad company to use any car in interstate commerce that is not provided with secure grab irons or hand holds in the ends and sides of each car for greater security to men in coupling and uncoupling cars.

SEC. 5. That within ninety days from the passage of this act the American Railway Association is authorized hereby to designate to the Interstate Commerce Commission the standard height of drawbars for freight cars, measured perpendicular from the level of the tops of the rails to the centers of the drawbars, for each of the several gauges of railroads in use in the United States, and shall fix a maximum variation from such standard height to be allowed between the drawbars of empty and loaded cars. Upon their determination being certified to the Interstate Commerce Commission, said commission shall at once give notice of the standard fixed upon to all common carriers, owners, or lessees engaged in interstate commerce in the United States by such means as the commission may deem proper. But should said association fail to determine a standard as above provided, it shall be the duty of the Interstate Commerce Commission to do so, before July 1, 1894, and immediately to give notice thereof as aforesaid. And after July 1, 1895, no cars, either loaded or unloaded, shall be used in interstate traffic which do not comply with the standard above provided for.

SEC. 6. That any such common carrier using any locomotive engine, running any train, or hauling or permitting to be hauled or used on its line any car in violation of any of the provisions of this act, shall be liable to a penalty of \$100 for each and every such violation, to be recovered in a suit or suits to be brought by the United States district attorney in the district court of the United States having jurisdiction in the locality where such violation shall have been committed, and it shall be the duty of such district attorney to bring such suits upon duly verified information being lodged with him of such violation having occurred. And it shall also be the duty of the Interstate Commerce Commission to lodge with the proper district attorneys information of any such violations as may come to its knowledge: *Provided*, That nothing in this act contained shall apply to trains composed of four-wheel cars or to locomotives used in hauling such trains.

SEC. 7. That the Interstate Commerce Commission may from time to time upon full hearing and for good cause extend the period within which any common carrier shall comply with the provisions of this act.

SEC. 8. That any employee of any such common carrier who may be injured by any locomotive, car, or train contrary to the provision of this act shall not be deemed thereby to have assumed the risk thereby occasioned, although continuing in the employment of such carrier after the unlawful use of such locomotive, car, or train had been brought to his knowledge.

It passed the Senate Feb. 11, 1893, by the following vote, after an earnest discussion:

YEAS—Allison, Berry, Caffery, Call, Carey, Chandler, Cockrell, Coke, Cullom, Davis, Dawes, Dolph, Dubois, Felton, Frye, Gallinger, Gray, Hansbrough, Hawley, Hoar, Jones of Nevada, Kyle, McMillan, McPherson, Morrill, Palmer, Pasco, Pepper, Perkins, Proctor, Pugh, Sherman, Squire, Teller, Turpie, Vilas, Voorhees, Washburn, White—39.

NAYS—Blodgett, Brice, Daniel George, Gorman, Harris, Morgan, Sawyer, Stewart, Vance—10.

NOT VOTING—Aldrich, Allen, Bate, Blackburn, Butler, Camden, Cameron, Casey, Colquitt, Dixon, Faulkner, Gibson, Gordon, Hale, Higgins, Hill, Hiscock, Hunton, Irby, Jones of Arkansas, Manderson, Mills, Mitchell, Paddock, Pettigrew, Platt, Power, Quay, Ransom, Sanders, Shoup, Stanford, Stockbridge, Vest, Walthall, Warren, Wilson, Wolcott—38.

In presenting the measure, Mr. Cullom, of Illinois, said in support of it:

"Mr. President, it does not seem to me that the Senate can afford, with due deference to public judgment and the performance of its own duty, to neglect this subject any longer. The Senator from Maryland and every other member of the Committee on Interstate Commerce know that I have at no time been disposed to crowd legislation beyond what seemed to be absolutely necessary, and I have sometimes felt that I was almost negligent in my duty as chairman of the committee in not pressing legislation earlier than I have done.

"But when a bill has been introduced upon this subject, or any vital amendment to the interstate commerce act has been referred to the committee, the committee has been disposed to hear everybody interested, so as to be sure and make no mistake in what it undertook to do, and that it should not inflict a wrong upon anybody in connection with the railroad service.

"So this subject has been before the Interstate Commerce Committee I think for three or four years, and from time to time we have heard gentlemen representing railroads and representing the employees of railroads, and we have felt a degree of uncertainty heretofore (at least before the last session of Congress) in regard to the matter. We felt that we were not prepared to formally recommend any legislation on the subject lest we might recommend something that Congress ought not to do.

"In the meantime the President of the United States has been calling upon Congress to act. In the meantime, as I said the other day, railroad commissioners of States have been calling upon us to act. In the meantime the labor organizations whose members have had the work to do in the conduct of the railroads have been calling upon us to act. But there was such a diversity of judgment as to the kind of action we ought to take that we thought we were justified in letting the matter wait for the development of further information on the subject.

"However, during the last session of Congress the Senate committee acted, and acted upon the House bill which is now before us, and reported a substitute for that House bill, which, I may say frankly, is more liberal to the common carriers of the country than the House bill itself. The desire of the committee, so far as I know, has been that something should be done upon this question that would give the common carriers or railroads of the country to understand that they must put these devices or some devices upon their cars and their locomotives to give greater security to the lives of the men who are operating the railroads.

"I may read from the messages of the President. Beginning in 1889, he says, in his first annual message:

The attention of the Interstate Commerce Commission has been called to the urgent need of congressional legislation for the better protection of the lives and limbs of those engaged in operating the great interstate freight lines of the country, and especially of the yardmen and brakemen, etc.

"This is only a paragraph of what he said in his first message.

"The honorable Senator from Maryland raises

the question that Congress has nothing to do with the subject. There has not seemed to be any question in the minds of the people, in the minds of the State Railroad Commissioners, in the minds of the Interstate Commerce Commissioners, or in the mind of the President as to the power of Congress to legislate upon this subject, requiring such devices upon locomotives and cars used in interstate commerce as shall as far as possible result in the protection of the lives and limbs of those who are operating them.

"The President, in his second annual message, submitted in December, 1890, again called the attention of Congress to the necessity for greater uniformity in safety appliances in the following words:

It may still be possible for this Congress to inaugurate, by suitable legislation, a movement looking to uniformity and increased safety in the use of couplers and brakes upon freight trains engaged in interstate commerce. The chief difficulty in the way is to secure agreement as to the best appliances, simplicity, effectiveness, and cost being considered, etc.

"Then afterward the President sent another message, and finally in the last message which he sent Congress the recommendation was renewed.

"Still the Senate of the United States, I may say because perhaps the bill was in the control of the Interstate Commerce Committee, has taken no action. We have let it rest and continue to rest, hoping that we might arrive at something that would be certain to result in the very best possible interest of the men operating the roads. In the meantime the national conventions took up the subject. I do not refer to it myself for the purpose of making this a party discussion, but to show that the Senate itself ought to take some action if it has any regard for pledges to the country as Democrats and Republicans. Let us see what the national conventions say. Take the Republican platform adopted at Minneapolis:

We favor efficient legislation by Congress to protect the life and limbs of employees of transportation companies engaged in carrying on interstate commerce, and recommend legislation by the respective States that will protect employees engaged in State commerce, in mining and manufacturing.

"Then the Democratic convention at Chicago adopted the following:

Sec. 19.—We favor legislation by Congress and State legislatures to protect the lives and limbs of railway employees and those of other hazardous transportation companies, and denounce the inactivity of the Republican party, and particularly the Republican Senate, for causing the defeat of measures beneficial and protective to this class of wage workers."

There was a strong fight against the measure in the House of Representatives, and in the course of it Mr. Washington, of Tennessee, presented the case for the railroads as follows:

"My time is so short I will not discuss the legal aspect and the grave constitutional questions involved in this sort of legislation. They have already been briefly commented upon; but, sir, if Congress has the right to prescribe the coupler and brake which shall go upon a freight car, it has the same right and the power to prescribe in every detail and particular the construction of that car, the material of which



it shall be composed, and even the color which it shall be painted. If this legislation is constitutional and right, then the door is open wide for absolute control of all private enterprise by Congress, and it is but a short step to Government ownership of all the instruments of interstate commerce and travel. Then centralization and imperialism will be at hand.

"This bill, sir, proceeds on the theory that if the couplers and brakes now in use on freight trains are substituted by those described in this bill, that all killing and maiming of trainmen would cease. That conclusion is erroneous and is based purely on assumption. Indeed, the very contrary has been asserted by many of the witnesses who testified before the committee. Practical trainmen of long experience stated that the automatic impact couplers now in use were more dangerous, more disastrous to life and limb than the old link-and-pin coupler.

"How many gentlemen on this floor know what shape or type of coupler this bill proposes to force the railroads to adopt? I hold in my hand a model of what is known as 'an impact automatic coupler.' This is the 'Buckeye coupler,' many of which are in use by the Baltimore and Ohio Railroad. Here is another model, 'the Janney,' which is being tried by the Pennsylvania Railroad.

"Sir, neither of these couplers is perfect; both have their good points and their weak or bad points, and so with every automatic coupler thus far invented. If by law you compel the railroads to adopt one or the other of these as they now are, and to expend \$80,000,000 or \$100,000,000 in applying them to their freight cars, you at once petrify, as it were, this improvement. You paralyze invention and stop experiment. As it is to-day, in the absence of legislation the railroads are spending vast sums of money every year experimenting with these devices—searching for a perfect practical coupler and air brake; and as soon as it has been found and the fact established by use, every railroad will adopt it, without any law. Did it require congressional enactment to compel the equipment of passenger cars with patent automatic couplers and buffers, with air brakes, and vestibule arrangements, by which the whole train, for all practical purposes, is one car?

"Sir, this bill requires of the roads a physical impossibility. It compels them to adopt and conform the drawbars on all their cars to a uniform height by January, 1895, and allows until January, 1898, to change the couplers.

"The drawbar and the coupler are one and the same thing. They are interchangeable terms for that appliance by which one car is attached to another and the train is drawn. To raise or lower the drawbar you must raise or lower the entire coupler. To do this requires a great change in the rods and beams under every car. In many cases it would compel such considerable alterations in the trucks as to require that they should be made over. In many cars of a capacity to carry a load of 20,000 to 40,000 pounds the trucks are so low and the structure of the car is such that the drawbar or coupler could not be raised to conform to the standard of a car having a capacity to carry a load of 100,000 pounds.

"There are many coal and ore cars, such as the hopper cars used by the Baltimore and Ohio Railroad, where the construction is such that the coupler, which is higher than the present standard of 33 inches, can not be lowered. For this reason much of the freight equipment of the country would have to be abandoned, would be worthless, because under the bill, unless they conformed to the standard of height prescribed for drawbars, these cars could not be used in interstate commerce.

"The estimate, therefore, of \$100 each on 1,000,000 freight cars, amounting to \$100,000,000, does not begin to fully measure the financial cost of this piece of experimental legislation to the railroads of the country.

"I said this bill would require the roads to perform an impossible task. I have been positively informed by reliable authority that in the eighteen months within which this bill requires all drawbars to be changed to a standard height that it would be absolutely beyond the power of the Baltimore and Ohio Company to so modify its 29,000 freight cars if it stopped all its traffic, ceased all other kinds of repairs, and devoted all the men and machinery in its vast shops simply to changing the height of the drawbars. If such would be the case on one of the great trunk lines, what would be the condition of the smaller and weaker roads in the South and West?

"Sir, I am further informed that it would be impossible for the railroad companies to change their equipment by Jan. 1, 1898, and adopt the appliances required by this act within the five years allowed. To illustrate again: Twenty-nine thousand freight cars are owned by the Baltimore and Ohio Railroad Company; 3,000 are equipped with automatic couplers; to equip the remainder, as provided by this act, with automatic couplers and brakes, will require an expenditure of over \$4,000,000. On the Baltimore and Ohio the number of cars per year to be thus equipped would be practically 6,000 over and above the new cars to be supplied each year. It is not possible to take 6,000 cars each year out of the service of that road for the purpose of having them equipped with automatic couplers and automatic brakes, and at the same time transact its business; this is simply a physical impossibility.

"What is true of the Baltimore and Ohio Railroad Company is true of every railroad in the United States, unless possibly the Pennsylvania Railroad, which has a larger proportion of its equipment already adjusted to automatic couplers and brakes."

The final vote in the House to suspend the rules and concur in the Senate amendments was taken Feb. 27, and was as follows:

YEAS—Abbott, Amerman, Arnold, Babbitt, Baker, Barwig, Belden, Belknap, Beltzhoover, Bland, Boutelle, Bowers, Bretz, Broderick, Brookshire, Brosius, Brown of Indiana, Brunner, Bryan, Burrows, Busey, Bushnell, Butler, Bynum, Cable, Cadmus, Caldwell, Caminetti, Campbell, Capehart, Castle, Cate, Chipman, Clancy, Clark of Wyoming, Clover, Coburn, Cogswell, Coolidge, Coombs, Cooper, Covert, Crain, Crosby, Cummings, Curtis, Dalzell, Daniell, Davis, De Armond, De Forest, Dingley, Doan, Dockery, Doliver, Donovan, Durborow, Enochs, Fithian, Fliet, Forman, Funston, Fyan, Gantz, Geissenhainer, Gorman, Griswold, Grout, Halvorson, Hare, Harner, Har-

ter, Hatch, Haugen, Haynes of Ohio, Heard, Hemp-hill, Henderson of Iowa, Hermann, Hilborn, Hiitt, Holman, Hooker of New York, Hopkins of Pennsylvania, Hopkins of Illinois, Houk of Ohio, Huff, Hull, Johnson of Indiana, Johnson of North Dakota, Jolley, Jones, Kem, Kribbs, Kyle, Lane, Lanham, Lapham, Lawson of Virginia, Lawson of Georgia, Layton, Lewis, Lind, Lockwood, Lodge, Loud, Lynch, Magner, Mallory, Mansur, Martin, McClellan, McGann, McKaig, McKeighan, McKinney, McLaurin, McRae, Mitchell, Moore, Morse, Norton, O'Donnell, O'Neil of Massachusetts, O'Neill of Missouri, Otis, Outhwaite, Page, Patterson of Tennessee, Patton, Payne, Paynter, Pearson, Perkins, Pickler, Post, Price, Quackenbush, Raines, Randall, Ray, Rayner, Robertson of Louisiana, Sayers, Scott, Shively, Simpson, Sipe, Smith, Sperry, Springer, Stahlnecker, Stephenson, Steward of Illinois, C. W. Stone, W. A. Stone, Storer, Stout, Sweet, Taylor of Illinois, J. D. Taylor, V. A. Taylor, Terry, Tiltman, Townsend, Van Horn, Walker, Warner, Watson, Waugh, Weadock, Wever, Wheeler of Michigan, White, Whiting, Wike, Wilcox, Williams of Massachusetts, Williams of Illinois, Wilson of Washington, Wilson of Missouri, Winn, Wise, Wright, Youmans—185.

NAYS—Allen, Antony, Bacon, Bailey, Bankhead, Bartine, Blanchard, Blount, Bowman, Branch, Brawley, Breckinridge of Arkansas, Breckinridge of Kentucky, Brown of Maryland, Buchanan of Virginia, Bullock, Bunn, Caruth, Catchings, Clarke of Alabama, Cobb of Alabama, Cobb of Missouri, Compton, Cox of Tennessee, Crawford, Culberson, Dickerson, Dungan, Edmunds, Elliott, Ellis, English, Enloe, Epes, Everett, Fellows, Forney, Geary, Grady, Greenleaf, Hallowell, Hamilton, Hayes of Iowa, Henderson of North Carolina, Herbert, Hooker of Mississippi, Houk of Tennessee, Johnson of Ohio, Kilgore, Lester of Virginia, Lester of Georgia, Livingston, Long, McAleer, McCreary, McMillin, Meredith, Miller, Montgomery, Moses, Mutchler, Oates, Ohliger, O'Neill of Pennsylvania, Owens, Peel, Pendleton, Pierce, Richardson, Rife, Robinson of Pennsylvania, Rusk, Scull, Shell, Snodgrass, Stone of Kentucky, Tucker, Turner, Turpin, Washington, Wheeler of Alabama, Williams of North Carolina, Wilson of Kentucky, Wolverton—84.

NOT VOTING—Alderson, Alexander, Andrew, Atkinson, Beeman, Bentley, Bergen, Bingham, Boatner, Brickner, Buchanan of New Jersey, Bunting, Byrns, Causey, Cheatham, Cockran, Cowles, Cox of New York, Cutting, Dixon, Dumphy, Fitch, Fowler, Gillespie, Goodnight, Hall, Harries, Henderson of Illinois, Hoar, Johnstone of South Carolina, Kendall, Ketcham, Lagan, Little, Meyer, Milliken, Newberry, O'Ferrall, Parrett, Pattison of Ohio, Powers, Reed, Reilly, Reyburn, Rockwell, Russell, Sanford, Seerley, Shonk, Snow, Stevens, Stewart of Texas, Stockdale, Stump, Tarsney, Taylor of Tennessee, E. B. Taylor, Tracey, Wadsworth, Wilson of West Virginia—60.

The President approved the measure, March 2, 1893.

**National Quarantine.**—A bill was reported in the House of Representatives for the better protection of commerce and for the general welfare by the establishment of a national quarantine. In presenting the measure Mr. Rayner, of Maryland, said, Jan. 21, 1893:

"I think we are all agreed upon the proposition that something should be done, if possible, to avoid the threatened presence of pestilence upon our shores during the coming summer, and that while we are providing for temporary security we ought to adopt some permanent plan to protect us in the future from the continual danger to which otherwise we should be exposed.

"It is needless for me to state to the House that it would be impossible to estimate the sacri-

fices we would incur and the losses which would be inflicted upon us if this deadly scourge that has lately depopulated one of the greatest commercial centers of Europe should gain an entrance upon our territory. War or famine would prove far less destructive because against war we could defend ourselves, and against famine we might seek deliverance through the relief and benevolence of mankind.

"I do not wish to create any false apprehensions upon this subject, but with the tide of immigration that is pouring in upon us at every port of entry, the highest authorities unite in predicting that it is almost impossible for us to evade or escape the threatened danger. If we adopt no preventive measures; if we look heedlessly on without any combined effort at resistance; if, with all its horrors staring us in the face, we defy it to approach us: if we are willing to take our chances and rely upon temporary devices and expedients when the emergency is upon us, then, Mr. Chairman, it will be a miracle if we escape, and I am almost tempted to say that it will be a just punishment if the danger overtakes us.

"I shall not consume the time of this House in discussing our constitutional power to pass a bill of this sort. The right to regulate commerce between the States and with foreign countries carries with it the fullest power that is necessary for this purpose. I believe not only in the power, but in the imperative duty of the Federal Government to assume jurisdiction over this matter; and I would, if I had my way—for I want to be very frank, and will say that this bill does not suit me, though I am willing to take it as compromise—if I had my own way I would curtail every unnecessary expense in order to provide for the creation, the equipment, and the maintenance of a board of maritime sanitation that would render the presence of this great calamity impossible in our midst. And if we are unwilling to do that, Mr. Chairman, I want to go a step further and say that I would be in favor of suspending all immigration from infected ports until the danger from infection is passed.

"There are two classes of immigrants coming to this country. The one class has been and will continue to be a benefit and a blessing to the country; the other is a detriment and an injury. This country was intended as an asylum for the downtrodden and the oppressed from every land who are in sympathy with our institutions. But it never was contemplated that our land should become a place of refuge for those who do not believe in any established institutions, who are the disciples of lawlessness, who have been educated in the schools of disorder and anarchy, and who come here simply because they believe that this being a free country, it will afford them a free opportunity to put their pernicious principles into successful execution.

"We may as well, Mr. Chairman, have plain, candid words on the subject; and I have no fear about expressing my exact convictions in reference thereto, because a number of these helpless wanderers whom despotism has lashed over every frontier in Europe and driven in on our shores, have my warmest and deepest sympathy in their distress. Robbed of their birthright, unpro-



tected by law, punished and expatriated, they have been despoiled of their homes, forced from their sanctuaries, and sent as outlaws from place to place upon the face of the earth simply for committing the crime of worshipping God according to the traditions of their faith and the dictates of their own consciences.

"I believe, sir, that every civilized nation on the face of the globe ought to combine to demand of their persecutors that they shall be required to amend their code of religious intolerance, and become proselytes at the altar of reason and humanity, or that they shall be no longer tolerated or maintain friendly contact and intercourse with the free nations of the world. But as deeply and profoundly as I feel on this subject, I do not believe that we ought to become the receptacle for the conditions and the vice and the crimes that are turned in on us from the Continent of Europe.

"Last summer, as all will remember, a foreign steamship company sent one of its vessels from an infected port, and with a living sepulchre beneath her decks, with flying colors, entered the harbor of New York, utterly regardless of the sanitary laws of that Commonwealth and of the hundreds and thousands of human lives being imperiled at the port of destination. Had it not been for the heroic conduct of your sanitary officer in that city, there is no foretelling what disaster might have been inflicted on our population. The master of this ship was willing to tie his vessel to the dock and actually to distribute his cargo and steerage, not only in defiance of the laws of New York, but in disregard of the maritime code of nations.

"This instance, Mr. Chairman, only illustrates how utterly powerless even the great State of New York, with its vast municipal powers, would be to provide itself and the balance of the State from an invasion of this character."

In criticism of one of the provisions of the bill Mr. Mallory, of Florida, said:

"I am in full accord with the gentleman in the view that he takes as to most of this bill. I believe that there is an urgent necessity at this moment for Congress to take active and efficient measures for the purpose of preventing the invasion of an epidemic, and I think, sir, that this bill indicates that it has been most carefully considered and weighed well by those qualified to do so.

"So far as the question of maritime quarantine is concerned I am in favor of all of the features of this bill. I believe it is within the power of Congress, under that clause of the Constitution that gives it the right to regulate commerce, to enact all measures that are necessary for the purpose of preventing the importation of diseases to our shores and across our borders; and if this bill were confined to that alone, I would do all that my Chamber of Commerce and my city council have telegraphed me requesting me to do, namely, to cast my vote for the measure.

"But, sir, there is a feature in this bill which I do not think we should allow to pass without at least some criticism. I refer to a portion of the third section.

"Under that portion of the third section to which I refer the Secretary of the Treasury is given power to prescribe rules and regulations,

and State and municipal sanitary authorities are empowered to enforce them if they desire; but in the event of State and municipal sanitary authorities failing or refusing to enforce them, then the President is armed with power to appoint Federal officials for the purpose of carrying out those provisions.

"These provisions, Mr. Chairman, relate to inhibitions upon intercourse between the States. Now, I will go as far as any gentleman who professes to entertain democratic principles in giving the Federal Government ample power in this matter; but, sir, do what I could, I have failed, after a careful examination of the situation and into the judicial decisions bearing upon this point, to find any authority in Congress to say that a citizen of the State of New York, not engaged in commerce, not in any way connected with commerce, can have the heavy hand of the Federal Government laid upon his shoulder and be compelled to abide in the State of New York against his will.

"That is a power we all concede to the States. The State of New Jersey can inhibit the passage of a citizen of New York across the Hudson river. The State of Kentucky can prohibit the passage of a citizen of Ohio across the Ohio river. But, sir, I say there is nowhere in the Constitution nor in any of the decisions that have been rendered by the tribunals in this land upon this question that you can put your finger upon a single utterance or intimation that gives that power to the President or to Congress.

"That, Mr. Chairman, is my special objection to this bill. I appreciate, as I have said, the necessity of our entering upon legislation of this character at this time. I think there is no State in the Union that has had a sadder experience of the necessity of some general legislation of this character than the State which I have the honor in part to represent here.

"Year after year our shores have been invaded by pestilence. Year after year the Legislature has been battling with it, and passing law after law endeavoring to reach a point whereby the sanitary condition of our country could be preserved; and I, who figured somewhat in the legislation of those days, long since reached the conclusion that so far as American quarantine is concerned it is in the power of the United States Government to impose or establish rules and regulations as stringent as may be, and that in the end it will prove to be for the benefit of the community. But, sir, I think that before we endorse the principle that is embodied in this portion of the third section, to which I have referred, before we open the door to the exercise of Federal power any more than it has been, notwithstanding the fact that the appeal is a most urgent one, notwithstanding the fact that eloquence can be poured upon us and every argument that oratory can employ can be ably employed, I say that we will be recreant to our duty if we pass this bill in the form in which it is presented.

"Mr. Chairman, I believe that our powers are limited by the Constitution, and unless authority is granted either directly or by reasonably necessary implication, I for one, sir, shall not pass beyond what I believe to be the limitations prescribed in that instrument."

It passed the House Feb. 23, and it was reported to the Senate with an amendment substituting the Senate measure on the same subject which had been passed but not taken up in the House. Mr. Hill, of New York, said in opposition:

"I know the tendency nowadays is to apply to the General Government for every sort of relief. That tendency it is somewhat difficult to resist. It has exhibited itself to a very great extent during the past few months, and, indeed, ever since the cholera scare of last summer. People who knew very little about the subject and those who knew considerable all came to the idea that there must be a national quarantine, and this bill seems to be the result of that public sentiment which is declared to exist.

"In my judgment the bill is all proper enough wherein it seeks to supply a Federal quarantine in those ports where the States do not provide the facilities. In those States where there are no quarantine regulations, or where the States desire to surrender their privileges in maintaining them, I have no objection to the General Government interfering. I do not believe in the doctrine that the General Government should for any period of time, unlimited as this bill is, interfere with and supersede the State authorities in the maintenance of quarantine.

"I have examined somewhat the pending substitute. It seems to be framed substantially like the act of 1879, whereby a national board of health was created, except that this bill substitutes the Marine Hospital Service instead of the National Board of Health.

"Mr. President, I do not like the tendency of this sort of legislation. The State of New York has always been willing to maintain quarantine substantially at its own expense with such aid as the General Government in emergencies has seen fit to give it. It has satisfied the people of New York State. There has been no substantial complaint of it. Other States may desire the interference of the General Government, but it seems to me a proper amendment to the bill would be a provision whereby it should be provided that the States which desire Government interference might have it and the States that do not desire it may dispense with it."

Mr. Harris, of Tennessee, said in explanation:

"There is not one word in this bill that proposes to interfere with State quarantine or State health officers, except to aid them in the execution of their own rules. Where, in the opinion of the Federal authority, the rules and regulations of the State board are not sufficient to prevent the introduction of disease the Federal authority may make additional rules—not to repeal, not to revoke, not to modify or interfere in any way whatever with any existing rules. If you have incorporated into your rules a dozen requirements that a vessel which enters port shall conform to, and the Federal authority shall think that all of them together are not quite equal to prevent the introduction of disease, the Federal authority may make an additional rule, but not interfere with the rule of the State authority. It does not repeal, modify, or change the State rule in the least."

The measure passed the Senate Feb. 6 without a division, and was approved by the President Feb. 15. It is as follows:

*Be it enacted, etc.,* That it shall be unlawful for any merchant ship or other vessel from any foreign port or place to enter any port of the United States except in accordance with the provisions of this act and with such rules and regulations of State and municipal health authorities as may be made in pursuance of, or consistent with, this act; and any such vessel which shall enter, or attempt to enter, a port of the United States in violation thereof shall forfeit to the United States a sum, to be awarded in the discretion of the court, not exceeding \$5,000, which shall be a lien upon said vessel, to be recovered by proceedings in the proper district court of the United States. In all such proceedings the United States district attorney for such district shall appear on behalf of the United States; and all such proceedings shall be conducted in accordance with the rules and laws governing cases of seizure of vessels for violation of the revenue laws of the United States.

SEC. 2.—That any vessel at any foreign port clearing for any port or place in the United States shall be required to obtain from the consul, vice-consul, or other consular officer of the United States at the port of departure, or from the medical officer where such officer has been detailed by the President for that purpose, a bill of health, in duplicate, in the form prescribed by the Secretary of the Treasury, setting forth the sanitary history and condition of said vessel, and that it has in all respects complied with the rules and regulations in such cases prescribed for securing the best sanitary condition of the said vessel, its cargo, passengers, and crew; and said consular or medical officer is required, before granting such duplicate bill of health, to be satisfied that the matters and things stated therein are true; and for his services in that behalf he shall be entitled to demand and receive such fees as shall by lawful regulation be allowed, to be accounted for as is required in other cases.

The President, in his discretion, is authorized to detail any medical officer of the Government to serve in the office of the consul at any foreign port for the purpose of furnishing information and making the inspection and giving the bills of health hereinbefore mentioned. Any vessel clearing and sailing from any such port without such bill of health, and entering any port of the United States, shall forfeit to the United States not more than \$5,000, the amount to be determined by the court, which shall be a lien on the same, to be recovered by proceedings in the proper district court of the United States. In all such proceedings the United States district attorney for such district shall appear on behalf of the United States; and all such proceedings shall be conducted in accordance with the rules and laws governing cases of seizure of vessels for violation of the revenue laws of the United States.

SEC. 3.—That the Supervising Surgeon-General of the Marine-Hospital Service shall, immediately after this act takes effect, examine the quarantine regulations of all State and municipal boards of health, and shall, under the direction of the Secretary of the Treasury, co-operate with and aid State and municipal boards of health in the execution and enforcement of the rules and regulations of such boards and in the execution and enforcement of the rules and regulations made by the Secretary of the Treasury to prevent the introduction of contagious or infectious diseases into the United States from foreign countries, and into one State or Territory or the District of Columbia from another State or Territory or the District of Columbia; and all rules and regulations made by the Secretary of the Treasury shall operate uniformly and in no manner discriminate against any port or place; and at such ports and places within the United States as have no quarantine regulations under State or municipal authority, where such regulations are, in the opinion of the Secretary of the Treasury, necessary to prevent the introduction of contagious or infectious diseases into the United States from foreign countries, or into one State or



Territory or the District of Columbia from another State or Territory or the District of Columbia, and at such ports and places within the United States where quarantine regulations exist under the authority of the State or municipality which, in the opinion of the Secretary of the Treasury, are not sufficient to prevent the introduction of such diseases into the United States, or into one State or Territory or the District of Columbia from another State or Territory or the District of Columbia, the Secretary of the Treasury shall, if in his judgment it is necessary and proper, make such additional rules and regulations as are necessary to prevent the introduction of such diseases into the United States from foreign countries, or into one State or Territory or the District of Columbia from another State or Territory or the District of Columbia, and when said rules and regulations have been made they shall be promulgated by the Secretary of the Treasury and enforced by the sanitary authorities of the States and municipalities, where the State or municipal health authorities will undertake to execute and enforce them; but if the State or municipal authorities shall fail or refuse to enforce said rules and regulations the President shall execute and enforce the same and adopt such measures as in his judgment shall be necessary to prevent the introduction or spread of such diseases, and may detail or appoint officers for that purpose. The Secretary of the Treasury shall make such rules and regulations as are necessary to be observed by vessels at the port of departure and on the voyage, where such vessels sail from any foreign port or place to any port or place in the United States, to secure the best sanitary condition of such vessel, her cargo, passengers, and crew; which shall be published and communicated to and enforced by the consular officers of the United States. None of the penalties herein imposed shall attach to any vessel or owner or officer thereof until a copy of this act, with the rules and regulations made in pursuance thereof, has been posted up in the office of the consul or other consular officer of the United States for ten days, in the port from which said vessel sailed; and the certificate of such consul or consular officer over his official signature shall be competent evidence of such posting in any court of the United States.

SEC. 4.—That it shall be the duty of the Supervising Surgeon-General of the Marine-Hospital Service, under the direction of the Secretary of the Treasury, to perform all the duties in respect to quarantine and quarantine regulations which are provided for by this act, and to obtain information of the sanitary condition of foreign ports and places from which contagious and infectious diseases are or may be imported into the United States, and to this end the consular officer of the United States at such ports and places as shall be designated by the Secretary of the Treasury shall make to the Secretary of the Treasury weekly reports of the sanitary condition of the ports and places at which they are respectively stationed, according to such forms as the Secretary of the Treasury shall prescribe; and the Secretary of the Treasury shall also obtain, through all sources accessible, including State and municipal and sanitary authorities throughout the United States, weekly reports of the sanitary condition of ports and places within the United States, and shall prepare, publish, and transmit to collectors of customs and to State and municipal health officers and other sanitarians weekly abstracts of the consular sanitary reports and other pertinent information received by him; and shall also, as far as he may be able, by means of the voluntary co-operation of State and municipal authorities, of public associations, and private persons, procure information relating to the climatic and other conditions affecting the public health, and shall make an annual report of his operations to Congress, with such recommendations as he may deem important to the public interests.

SEC. 5.—That the Secretary of the Treasury shall from time to time issue to the consular officers of the

United States and to the medical officers serving at any foreign port, and otherwise make publicly known, the rules and regulations made by him, to be used and complied with by vessels in foreign ports, for securing the best sanitary condition of such vessels, their cargoes, passengers, and crew, before their departure for any port in the United States, and in the course of the voyage; and all such other rules and regulations as shall be observed in the inspection of the same on the arrival thereof at any quarantine station at the port of destination, and for the disinfection and isolation of the same, and the treatment of cargo and persons on board, so as to prevent the introduction of cholera, yellow fever, or other contagious or infectious disease; and it shall not be lawful for any vessel to enter said port to discharge its cargo, or land its passengers, except upon a certificate of the health officer at such quarantine station certifying that said rules and regulations have in all respects been observed and complied with, as well on his part as on the part of the said vessel and its master, in respect to the same and to its cargo, passengers, and crew; and the master of every such vessel shall produce and deliver to the collector of customs at said port of entry, together with the other papers of the vessel, the said bills of health required to be obtained at the port of departure and the certificate herein required to be obtained from the health officer at the port of entry; and that the bills of health herein prescribed shall be considered as part of the ship's papers, and when duly certified to by the proper consular or other officer of the United States, over his official signature and seal, shall be accepted as evidence of the statements therein contained in any court of the United States.

SEC. 6.—That on the arrival of an infected vessel at any port not provided with proper facilities for treatment of the same, the Secretary of the Treasury may remand said vessel, at its own expense, to the nearest national or other quarantine station where accommodations and appliances are provided for the necessary disinfection and treatment of the vessel, passengers, and cargo; and after treatment of any infected vessel at a national quarantine station, and after certificate shall have been given by the United States quarantine officer at said station that the vessel, cargo, and passengers are each and all free from infectious disease, or danger of conveying the same, said vessel shall be admitted to entry to any port of the United States named within the certificate. But at any ports where sufficient quarantine provision has been made by State or local authorities the Secretary of the Treasury may direct vessels bound for said ports to undergo quarantine at said State or local station.

SEC. 7.—That whenever it shall be shown to the satisfaction of the President that by reason of the existence of cholera or other infectious or contagious diseases in a foreign country there is serious danger of the introduction of the same into the United States, and that notwithstanding the quarantine defense this danger is so increased by the introduction of persons or property from such country that a suspension of the right to introduce the same is demanded in the interest of the public health, the President shall have power to prohibit, in whole or in part, the introduction of persons and property from such countries or places as he shall designate, and for such period of time as he may deem necessary.

SEC. 8.—That whenever the proper authorities of a State shall surrender to the United States the use of the buildings and disinfecting apparatus at a State quarantine station, the Secretary of the Treasury shall be authorized to receive them and to pay a reasonable compensation to the State for their use.

SEC. 9.—That the act entitled "An Act to prevent the introduction of infectious and contagious diseases into the United States, and to establish a national board of health," approved March 3, 1879, be and the same is hereby repealed; and the Secretary of the Treasury is directed to obtain possession of any property, furniture, books, papers, or records belonging to



the United States, which are not in the possession of an officer of the Treasury Department which were formerly in the use of the National Board of Health or any officer or employee thereof.

**Common Carriers.**—On Dec. 15, 1892, the House of Representatives passed a bill "relating to contracts of common carriers and to certain obligations, duties, and rights in connection with the carriage of property." It was amended and passed the Senate Feb. 4, 1893, as follows:

SECTION 1.—That it shall not be lawful for the manager, agent, master, or owner of any vessel transporting merchandise or property from or between ports of the United States and foreign ports to insert in any bill of lading or shipping document any clause, covenant, or agreement whereby it, he, or they shall be relieved from liability for loss or damage arising from negligence, fault, or failure in proper loading, stowage, custody, care, or proper delivery of any and all lawful merchandise or property committed to its or their charge. Any and all words or clauses of such import inserted in bills of lading or shipping receipts shall be null and void and of no effect.

SEC. 2.—That it shall not be lawful for any vessel transporting merchandise or property from or between ports of the United States of America and foreign ports, her owner, master, agent, or manager, to insert in any bill of lading or shipping document any covenant or agreement whereby the obligations of the owner or owners of said vessel to exercise due diligence to properly equip, man, provision, and outfit said vessel, and to make said vessel seaworthy and capable of performing her intended voyage, or whereby the obligations of the master, officers, agents, or servants to carefully handle and stow her cargo and to care for and properly deliver same shall in any wise be lessened, weakened, or avoided.

SEC. 3.—That if the owner of any vessel transporting merchandise or property to or from any port in the United States of America shall exercise due diligence to make the said vessel in all respects seaworthy and properly manned, equipped, and supplied, neither the vessel, her owner or owners, charterers, agent, or master shall become or be held responsible for damage or loss resulting from faults or errors in navigation or in the management of said vessel; nor shall the vessel, her owner or owners, agent, or master be held liable for losses arising from dangers of the sea or other navigable waters, acts of God, or public enemies, or the inherent defect, quality, or vice of the thing carried, or from insufficiency of packing, or seizure under legal process, or for loss resulting from any act or omission of the shipper or owner of the goods, his agent or representative, or from saving or attempting to save life or property at sea, or from any deviation in rendering such service.

SEC. 4.—That it shall be the duty of the owner or owners, master, or agent of any vessel transporting merchandise or property from or between ports of the United States and foreign ports to issue to shippers of any lawful merchandise a bill of lading, or shipping documents, stating, among other things, the marks necessary for identification, number of packages, or quantity, stating whether it be carrier's or shipper's weight, and apparent order or condition of such merchandise or property delivered to and received by the owner, master, or agent of the vessel for transportation, and such document shall be prima facie evidence of the receipt of the merchandise therein described.

SEC. 5.—That for a violation of any of the provisions of this act the agent, owner, or master of the vessel guilty of such violation, and who refuses to issue on demand the bill of lading herein provided for, shall be liable to a fine not exceeding \$2,000. The amount of the fine and costs for such violation shall be a lien upon the vessel, whose agent, owner, or master is guilty of such violation, and such vessel may be libeled therefor in any district court of the United States, within whose jurisdiction the vessel may be found.

One half of such penalty shall go to the party injured by such violation, and the remainder to the Government of the United States.

SEC. 6.—That this act shall not be held to modify or repeal sections 4281, 4282, and 4283 of the Revised Statutes of the United States, or any other statute defining the liability of vessels, their owners, or representatives.

SEC. 7.—Sections 1 and 4 of this act shall not apply to the transportation of live animals.

SEC. 8.—That this act shall take effect from and after the 1st day of July, 1893.

The House concurred in the Senate amendments and the President approved, Feb. 13.

**Miscellaneous.**—Much of the attention of Congress was occupied by the Antioption bill, a measure defining "options" and futures, and imposing special taxes on dealers therein, and requiring such dealers and persons engaged in selling certain products to obtain license. The measure originated in the House of Representatives, and was passed by that body at the first session of Congress. It was amended and passed the Senate, but fell by the way, as the House refused to suspend the rules and concur.

The Senate ratified the French extradition treaty, Feb. 2, 1893, and the Russian extradition treaty, Feb. 23. The treaty for the annexation of Hawaii was not acted upon. An investigation of the expenditures of the Panama Canal Company in this country was ordered, but the committee intrusted with the matter ceased its inquiries at the most interesting point.

Bills were passed for payment of the claims of New York Indians; to facilitate the enforcement of the immigration and contract-labor laws; for a system of roads in the District of Columbia; to extend to the Northern Pacific Ocean the provisions of statutes for the protection of fur seals and other fur-bearing animals; to ratify and confirm an agreement with the Cherokee nation; to create the California Débris Commission and regulate hydraulic mining; providing for lighthouses and other aids to navigation; providing for fortifications.

**Appropriations.**—The appropriations made by the Fifty-second Congress at both sessions were as follow:

TITLE OF BILL.	First session, 1893.	Second session, 1894.
Agricultural.....	\$3,282,995 50	\$3,323,300 00
Army.....	24,308,499 82	24,225,639 78
Diplomatic and consular ....	1,614,045 00	1,558,045 00
District of Columbia.....	5,317,973 27	5,413,223 91
Fortification.....	2,734,276 00	2,210,055 00
Indian.....	7,664,047 84	7,854,646 63
Legislative, etc.....	21,900,132 97	21,892,402 32
Military Academy.....	428,917 33	432,556 12
Navy.....	23,543,335 00	22,104,331 38
Pension, including deficiencies	154,411,682 00	180,680,737 35
Post-office.....	80,331,276 73	83,807,700 00
River and harbor.....	21,154,218 00	.....
Sundry civil.....	27,665,076 93	41,701,311 15
Deficiencies, except for pen- sions.....	8,230,859 50	8,049,538 45
Total.....	\$382,527,385 89	\$403,253,587 09
Miscellaneous.....	3,203,922 82	500,000 00
Total regular annual ap- propriations.....	\$385,736,308 71	\$403,753,587 09
Permanent annual appropri- ations.....	121,863,880 00	115,463,273 92
Total by sessions.....	\$507,600,188 71	\$519,221,861 01
Total by Congress.....	\$1,026,822,049 72	



**Fifty-third Congress.—Special Session.**  
The Fifty-third Congress met in special session Aug. 7, 1893, in obedience to the following call from the President:

EXECUTIVE MANSION, WASHINGTON, *June 30, 1893.*

Whereas, the distrust and apprehension concerning the financial situation which pervade all business circles have already caused great loss and damage to our people and threaten to cripple our merchants, stop the wheels of manufacture, bring distress and privation to our farmers, and withhold from our workmen the wage of labor; and

Whereas, the present perilous condition is largely the result of a financial policy which the executive branch of the Government finds embodied in unwise laws which must be executed until repealed by Congress;

Now, therefore, I, Grover Cleveland, President of the United States, in performance of a constitutional duty, do, by this proclamation, declare that an extraordinary occasion requires the convening of both Houses of the Congress of the United States, at the Capitol, in the city of Washington, on the seventh day of August next, at 12 o'clock, noon, to the end that the people may be relieved through legislation from present and impending danger and distress.

All those entitled to act as members of the Fifty-third Congress are required to take notice of this proclamation, and attend at the time and place above stated.

Given under my hand and the seal of the United States, at the city of Washington, on the thirtieth day of June, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and seventeenth.

GROVER CLEVELAND.

The Congress was composed as follows:

#### SENATE.

<i>Alabama.</i>	<i>Indiana.</i>
1897. James L. Pugh, D.	1897. Daniel W. Voorhees, D.
1895. John T. Morgan, D.	1899. David Turpie, D.
<i>Arkansas.</i>	<i>Iowa.</i>
1897. James K. Jones, D.	1897. William B. Allison, R.
1895. James H. Berry, D.	1895. James F. Wilson, R.
<i>California.</i>	<i>Kansas.</i>
.... George C. Perkins, R.	1897. William A. Peffer, P.
1899. Stephen W. White, D.	1895. John Martin, D.
<i>Colorado.</i>	<i>Kentucky.</i>
1897. Henry M. Teller, R.	1897. J. C. S. Blackburn, D.
1895. Edward O. Wolcott, R.	1895. William Lindsay, D.
<i>Connecticut.</i>	<i>Louisiana.</i>
1897. Orville H. Platt, R.	1897. Edward D. White, D.
1899. Joseph R. Hawley, R.	.... Donelson, Caffery, D.
<i>Delaware.</i>	<i>Maine.</i>
1899. George Gray, D.	1899. Eugene Hale, R.
1895. Anthony Higgins, R.	1895. William P. Frye, R.
<i>Florida.</i>	<i>Maryland.</i>
1897. Wilkinson Call, D.	1897. Charles H. Gibson, D.
1899. Samuel Pasco, D.	1899. Arthur P. Gorman, D.
<i>Georgia.</i>	<i>Massachusetts.</i>
1897. John B. Gordon, D.	1899. Henry C. Lodge, R.
1895. Alfred H. Colquitt, D.	1895. George F. Hoar, R.
<i>Idaho.</i>	<i>Michigan.</i>
1897. Frederick T. Dubois, R.	1899. F. B. Stockbridge, R.
1895. George L. Shoup, R.	1895. James McMillan, R.
<i>Illinois.</i>	<i>Minnesota.</i>
1897. John M. Palmer, D.	1899. Cushman K. Davis, R.
1895. Shelby M. Cullom, R.	1895. Wm. D. Washburn, R.

#### *Mississippi.*

1899. James Z. George, D.  
1895. E. C. Walthall, D.

#### *Missouri.*

1897. George G. Vest, D.  
1899. Francis M. Cockrell, D.

#### *Montana.*

.... Lee Mantle, R.  
1895. Thomas C. Power, R.

#### *Nebraska.*

1899. Wm. Vincent Allen, P.  
1895. C. F. Manderson, R.

#### *Nevada.*

1897. John P. Jones, R.  
1899. William M. Stewart, R.

#### *New Hampshire.*

1897. Jacob H. Gallinger, R.  
1895. Wm. E. Chandler, R.

#### *New Jersey.*

1899. James Smith, Jr., D.  
1895. John R. McPherson, D.

#### *New York.*

1897. David B. Hill, D.  
1899. Edward Murphy, Jr., D.

#### *North Carolina.*

1897. Zebulon B. Vance, D.  
1895. Matt W. Ransom, D.

#### *North Dakota.*

1897. H. C. Hansbrough, R.  
1899. Wm. Nathaniel Roach, D.

#### *Ohio.*

1897. Calvin S. Brice, D.  
1899. John Sherman, R.

#### *Oregon.*

1897. John H. Mitchell, R.  
1895. Joseph N. Dolph, R.

#### *Pennsylvania.*

1897. J. D. Cameron, R.  
1899. Matthew S. Quay, R.

#### *Rhode Island.*

1899. Nelson W. Aldrich, R.  
1895. Nathan F. Dixon, R.

#### *South Carolina.*

1897. John L. M. Irby, D.  
1895. Matthew C. Butler, D.

#### *South Dakota.*

1895. R. F. Pettigrew, R.  
1897. James H. Kyle, P.

#### *Tennessee.*

1899. William B. Bates, D.  
1895. Isham G. Harris, D.

#### *Texas.*

1899. Roger Q. Mills, D.  
1895. Richard Coke, D.

#### *Vermont.*

1897. Justin S. Morrill, R.  
1899. Redfield Proctor, R.

#### *Virginia.*

1899. John W. Daniel, D.  
.... E. P. Hunton, D.

#### *Washington.*

.... John B. Allen, R.  
1897. Watson C. Squire, R.

#### *West Virginia.*

1897. H. C. Hansbrough, R.  
1899. Charles J. Faulkner, D.

#### *Wisconsin.*

1897. William F. Vilas, D.  
1899. John L. Mitchell, D.

#### *Wyoming.*

1897. Joseph M. Carey, R.  
.... A. C. Beckwith, D.

After the Legislatures of Montana, Washington, and Wyoming had adjourned without electing Senators for the six years beginning March 4, 1893, Gov. Rickards, of Montana, appointed Lee Mantle, a Republican, to succeed Senator Sanders; Gov. McGraw, of Washington, appointed John B. Allen, a Republican, to succeed himself; and Gov. Osborne, of Wyoming, appointed A. C. Beckwith, a Democrat, to succeed Senator Warren.

On Aug. 23, 1893, the Senate decided that when a State legislature has the opportunity to elect and fails to elect, an appointment by a governor is void. So there were three vacancies in the Senate.

#### HOUSE OF REPRESENTATIVES.

##### *Alabama.*

Richard H. Clarke, D.  
Jesse F. Stallings, D.  
William C. Oates, D.  
Gaston A. Robbins, D.  
James E. Cobb, D.

John H. Bankhead, D.  
William H. Denson, D.  
Joseph Wheeler, D.  
Louis W. Turpin, D.

##### *Arkansas.*

P. D. McCulloch, Jr., D.  
Clifton R. Breckinridge, D.  
Thomas C. McKee, D.

William L. Terry, D.  
Hugh A. Dinsmore, D.  
Robert Neill, D.

##### *California.*

Thomas J. Geary, D.  
Anthony Caminetti, D.  
Samuel G. Hilborn, R.  
James G. Maguire, D.

Eugene F. Loud, R.  
Marion Cannon, D.  
William W. Bowers, R.

##### *Colorado.*

Lafe Pence, P.

John C. Bell, P.

*Connecticut.*

Lewis Sperry, D.  
James F. Pigott, D.

Charles A. Russell, R.  
Robert E. DeForest, D.

*Delaware.*

John W. Causey, D.

*Florida.*

Stephen R. Mallory, D.

C. M. Cooper, D.

*Georgia.*

Rufus E. Lester, D.  
Benjamin E. Russell, D.  
Charles F. Crisp, D.  
Charles L. Moses, D.  
Leonidas F. Livingston, D.  
Thomas B. Cabaniss, D.

John W. Maddox, D.  
Thomas G. Lawson, D.  
F. C. Tate, D.  
J. C. C. Black, D.  
Henry G. Turner, D.

*Idaho.*

Willis Sweet, R.

*Illinois.*

John C. Black, D.  
Andrew J. Hunter, D.  
J. Frank Aldrich, R.  
Lawrence E. McGann, D.  
Allen C. Durborow, Jr., D.  
Julius Goldzier, D.  
Albert J. Hopkins, R.  
Robert R. Hitt, R.  
Thomas J. Henderson, R.  
Robert A. Childs, R.  
Hamilton K. Wheeler, R.

Phillip S. Post, R.  
Benjamin F. Marsh, R.  
John J. McDannold, D.  
William M. Springer, D.  
Benjamin F. Funk, R.  
Joseph G. Cannon, R.  
George W. Fithian, D.  
Edward Lane, D.  
William S. Forman, D.  
James R. Williams, D.  
George W. Smith, R.

*Indiana.*

A. H. Taylor, D.  
John L. Bretz, D.  
Jason B. Brown, D.  
William S. Holman, D.  
George W. Cooper, D.  
Henry U. Johnson, R.  
William D. Bynum, D.

Elijah V. Brookshire, D.  
Dan Waugh, R.  
Thomas Hammond, D.  
Augustus N. Martin, D.  
W. F. McNaghy, D.  
Charles G. Conn, D.

*Iowa.*

John H. Gear, R.  
Walter I. Hayes, D.  
David B. Henderson, R.  
Thomas Updegraff, R.  
Robert G. Cousins, R.  
John F. Lacey, R.

John A. T. Hull, R.  
W. P. Hepburn, R.  
A. L. Hager, R.  
Jonathan P. Dolliver, R.  
George D. Perkins, R.

*Kansas.*

W. A. Harris, D.  
Case Broderick, R.  
Edward H. Funston, R.  
T. J. Hudson, D.

Charles Curtis, R.  
John Davis, P.  
William Baker, P.  
Jeremiah Simpson, P.

*Kentucky.*

William J. Stone, D.  
William T. Ellis, D.  
Isaac H. Goodnight, D.  
Alexander B. Montgomery, D.  
Asher G. Caruth, D.  
Albert S. Berry, D.

Wm. C. P. Breckinridge, D.  
James B. McCreary, D.  
Thomas H. Paynter, D.  
Marcus C. Lisle, D.  
Silas Adams, R.

*Louisiana.*

Adolph Meyer, D.  
R. C. Davey, D.  
Andrew Price, D.

Newton C. Blanchard, D.  
Charles J. Boatner, D.  
Samuel M. Robertson, D.

*Maine.*

Thomas B. Reed, R.  
Nelson Dingley, Jr., R.

Seth L. Milliken, R.  
Charles A. Boutelle, R.

*Maryland.*

Robert F. Brattan, D.  
J. F. C. Talbott, D.  
Harry Welles Rusk, D.

Isidor Rayner, D.  
Barnes Compton, D.  
William McM. McKaig, D.

*Massachusetts.*

Ashley B. Wright, R.  
Frederick H. Gillett, R.  
Joseph H. Walker, R.  
Lewis D. Apsley, R.  
Moses T. Stevens, D.  
William Cogswell, R.  
William Everett, D.

Samuel W. McCall, R.  
Joseph H. O'Neil, D.  
Michael J. McEtrick, D.  
William F. Draper, R.  
Elijah A. Morse, R.  
Charles S. Randall, R.

*Michigan.*

J. Logan Chipman, D.  
James S. Gorman, D.  
Julius C. Burrows, R.  
Henry F. Thomas, R.  
G. F. Richardson, D.  
David D. Aitkin, R.

Justin R. Whiting, D.  
William S. Linton, R.  
John W. Moon, R.  
Thomas A. E. Weadock, D.  
John Avery, R.  
Samuel M. Stephenson, R.

*Minnesota.*

James A. Tawney, R.  
James T. McCleary, R.  
Osee M. Hall, D.  
Andrew R. Kiefer, R.

Loren Fletcher, R.  
M. R. Baldwin, D.  
Haldor E. Boen, P.

*Mississippi.*

John M. Allen, D.  
John C. Kyle, D.  
Thomas C. Catchings, D.  
Hernando D. Money, D.

John S. Williams, D.  
Thomas R. Stockdale, D.  
Charles E. Hooker, D.

*Missouri.*

William H. Hatch, D.  
Uriel S. Hall, D.  
Alexander M. Dockery, D.  
Daniel D. Burnes, D.  
John C. Tarsney, D.  
David A. DeArmond, D.  
John T. Heard, D.  
Richard P. Bland, D.

Champ Clark, D.  
Richard Bartholdt, R.  
Charles F. Joy, R.  
Seth W. Cobb, D.  
Robert W. Fyan, D.  
Marshall Arnold, D.  
Charles H. Morgan, D.

*Montana.*

Charles S. Hartman, R.

*Nebraska.*

William J. Bryan, D.  
David H. Mercer, R.  
George D. Meikeljohn, R.

Eugene J. Hainer, R.  
W. A. McKeighan, P.  
Omer M. Kem, P.

*Nevada.*

Francis G. Newlands, P.

*New Hampshire.*

Henry W. Blair, R.

Henry M. Baker, R.

*New Jersey.*

Harry C. Loudenslager, R.  
John G. Gardner, R.  
Jacob A. Geissenhainer, D.  
Johnston Cornish, D.

Cornelius A. Cadmus, D.  
Thomas Dunn English, D.  
George B. Fielder, D.  
John T. Dunn, D.

*New York.*

James W. Covert, D.  
John M. Clancy, D.  
Joseph C. Hendrix, D.  
William J. Coombs, D.  
John H. Graham, D.  
Thomas F. Magner, D.  
Franklin Bartlett, D.  
Edward J. Dunphy, D.  
Timothy J. Campbell, D.  
Daniel E. Sickles, D.  
Amos J. Cummings, D.  
W. Bourke Cockran, D.  
John DeWitt Warner, D.  
John R. Fellows, D.  
Ashbel P. Fitch, D.  
William Ryan, D.  
Francis Marvin, R.

Jacob Le Fever, R.  
Charles D. Haines, D.  
Charles Tracey, D.  
Simon J. Schermerhorn, D.  
Newton M. Curtis, R.  
John M. Wever, R.  
Charles A. Chickering, R.  
James S. Sherman, R.  
George W. Ray, R.  
James J. Belden, R.  
Serenio E. Payne, R.  
Charles W. Gillet, R.  
James W. Wadsworth, R.  
John Van Voorhis, R.  
Daniel N. Lockwood, D.  
Charles Daniels, R.  
Warren B. Hooker, R.

*North Carolina.*

William A. B. Branch, D.  
F. A. Woodard, D.  
Benjamin F. Grady, D.  
Benjamin H. Bunn, D.  
Thomas Settle, R.

Sydenham B. Alexander, D.  
John S. Henderson, D.  
William H. Bower, D.  
William T. Crawford, D.

*North Dakota.*

Martin N. Johnson, R.

*Ohio.*

Bellamy Storer, R.  
John A. Caldwell, R.  
George W. Houk, D.  
Fernando C. Layton, D.  
Dennis D. Donovan, D.  
G. W. Hulick, R.  
George W. Wilson, R.  
Luther M. Strong, R.  
Byron F. Ritchie, D.  
\*William H. Enochs, R.  
Charles H. Grosvenor, R.

Joseph H. Outhwaite, D.  
Darius D. Hare, D.  
Michael D. Harter, D.  
H. C. Van Voorhis, R.  
Albert J. Pearson, D.  
J. A. D. Richards, D.  
George P. Ickit, D.  
S. A. Northway, R.  
William J. White, R.  
Tom L. Johnson, D.

*Oregon.*

Binger Hermann, R.

W. R. Ellis, R.

\* Died before the session began.



*Pennsylvania.*

Alexander McDowell, R.	Ephraim M. Woomer, R.
William Lilley, R.	Myron B. Wright, R.
Henry H. Bingham, R.	Albert C. Hopkins, R.
Charles O'Neill, R.	Simon P. Wolverson, D.
William McAleer, D.	Thaddeus M. Mahon, R.
John E. Keyburn, R.	Frank E. Beltzhoover, D.
Alfred C. Harner, R.	Josiah D. Hicks, R.
John B. Robinson, R.	Daniel B. Heiner, R.
Irving P. Wanger, R.	John Dalzell, R.
Howard Mutchler, D.	William A. Stone, R.
Constantine J. Erdman, D.	William A. Sipe, D.
Mariott Brosius, R.	Thomas W. Phillips, R.
Joseph A. Scranton, R.	Joseph C. Sibley, D.
William H. Hines, D.	Charles W. Stone, R.
James B. Reilly, D.	George F. Kribbs, D.

*Rhode Island.*

Oscar Lapham, D.	Charles H. Page, D.
------------------	---------------------

*South Carolina.*

William H. Brawley, D.	Thomas J. Strait, D.
William J. Talbert, D.	John L. McLaurin, D.
Asbury C. Latimer, D.	George W. Murray, R.
George W. Shell, D.	

*South Dakota.*

John A. Piekler, R.	William V. Lucas, R.
---------------------	----------------------

*Tennessee.*

Alfred A. Taylor, R.	Joseph E. Washington, D.
John C. Houk, R.	Nicholas N. Cox, D.
Henry C. Snodgrass, D.	Benjamin A. Enlee, D.
Benton McMillin, D.	J. C. McDearmon, D.
James D. Richardson, D.	Josiah Patterson, D.

*Texas.*

J. C. Hutcheson, D.	C. K. Bell, D.
S. B. Cooper, D.	Joseph D. Sayers, D.
C. Buckley Kilgore, D.	Walter Gresham, D.
David B. Culberson, D.	William H. Crain, D.
Joseph W. Bailey, D.	Thomas M. Paschall, D.
Jo Abbott, D.	J. V. Cockrell, D.
George C. Pendleton, D.	

*Vermont.*

H. Henry Powers, R.	William W. Grout, R.
---------------------	----------------------

*Virginia.*

William A. Jones, D.	Paul C. Edmunds, D.
D. Gardiner Tyler, D.	Charles T. O'Ferrall, D.
George D. Wise, D.	Elisha E. Meredith, D.
James F. Epes, D.	James W. Marshall, D.
Claude A. Swanson, D.	Henry St. George Tucker, D.

*Washington.*

John L. Wilson, R.	William H. Doolittle, R.
--------------------	--------------------------

*West Virginia.*

John O. Pendleton, D.	John D. Alderson, D.
William L. Wilson, D.	James Capehart, D.

*Wisconsin.*

H. A. Cooper, R.	Owen A. Wells, D.
Charles Barwig, D.	George B. Shaw, R.
Joseph W. Babcock, R.	Lymann E. Barnes, D.
Peter J. Somers, D.	Thomas Lyneh, D.
George H. Brickner, D.	Nils P. Haugen, R.

*Wyoming.*

Henry A. Coffeen, D.
----------------------

## DELEGATES FROM TERRITORIES.

*Arizona*—Marcus A. Smith, D.  
*New Mexico*—Antonio Joseph, D.  
*Oklahoma*—Dennis T. Flynn, R.  
*Utah*—Joseph L. Rawlins, D.

Charles F. Crisp, of Georgia, was chosen Speaker of the House; James Kerr, clerk; H. W. Snow, sergeant-at-arms; A. B. Hurt, doorkeeper; Lycurgus Dalton, postmaster; and Samuel W. Haddaway, chaplain.

On Tuesday, Aug. 8, the President sent to the Congress the following message:

*To the Congress of the United States:*

The existence of an alarming and extraordinary business situation, involving the welfare and prosperity of all our people, has constrained me to call together in extra session the people's representatives in Congress, to the end that through a wise and patriotic exercise of the legislative duty with which they are solely charged, present evils may be mitigated and dangers threatening the future may be averted.

Our unfortunate financial plight is not the result of untoward events nor of conditions related to our national resources; nor is it traceable to any afflictions which frequently check national growth and prosperity. With plentiful crops, with abundant promise of remunerative production and manufacture, with unusual invitation to safe investment, and with satisfactory assurance to business enterprise, suddenly financial fear and distrust have sprung up on every side. Numerous moneyed institutions have suspended because abundant assets were not immediately available to meet the demands of the frightened depositors. Surviving corporations and individuals are content to keep in hand the money they are usually anxious to loan, and those engaged in legitimate business are surprised to find that the securities they offer for loans, though heretofore satisfactory, are no longer accepted.

Values supposed to be fixed are fast becoming conjectural, and loss and failure have involved every branch of business.

I believe these things are principally chargeable to congressional legislation touching the purchase and coinage of silver by the General Government.

This legislation is embodied in a statute passed on the 14th day of July, 1890, which was the culmination of much agitation on the subject involved, and which may be considered a truce, after a long struggle between the advocates of free silver coinage and those intending to be more conservative.

Undoubtedly the monthly purchases by the Government of 4,500,000 ounces of silver enforced under that statute were regarded by those interested in silver production as a certain guarantee of its increase in price.

The result, however, has been entirely different, for immediately following a spasmodic and slight rise, the price of silver began to fall after the passage of the act, and has since reached the lowest point ever known. This disappointing result has led to renewed and persistent effort in the direction of free silver coinage.

Meanwhile, not only are the evil effects of the operation of the present law constantly accumulating, but the result to which its execution must inevitably lead is becoming palpable to all who give the least heed to financial subjects.

This law provides that in payment of the 4,500,000 ounces of silver bullion which the Secretary of the Treasury is commanded to purchase monthly, there shall be issued Treasury notes redeemable on demand in gold or silver coin, at the discretion of the Secretary of the Treasury, and that said notes may be reissued. It is, however, declared in the act to be "the established policy of the United States to maintain the two metals on a parity with each other upon the present legal ratio or upon such ratio as may be provided by law." This declaration so controls the action of the Secretary of the Treasury as to prevent his exercising the discretion nominally vested in him, if by such action the parity between gold and silver may be disturbed. Manifestly, a refusal by the Secretary to pay these Treasury notes in gold, if demanded, would necessarily result in their discredit and depreciation as obligations payable only in silver, and would destroy the parity between the two metals by establishing a discrimination in favor of gold.

Up to the 15th day of July, 1893, these notes had been issued in payment of silver bullion purchased to the amount of more than \$147,000,000. While all but a very small quantity of this bullion remains uncoined and without usefulness in the Treasury, many

of the notes given in its purchase have been paid in gold. This is illustrated by the statement that between the 1st day of May, 1892, and the 15th day of July, 1893, the notes of this kind issued in payment for silver bullion amounted to a little more than \$54,000,000, and that during the same period about \$49,000,000 were paid by the Treasury in gold for the redemption of such notes.

The policy necessarily adopted of paying these notes in gold has not spared the gold reserve of \$100,000,000, long ago set aside by the Government for the redemption of other notes, for this fund has already been subjected to the payment of new obligations amounting to about \$150,000,000 on account of silver purchases, and has, as a consequence, for the first time since its creation, been encroached upon.

We have thus made the depletion of our gold easy, and have tempted other and more appreciative nations to add it to their stock. That the opportunity we have offered has not been neglected is shown by the large amounts of gold which have been recently drawn from our Treasury and exported to increase the financial strength of foreign nations. The excess of exports of gold over imports for the year ending June 30, 1893, amounted to more than \$87,500,000.

Between the 1st day of July, 1890, and the 15th day of July, 1893, the gold coin and bullion in our Treasury decreased more than \$132,000,000, while during the same period the silver coin and bullion in the Treasury increased more than \$147,000,000. Unless Government bonds are to be constantly issued and sold to replenish our exhausted gold, only to be again exhausted, it is apparent that the operation of the silver purchase law now in force leads in the direction of the entire substitution of silver for the gold in the Government Treasury, and that this must be followed by the payment of all Government obligations in depreciated silver.

At this stage gold and silver must part company, and the Government must fail in its established policy to maintain the two metals on a parity with each other. Given over to the exclusive use of a currency greatly depreciated according to the standard of the commercial world, we could no longer claim a place among nations of the first class, nor could our Government claim a performance of its obligation, so far as such an obligation has been imposed upon it, to provide for the use of the people the best and safest money.

If, as many of its friends claim, silver ought to occupy a larger place in our currency and the currency of the world through general international co-operation and agreement, it is obvious that the United States will not be in a position to gain a hearing in favor of such an arrangement so long as we are willing to continue our attempt to accomplish the result single-handed.

The knowledge in business circles among our own people that our Government can not make its fiat equivalent to intrinsic value, nor keep inferior money on a parity with superior money by its own independent efforts, has resulted in such a lack of confidence at home in the stability of currency values that capital refuses its aid to new enterprises, while millions are actually withdrawn from the channels of trade and commerce to become idle and unproductive in the hands of timid owners. Foreign investors, equally alert, not only decline to purchase American securities, but make haste to sacrifice those which they already have. It does not meet the situation to say that the apprehension in regard to the future of our finances is groundless and there is no room for lack of confidence in the purposes or power of the Government in the premises. The very existence of this apprehension and lack of confidence, however caused, is a menace which ought not for a moment to be disregarded. Possibly if the undertaking we have in hand were the maintenance of a specific known quantity of silver as the parity with gold, our ability to do so might be estimated and gauged, and perhaps, in view

of our unparalleled growth and resources, might be favorably passed upon; but when our avowed endeavor is to maintain such parity in regard to an amount of silver increasing at the rate of \$50,000,000 yearly, with no fixed termination to such increase, it can hardly be said that a problem is presented whose solution is free from doubt.

The people of the United States are entitled to a sound and stable currency, and to money recognized as such on every exchange and in every market of the world. This Government has no right to injure them by financial experiments opposed to the policy and practice of other civilized states, nor is it justified in permitting an exaggerated and unreasonable reliance on our national strength and ability to jeopardize the soundness of the people's money.

This matter rises above the plane of party politics. It vitally concerns every business and calling and enters every household in the land. There is one important aspect of the subject which especially should never be overlooked. At times like the present, when the evils of unsound finance threaten us, the speculator may anticipate a harvest gathered from the misfortune of others; the capitalist may protect himself by hoarding, or may even find profit in the fluctuation of values; but the wage earner, the first to be injured by a depreciated currency and the last to receive the benefit of its correction, is practically defenseless. He relies for work upon the ventures of confident and contented capital. This failing him, his condition is without alleviation, for he can neither prey on the misfortunes of others nor hoard his labor. One of the greatest statesmen our country has known, speaking more than fifty years ago, when a derangement of the currency had caused commercial distress, said: "The very man of all others who has the deepest interest in a sound currency and who suffers most by mischievous legislation in money matters is the man who earns his daily bread by his daily toil."

These words are as pertinent now as on the day they were uttered, and ought to impressively remind us that a failure in the discharge of our duty at this time must especially injure those of our countrymen who labor, and who, because of their number and condition, are entitled to the most watchful care of their Government. It is of the utmost importance that such relief as Congress can afford in the existing situation be afforded at once. The maxim, "He gives twice who gives quickly," is directly applicable. It may be true that the embarrassments from which the business of the country is suffering arise as much from evils apprehended as from those actually existing. We may hope, too, that calm counsels will prevail, and that neither the capitalists nor the wage earners will give way to unreasonable panic, and sacrifice their property or their interests under the influence of exaggerated fears. Nevertheless, every day's delay in removing one of the plain and principal causes of the present state of things enlarges the mischief already done and increases the responsibility of the Government for its existence. Whatever else the people have a right to expect from Congress, they may certainly demand that legislation condemned by the ordeal of three years' disastrous experience shall be removed from the statute books as soon as their representatives can legitimately deal with it.

It was my purpose to summon Congress in special session early in the coming September, that we might enter promptly upon the work of tariff reform, which the true interests of the country clearly demand, which so large a majority of the people, as shown by their suffrages, desire and expect, and to the accomplishment of which every effort of the present Administration is pledged. But while tariff reform has lost nothing of its immediate and permanent importance, and must in the near future engage the attention of Congress, it has seemed to me that the financial condition of the country should at once, and before other subjects, be considered by your honorable body.

I earnestly recommend the prompt repeal of the provisions of the act passed July 14, 1890, authorizing the



purchase of silver bullion, and that other legislative action may be taken to put beyond all doubt or mistake the intention and the ability of the Government to fulfill its pecuniary obligations in money universally recognized by all civilized countries.

GROVER CLEVELAND.

EXECUTIVE MANSION, Aug. 7, 1893.

**The Sherman Act.**—Congress got to work on the task before it—the settlement of the silver question—on Friday, Aug. 11, 1893, when Mr. Wilson, of West Virginia, offered in the House of Representatives the following bill:

An Act to repeal a part of an act, approved July 14, 1890, entitled "An Act directing the purchase of silver bullion and the issue of Treasury notes thereon, and for other purposes."

*Be it enacted, etc.,* That so much of the act approved July 14, 1890, entitled "An Act directing the purchase of silver bullion and issue of Treasury notes thereon, and for other purposes," as directs the Secretary of the Treasury to purchase from time to time silver bullion to the aggregate amount of 4,500,000 ounces, or so much thereof as may be offered in each month, at the market price thereof, not exceeding one dollar for 371<sup>25</sup> grains of pure silver, and to issue in payment for such purchases Treasury notes of the United States, be, and the same is hereby, repealed; but this repeal shall not impair or in any manner affect the legal-tender quality of the standard silver dollars heretofore coined; and the faith and credit of the United States are hereby pledged to maintain the parity of the standard gold and silver coins of the United States at the present legal ratio, or such other ratio as may be established by law.

Mr. Bland, of Missouri, pursuant to an agreement between the advocates and the opponents of this measure, offered the following resolution providing for the method in which the House was to consider the bill:

*Ordered by the House,* That H. R. No. 1 shall be taken up for immediate consideration and considered for fourteen days. During such consideration night sessions may be held, for debate only, at the request of either side. The daily sessions to commence at 11 A. M. and continue until 5 P. M. Eleven days of the debate on the bill to be given to general debate under the rules of the last House regulating general debate, the time to be equally divided between the two sides as the Speaker may determine. The last three days of debate may be devoted to the consideration of the bill and the amendments herein provided for, under the usual five-minute rule of the House, as in Committee of the Whole House. General leave to print is hereby granted.

Order of amendments: The vote shall be taken first on an amendment providing for the free coinage of silver at the present ratio. If that fail, then a separate vote to be had on a similar amendment proposing a ratio of 17 to 1; if that fails, on one proposing a ratio of 18 to 1; if that fails, on one proposing a ratio of 19 to 1; if that fails, on one proposing a ratio of 20 to 1. If the above amendments fail, it shall be in order to offer an amendment reviving the act of the 28th of February, 1878, restoring the standard silver dollar, commonly known as the Bland-Allison act; the vote then to be taken on the engrossment and third reading of the bill as amended, or on the bill itself if all amendments shall have been voted down, and on the final passage of the bill without other intervening motions.

On this resolution the previous question was called for, and it was adopted by a vote of 218 yeas to 100 nays; not voting, 36.

Mr. Bland then offered the following substitute:

A bill (H. R. 2) for the free coinage of silver, and for other purposes.

SECTION 1. *Be it enacted, etc.,* That from and after the passage of this act all holders of silver bullion to the amount of \$100 or more, of standard weight and fineness, shall be entitled to have the same coined at the mint of the United States into silver dollars of the weight and fineness provided for in the second section of this act.

SEC. 2. That the silver dollar provided for in this act shall consist of 412<sup>1</sup>/<sub>2</sub> grains of standard silver. Said dollars to be a legal tender for all debts, dues, and demands, both public and private.

SEC. 3. That the holder of the silver dollars herein provided for shall be entitled to deposit the same and to receive silver certificates in the manner now provided by law for the standard silver dollars.

SEC. 4. So much of the act of July 14, 1890, entitled "An Act directing the purchase of silver bullion and the issue of Treasury notes thereon, and for other purposes," as requires the monthly purchase of 4,500,000 ounces of silver bullion, be, and the same is hereby, repealed.

Mr. Rayner, of Maryland, began the discussion by a speech in favor of the measure. He said:

"Now, with great regard and due respect to the views of those who differ from me, I desire to state my own position, and my own position alone, very frankly upon this subject.

I am in favor of an unqualified repeal of the purchasing clause of the Sherman act, without any conditions or provisos whatever. I am not in favor of purchasing another ounce of silver, or of coining another dollar of it, either at the present ratio or at any other ratio that we can practically determine upon. Now, in saying this, I desire to add that I have no hostility whatever to the use of silver upon a proper basis as circulating medium; but with all the careful consideration I have been able to devote to this subject, I am convinced beyond all doubt or question that its recognition by coinage, except upon international agreement, is a financial undertaking utterly impossible of accomplishment except at the risk of ruin and disaster.

"The proposition that I had had occasion to maintain in this House before, and that I again assert with all the emphasis I can, is, that in my humble judgment the present ratio is unjust and arbitrary, rendered so by conditions that did not exist at the time of the demonetization of silver, in 1873; and that it lies not within the power of this Government, strong as it is, to corner the silver product of the mines, to keep up the price upon a constantly declining market, to impress upon it a fictitious value, and by legislative decree compel the people to take it at a price in utter disproportion to the figure that it bears in every commercial center of the world.

"The universal experience of history, the action of every sound and solvent government, teach us that if we continue in this mad attempt to equalize that which is unequal, to appreciate a metal that is continually depreciating, to fix a standard for a coin that for over twenty years never has had a fixed value, but has fluctuated with every new acquisition from a premium in 1873 to a decline at this hour of almost one half of its coinage value.

"If this desperate system of finance, with nothing to justify it, with almost the whole intelligence of the country against it, with nothing in its track except disaster and ruin, is to pre-

vail, then, in my opinion, until the day of a better judgment shall come, we might as well retreat from the lofty position we have occupied in the confidence of mankind, and, descending, lock hands with every bankrupt government of the earth that believes in the manufacture of wealth at government mints, in cheap money, in broken contracts, and in repudiated debts, and so believing have by reason of their faith been excommunicated as heretics from the roll of civilized communities and banished from the field of honor.

"I am aware of the fact that many of my colleagues, for whose opinions I entertain the greatest respect, assert, and it has been freely charged, that the decline in the price of silver has been caused by its demonetization at the American mints, and by what is constantly called a "conspiracy" to destroy it as a circulating medium among the governments of Europe. I deny this proposition, and the statistics will not sustain it. It may be true that the free coinage of silver at the mints would tend for a time to keep up the fictitious standard of the coin, but the value of the bullion would always be controlled by the market price; it would fluctuate.

"Like every other commodity, it would be governed by the laws of supply and demand, and eventually, according to every principle of reason, according to every cardinal and accepted axiom of political economy, the coinage price would become the bullion price; the unit of value would be the market value; the money basis would be the basis of the cheaper metal; the dearer metal would leave the avenues of trade; inflation would give way to panic; private obligations would be nullified; public obligations would be discredited; and the honor of the nation would be impaired.

"Now, it is claimed that what we require in this country is a system of bimetallism, a bimetallic standard—that is to say, the free use of both gold and silver at the Government mints. But, Mr. Speaker, we will never have this until the commercial nations of the earth agree upon a proper ratio; and just so long as the Sherman act remains upon the statute book so long is an international ratio a financial impossibility. So long as we purchase silver and part with gold, so long will monetary conferences result in failure. When we cease purchasing silver and proclaim to the world that the gold dollar is the standard and the unit of American value, then we can bring our rivals to terms, because, in my opinion, there is not a sufficient amount of gold in existence to supply the demands of commerce and the necessities of the world's circulation.

"So long as the Treasury continues to act as a pawnbroker's shop for the benefit of the Colorado and Nevada mines, so long will Great Britain and Germany refuse to appreciate the collateral securities that we hold in our vaults; but when a silver certificate can be redeemed at par and a silver dollar is intrinsically worth the inscription that it bears, then we can proudly and defiantly meet them upon the field of finance without the slightest sacrifice of the stability of our currency or the slightest surrender of our honor as a nation.

"Now, let us look for one moment at our experience in attempting to keep up the price of

silver. What is the truth? Why, that silver, instead of rising, is lower to-day than it has ever been; and instead of the silver dollar being upon a parity with gold, the disparity between them is greater than it has ever been in the history of the world. Not only this, but the Government has lost nearly \$40,000,000 in its efforts to "corner" a declining market, and the Treasury to-day would not dare to risk the sale of its bullion silver.

"Not this alone, but with all our persistent efforts to force silver into circulation, the people have stubbornly refused to take it, so that to-day the overwhelming proportion of it is hidden in Government vaults. I believe that if the people appreciated the actual condition of the Treasury, and that there was not enough gold in the Treasury to redeem the smallest fraction of our outstanding notes, there would not be a single one of them that would be worth 60 cents upon the dollar. You ask me, then, what keeps up the parity between gold and silver? I think I can tell you. One thing, and one thing alone—the misplaced confidence of the people.

"When once that yields and the fuse is lighted, there will be no necessity for repealing the Sherman act: it will repeal itself immediately. Commercial ratios will take the place of legal ratios. Our equation of values will depart. The faithless union between gold and silver will be dissolved. Its spurious offspring will be excluded from the channels of legitimate circulation, and your silver certificates and Treasury notes, instead of passing by sleight of hand at par, will be exhibited as mementoes and souvenirs of the most grotesque system of finance that ever obtained among any intelligent people since the day when political economy first claimed recognition as a science, and the doctrine of fiat money was relegated to the bankrupt governments of the Orient and the revolutionary republics of Central and South America."

Aug. 12, Mr. Hendrix, of New York, said in support of the measure:

"I do not propose to take up any time in the discussion of financial theories; I am for practical, decisive action. Why, sir, the way primary principles of finance are brought up on this floor, thrashed over and over, and twisted one way and other, seems extraordinary to one who comes from the markets of the world. The experience of the world is all in one direction. The slow-moving finger of time has not changed its motion for a single second since 1798, when England made the change in her policy by subordinating silver to gold.

"Right along through the ages this process of monetary evolution has gone on. It is going on to-day, and we in this House can not stop it; we can not control it; it controls us. It is no new thing, sir, in the history of monetary evolution for the more desirable currency to dominate. When the Australian used to send stone slabs as the medium of exchange; when the Fiji Islander used red feathers for his currency; when the Roman used his oxen; when in the early ante-Roman days in Ireland female slaves were a medium of exchange—in the use of eggs, in the use of iron, in the use of tin, in the use of zinc, the process of evolution worked out the inferior and worked in the superior article. One



by one have these mediums of exchange been discarded and a higher level reached.

"The world has advanced step by step; and the preference of the world to-day, from barbaric Africa to highly civilized England or America, is, between silver and gold, for the more precious of the two metals. When you gentlemen begin to quarrel you must quarrel with the forces of evolution; do not quarrel with fifty unknown men, whose names are not in any directory, who can not be identified, but who are named *en masse* as being the men who are bringing about all this panic. Let us be perfectly fair with each other on this question. I do not assert here that the Sherman purchase law is the cause of all the woe from which this country is suffering at this moment. No intelligent man talking to intelligent men would undertake to make an assertion of that kind. The Sherman silver law was not responsible for the failure of that Federal bank in Australia in January, 1893, nor for the tumble there of fourteen great banks, nor for the rebounding force of the distress which has gone round the world since that time like a boulder bouncing down a mountain side.

"No; the wave of distress has encircled the globe. The Anglo-Saxon race has overdone the business. It has gone on conquering and populating the far-distant isles. In only one way can we fix the responsibility for the primal moving causes of this distress upon this country—that is, we have been guilty of such legislation here as turned from our shores the golden tide of foreign capital and forced it to go seeking a lodgment in bankrupt, insolvent, irresponsible, and unprosperous countries. In 1878 we began the series of errors, and we would have to-day the same condition under similar circumstances under the Bland-Allison act alone as we have under the Bland-Allison act with the Sherman act superimposed upon it. It is because we have been trying to set ourselves against the tide which is running around the world, the tide that makes toward one single standard—a tide which it is as useless for us to try to turn back as it was for old King Canute to attempt to turn back the ocean breakers from the foot of his throne when, seated on the beach, he ordered the waves to stop.

"My friends, this is, in my judgment, a golden opportunity for this country. You may legislate here as you please, but you might as well legislate against the heat of this August sun; you might as well legislate against the stars by night or the sunshine by day, as to legislate against the preference that is imbedded in the human mind, in human reason, and in human imagination. The world prefers gold. The instinct of every human being is toward it. It is the only metal that contains so much value in such a small body. It is the most portable of metals. While it shares with silver a great many of its features, and while in its onward and upward movement among the nations of the earth it has always had silver as a contestant, and they have traveled side by side, yet various processes have come into operation which have made them part company.

"How have those processes been brought about? Most naturally in the world. In a

policy which was entered upon the English statute books in 1816, and which therefore more frequently bears that date, gold was adopted as the single standard of value. Now look at the process as it has gone on from 1816 in England. What was the next step? For a great many years the Latin Union and Germany and ourselves, the large silver-using countries of India and the South American republics and Mexico, continued to use silver. For a great many years there was no considerable disturbance.

"Silver mining was not exploited to the high point of perfection that it is to-day, and the world's supply of silver was not so great as to cause unusual fluctuations. But when Bismarck thought that he could inflict a greater blow on his old enemy, France, than by the mere paying of the indemnity which he compelled them to pay to Germany for the Franco-Prussian War, he decided to make them pay it in gold, and to use that opportunity to put Germany upon a gold basis and bring together the various discordant and inharmonious systems of currency which the minor states had, and to put all squarely upon the gold basis. The consequence was that the old German thaler, which originated in that valley down in Bavaria which gives the name to our own dollar, came upon the markets of the world through the melting-pot, and they began to feel this extra and unexpected supply.

"The consequence was that silver showed weakness in the markets of the world, and in 1872, Germany having discarded silver in 1871, Norway, Sweden, Denmark, France, and Italy had to cave in at once and close their mints to the free coinage of silver. Now, what was the next step? Holland stood out until 1875, when she caved in. Russia stopped in 1876, except the coinage of some silver dollars for the Chinese trade. Belgium, Switzerland, and Greece stopped in 1878. Austria-Hungary stopped in 1879. Roumania stopped in 1890; and now the last tolling note of the funeral bell is ringing over the doom of silver as a money metal as India, the great sink for silver, shuts its mints to free coinage.

"And here this great and proud nation of people, who love their citizenship and their sovereignty as a people; this magnificent Christian nation, with its men and its women beyond any comparison in domestic spirit, in civic spirit, in social life, with any people on the face of the earth; this great nation, where over a greater area of territory than is known on the face of the earth elsewhere one language is spoken, where there is one set of laws and one system of political thought—this great arena of civilization and liberty is to be asked, alone among all the nations of the earth, to go down upon its knees worshipping, like a gibbering idiot, the idol that has been rejected by every other civilized country in God's world.

"I believe that within the next twenty years—and many gentlemen here will live to see that time—we shall see this whole free-silver craze laid out in the same graveyard along with slavery, along with repudiation, along with fiat money. The evolutionary processes of the world are against you, gentlemen. You may legislate 'until the cows come home,' but in the morn-

ing these evolutionary processes will have gained one night's work, and you will be called back here again and again, as you are called here now, to undo your work. You can not stop it. Gold is bound to be the ultimate redeemer of all the financial systems of first-class nations in this world, and no legislation short of the community of all the nations can stop it. Anybody who stands in the market places and sees the stream of prices as they go by must be forced to this conclusion. And you, gentlemen, are doing your constituents a great wrong—a wrong for which they ought never to forgive you—by continually embarrassing the financial system of this country by weak, lame, halting, sickly propositions, such as have been kicked out of the forum of civilized nations the world over."

Mr. Bland, in the course of his argument on the subject, Aug. 12, said:

"Many now born, by the time they are voters, will compose part of a nation containing perhaps 125,000,000 people, with unsurpassed energies, with a genius nowhere equaled, and with a vast territory upon which those energies and that genius can operate. But a short time ago, when you looked across the Alleghany mountains you beheld the Western wilderness roamed only by the savage and the wild beast. To-day it is teeming with its millions of civilized people, the great Mississippi valley, and when you cross the Mississippi you just begin to enter the great domain of this country of ours, for more than two thirds of it lies beyond the Father of Waters.

"And, Mr. Speaker, it is that two thirds of our territory, rich as it is in gold and silver, imbedded together in the same deposits, in the same mountains, so that you can not extract the one without extracting the other—it is that portion of our territory that would give us the money that we need, the money of the world, good money, hard money, Democratic money—a country that the civilized world must look to for its future monetary supply if it is to continue on what is called the hard-money basis. And yet we are to-day asked to do—what? To lay the blighting hand of confiscation upon the millions of people inhabiting that country, to turn them out as tramps upon the land, merely to satisfy the greed of English gold.

"Oh, my God, shall we do such a thing as that? Will you crush the people of your own land and send them abroad as tramps, will you kill and destroy your own industries, and especially the production of your precious metals that ought to be sent abroad everywhere—will you do this simply to satisfy the greed of Wall Street, the mere agent of Lombard Street in oppressing the people of Europe and of this country? It can not be done, it shall not be done! I speak for the great masses of the Mississippi valley, and those west of it, when I say you shall not do it!

"Any political party that undertakes to do it will, in God's name, be trampled, as it ought to be trampled, into the dust of condemnation now and in the future. Speaking as a Democrat, all my life battling for what I conceived to be Democracy and what I conceived to be right, I am yet an American above Democracy. I do not intend, we do not intend, that any party shall survive, if we can help it, that will lay the confiscating hand upon Americans in the interest of

England or of Europe. Now, mark it. This may be strong language, but heed it. The people mean it, and, my friends of Eastern Democracy, we bid farewell when you do that thing.

"Now, you can take your choice of sustaining America against England, American interests, and American laborers and producers, or you can go out of power. We have come to the parting of the ways. I do not pretend to speak for anybody but myself and my constituents, but I believe that I do speak for the great masses of the great Mississippi valley when I say that we will not submit to the domination of any political party, however much we may love it, that lays the sacrificing hand upon silver and will demonetize it in this country.

"For myself I will not support such a policy here or elsewhere, but will denounce it, and as a Democrat I will denounce it as un-Democratic and un-American, and will ask the people of this country to condemn it as they ought to have condemned the so-called Democrats engaged in it as the agents, the tools—I withdraw that word, but I will say as the representatives, unintentionally, of the money power and the moneyed interests, and not of the masses of the American people.

"Gentlemen, you can not hold the Democratic party together on that line. You can not pledge yourselves to bimetalism in your platform and ignore it in your legislation. We pledged ourselves in the first place to tariff reform, and the people had a right to expect us to deal with that first. In my part of the country we were told to let silver alone; that we already had a law on that subject. They said to us: 'Do not disturb that question, but take up the tariff; we are united on the tariff; let us take up the tariff and reform and reduce it; the tariff is doing us great injury, let us attend to that first.' We thought that declaration was sincere, and we thought the first thing to be taken up was the repeal of the McKinley bill.

"Well, now, my people of the Mississippi valley believed that you would let silver alone, that you would not try to demonetize it, that you would let it stand where it is; they believed the tariff would be considered first. But when you come to say that you are going to demonetize silver, let me tell you that this is a bigger question than the tariff or anything else. This battle of the standards is a world-wide question. The question is whether we are to be put upon a gold standard; and that question is one which in importance is away beyond the year by year regulation of your revenue.

"We voted the ticket in good faith; we expected that the platform would be carried out as was promised—that we would have tariff revision, and that when we came to the money question it would be regulated according to the Chicago platform; that we should have the free coinage of silver, which in itself would destroy this makeshift. But, lo and behold! we find that we were tricked, that we were deceived. And I use that language advisedly. I believe it was not intended by our Eastern Democratic friends that tariff reform should be considered first, but their main, if not their sole, object was to put their hands upon silver and demonetize it, and let tariff reform take care of itself afterward. And here we are, just in that situation. Reduce the tariff



25 per cent., yet make money in gold 25 per cent. more valuable, the tariff remains as great a burden as ever. It takes the same quantity of wheat, corn, pork, and cotton to pay it as before.

"Now, as I have already stated, the silver question, as now presented, is not the question we have had presented to us in the past. It is true that in what has been called the Bland coinage act we passed in this House a free coinage bill (I mean not in this particular body, but in the House of Representatives) by a large majority—by a two-thirds vote. But when it went to the Senate there was engrafted upon it a provision requiring the purchase of at least \$2,000,000 worth of silver each month, and not exceeding \$4,000,000 worth, and its coinage into standard silver dollars. That was a bullion purchase bill.

"But mark the distinction: It required every dollar of that bullion to be coined into money as fast as purchased; and it required the issue on that money of certificates redeemable in silver. To that extent the measure was in the line of bimetallism. The only difficulty was the limitation as to the amount. But the present law repealed that law. You do not propose now to put us back to where we were when you repealed that act, which was adopted as a compromise measure providing for the purchase of from \$2,000,000 to \$4,000,000 worth of silver per month.

"You propose to wipe out the act of repeal and to leave us—where? You propose to remit us to the demonetizing act of 1873, which in all my section of country the Democratic party on every stump has denounced as the monumental fraud of the nineteenth century. Here is a Democratic House proposing to go right back to that act. When you do so you will be guilty of a greater fraud than that act itself. I speak advisedly when I say that if the Democratic party, after all the pledges it has made in regard to silver in its platforms, national and State should take the country back to its condition under the act of 1873, you will have consummated the monumental fraud of the nineteenth century, because we never expected much from Mr. Sherman or his party; they never made many promises, as we have.

"If we now violate in the light of day every pledge that we have made, we shall be convicted of insincerity, of betraying the people who sent us here, of bowing our necks meekly to the yoke of Wall Street. If Democracy means anything, it is that those who come here from the people to represent them should carry out their pledges in good faith. It does not mean that we are to pass an act which (though some people say it will stop the panic) will put a yoke upon your constituencies for probably centuries to come."

Mr. Bryan, of Nebraska, Aug. 16, said in the course of one of the notable speeches of the session:

"I have read with care the message sent to us last week, and have considered it in the light of every reasonable construction of which it is capable. If I am able to understand its language, it points to the burial of silver, with no promise of resurrection. Its reasoning is in the direction of a single standard. It leads irresistibly to universal gold monometallism—to a realm over whose door is written, 'Abandon hope, all ye who enter here!' Before that door I stop,

appalled. Have gentlemen considered the effect of a single gold standard universally adopted? Let us not deceive ourselves with the hope that we can discard silver for gold, and that other nations will take it up and keep it as a part of the world's currency. When all the silver available for coinage could gain admission to some mints, and all the gold available for coinage would find a place for mintage, and some nation like France maintained the parity by means of bimetallism, it was of comparatively little importance whether a particular nation used silver or gold or both.

"Exchange did not fluctuate and trade could be carried on without inconvenience. But times have changed. One nation after another has closed its mints to silver, until the white metal has in European countries been made an outcast by legislation, and has shown a bullion value different from its coinage value. India, at last, guided by the misrepresentations of the metropolitan press, which proclaimed as certain what was never probable, has suspended free coinage, fearing that this country would stop the purchase of silver. If the United States, the greatest silver-producing nation, which now utilizes more than one third of the total annual product of the world, closes its mint to the coinage of silver, what assurance have we that it can retain its place as primary money in the commercial world?

"Is it not more reasonable to suppose that a further fall in the bullion value of silver will be followed by a demand for a limitation of the legal-tender qualities of the silver already in existence? That is already being urged by some. Is it not reasonable to suppose that our hostile action will lead to hostile action on the part of other nations? Every country must have money for its people, and if silver is abandoned and gold substituted it must be drawn from the world's already scanty supply. We hear much about a 'stable currency' and an 'honest dollar.' It is a significant fact that those who have spoken in favor of unconditional repeal have for the most part avoided a discussion of the effect of an appreciating standard. They take it for granted that a gold standard is not only an honest standard, but the only stable standard. I denounce that child of ignorance and avarice, the gold dollar under a universal gold standard, as the most dishonest dollar which we could employ.

"I stand upon the authority of every intelligent writer upon political economy when I assert that there is not and never has been an honest dollar. An honest dollar is a dollar absolutely stable in relation to all other things. Laughlin, in his work on Bimetallism, says:

Monometallists do not, as is often said, believe that gold remains absolutely stable in value. They hold that there is no such thing as a "standard of value" for future payments in either gold or silver, which remains absolutely invariable.

"He even suggests a multiple standard for long-time contracts. I quote his words:

As regards national debts, it is distinctly averred that neither gold nor silver forms a just measure of deferred payments, and that, if justice in long contracts is sought for, we should not seek it by the doubtful and untried expedient of international bi-

metallism, but by the clear and certain method of a multiple standard, a unit based upon the selling prices of a number of articles of general consumption. A long-time contract would thereby be paid at its maturity by the same purchasing power as was given in the beginning.

"Jevons, one of the most generally accepted of the writers in favor of a gold standard, admits the instability of a single standard, and in language very similar to that above quoted suggests the multiple standard as the most equitable if practicable. Chevalier, who wrote a book in 1858 to show the injustice of allowing a debtor to pay his debts in a cheap gold dollar, recognized the same fact, and said:

If the value of the metal declined, the creditor would suffer a loss upon the quantity he had received; if, on the contrary, it rose, the debtor would have to pay more than he calculated upon.

"I am on sound and scientific ground, therefore, when I say that a dollar approaches honesty as its purchasing power approaches stability. If I borrow a thousand dollars to-day, and next year pay the debt with a thousand dollars which will secure exactly as much of all things desirable as the one thousand which I borrowed, I have paid in honest dollars. If the money has increased or decreased in purchasing power, I have satisfied my debt with dishonest dollars. While the Government can say that a given weight of gold or silver shall constitute a dollar, and invest that dollar with legal-tender qualities, it can not fix the purchasing power of the dollar. That must depend upon the law of supply and demand, and it may be well to suggest that this Government never tried to fix the exchangeable value of a dollar until it began to limit the number of dollars coined.

"If the number of dollars increases more rapidly than the need for dollars—as it did after the gold discoveries of 1849—the exchangeable value of each dollar will fall and prices rise. If the demand for dollars increases faster than the number of dollars—as it did after 1800—the price of each dollar will rise and prices generally will fall. The relative value of the dollar may be changed by natural causes or by legislation. An increased supply—the demand remaining the same—or a decreased demand—the supply remaining the same—will reduce the exchangeable value of each dollar. Natural causes may act on both supply and demand; as, for instance, by increasing the product from the mines or increasing the amount consumed in the arts. Legislation acts directly on the demand, and thus affects the price, since the demand is one of the factors in fixing the price.

"If by legislative action the demand for silver is destroyed and the demand for gold is increased by making it the only standard, the exchangeable value of each unit of that standard, or dollar as we call it, will be increased. If the exchangeable value of the dollar is increased by legislation the debt of the debtor is increased, to his injury and to the advantage of the creditor. And let me suggest here, in reply to the gentleman from Massachusetts, who said that the money loaner was entitled to the advantages derived from improved machinery and inventive genius, that he is mistaken. The laboring man and the producer are entitled to these benefits,

and the money loaner by every law of justice ought to be content with a dollar equal in purchasing power to the dollar which he loaned; and any one desiring more than that desires a dishonest dollar, it matters not what name he may give to it. Take an illustration: John Doe, of Nebraska, has a farm worth \$2,000, and mortgages it to Richard Roe, of Massachusetts, for \$1,000. Suppose the value of the monetary unit is increased by legislation which creates a greater demand for gold. The debt is increased. If the increase amounts to 100 per cent. the Nebraska farmer finds the prices of the products have fallen one half and his land loses one half its value, unless the price is maintained by the increased population incident to a new country.

"The mortgage remains nominally the same, though the debt has actually become twice as great. Will he be deceived by the cry of 'honest dollar'? If he should loan a Nebraska neighbor a hog weighing 100 pounds and the next spring demand in return a hog weighing 200 pounds he would be called dishonest, even though he contended he was only demanding one hog—just the number he loaned. Society has become accustomed to some very nice distinctions. The poor man is called a socialist if he believes that the wealth of the rich should be divided among the poor, but the rich man is called a financier if he devises a plan by which the pittance of the poor can be converted to his use.

"The poor man who takes property by force is called a thief, but the creditor who can by legislation make a debtor pay a dollar twice as large as he borrowed is lauded as the friend of a sound currency. The man who wants the people to destroy the Government is an anarchist, but the man who wants the Government to destroy the people is a patriot.

"We have been called cranks and lunatics and idiots because we have warned our fellow-men against the inevitable and intolerable consequences which would follow the adoption of a gold standard by all the world. But who, I ask, can be silent in the presence of such impending calamities? The United States, England, France, and Germany own to-day about \$2,600,000,000 of the world's supply of gold coin, or about five sevenths of the total amount, and yet these four nations contain but a small fraction of the inhabitants of the globe. What will be the exchangeable value of a gold dollar when India's people, outnumbering alone the inhabitants of the four great nations named, reach out after their share of gold coin? What will be the final price of gold when all the nations of the Occident and Orient join in the scramble?

A distinguished advocate of the gold standard said recently, in substance: 'Wheat has now reached a point where the English can afford to buy it, and gold will soon return to relieve our financial embarrassment.' How delighted the farmer will be when he realizes what an opportunity he has to save his country! A nation in distress; banks failing; mines closed; laborers unemployed; enterprise at a standstill, and behold, the farmer, bowed with unceasing, even if unremunerative, toil, steps forth to save his country—by selling his wheat below the cost of production! And I am afraid he will even



now be censured for allowing the panic to go as far as it has before reducing his prices.

"It seems cruel that upon the growers of wheat and cotton—our staple exports—should be placed the burden of supplying us at whatever cost with the necessary gold, and yet the financier quoted has suggested the only means, except the issue of bonds, by which our stock of gold can be replenished. If it is difficult now to secure gold, what will be the condition when the demand is increased by its adoption as the world's only primary money? We would simply put gold on an auction block, with every nation as a bidder, and each ounce of the standard metal would be knocked down to the one offering the most of all other kinds of property. Every disturbance of finance in one country would communicate itself to every other, and in the misery which would follow it would be of little consolation to know that others were suffering as much as, or more than, we.

"I have only spoken of the immediate effects of the substitution of gold as the world's only money of ultimate redemption. The worst remains to be told. If, as in the resumption of specie payments in 1879, we could look forward to a time when the contraction would cease, the debtor might become a tenant upon his former estate, and the home owner assumes the rôle of the homeless with the sweet assurance that his children or his children's children might live to enjoy the blessings of a 'stable currency.' But, sir, the hapless and hopeless producer of wealth goes forth into a night illuminated by no star; he embarks upon a sea whose farther shore no mariner may find; he travels in a desert where the ever-retreating mirage makes his disappointment a thousandfold more keen. Let the world once commit its fortunes to the use of gold alone, and it must depend upon the annual increase of that metal to keep pace with the need for money.

"The director of the mint gives about \$130,000,000 as the world's production for last year. Something like one third is produced in connection with silver, and must be lost if silver mining is rendered unproductive. It is estimated that nearly two thirds of the annual product is used in the arts, and the amount so used is increasing. Where, then, is the supply to meet the increasing demands of an increasing population? Is there some new California or some undiscovered Australia yet to be explored?

"Is it not probable that the supply available for coinage will diminish rather than increase? Jacobs, in his work on the 'Precious Metals,' has calculated the appreciation of the monetary unit. He has shown that the almost imperceptible increase of 2 per cent. per year will amount to a total appreciation of 500 per cent. in a century. Or, to illustrate, that cotton at 10 cents today and wheat at 60 cents would mean cotton at 2 cents and wheat at 12 cents in one hundred years. A national, State, or municipal debt renewed from time to time would at the end of that period be six times as great as when contracted, although several times the amount would have been paid in interest."

"When one realizes the full significance of a constantly appreciating standard he can easily agree with Alison that the Dark Ages resulted

from a failure of the money supply. How can any one view with unconcern the attempt to turn back the tide of civilization by the complete debasement of one half of the world's money? When I point to the distress which, not suddenly, but gradually, is entering the habitations of our people; when I refer you to the census as conclusive evidence of the unequal distribution of wealth and of increasing tenancy among our people, of whom, in our cities, less than one fourth now own their homes; when I suggest the possibility of this condition continuing until, passed from a land of independent owners, we become a nation of landlords and tenants, you must tremble for civil liberty itself.

"Free government can not long survive when the thousands enjoy the wealth of the country and the millions share its poverty in common. Even now you hear among the rich an occasionally expressed contempt for popular government, and among the poor a protest against legislation which makes them 'toil that others may reap.' I appeal to you to restore justice and bring back prosperity while yet a peaceable solution can be secured. We mourn the lot of unhappy Ireland, whose alien owners drain it of its home-created wealth; but we may reach a condition, if present tendencies continue, when her position at this time will be an object of envy, and some poet may write of our cities as Goldsmith did of the 'Deserted Village':

While scourged by famine from a smiling land,  
The mournful peasant leads his humble band,  
And, while he sinks without one arm to save,  
The country blooms—a garden and a grave.

Mr. Bryan summed up the party pledges on the subject as follows:

"Sirs, what will be the answer of the people whom you represent, who are wedded to the 'gold and silver coinage of the Constitution,' if you vote for unconditional repeal, and return to tell them that you were commended for the readiness with which you obeyed every order, but that Congress has decreed that one half of the people's metallic money shall be destroyed?

"They demand unconditional surrender, do they? Why, sirs, we are the ones to grant terms. Standing by the pledges of all the parties in this country, backed by the history of a hundred years, sustained by the most sacred interests of humanity itself, we demand an unconditional surrender of the principle of gold monometallism as the first condition of peace. You demand surrender! Ay, sirs, you may cry 'Peace! peace!' but there is no peace. Just so long as there are people here who would chain this country to a single gold standard, there is war—eternal war; and it might just as well be known now! I have said that we stand by the pledges of all platforms. Let me quote them:

"The Populist platform adopted by the national convention in 1892 contained these words:

We demand free and unlimited coinage of silver and gold at the present legal ratio of 16 to 1.

"As the members of that party, both in the Senate and in the House, stand ready to carry out the pledge there made, no appeal to them is necessary.

"The Republican national platform adopted in 1888 contains this plank:

The Republican party is in favor of the use of both gold and silver as money, and condemns the policy of the Democratic Administration in its efforts to demonetize silver.

"The same party in 1892 adopted a platform containing the following language:

The American people from tradition and interest favor bimetallism, and the Republican party demands the use of both gold and silver as standard money, such restrictions to be determined by contemplation of values of the two metals, so that the purchasing and debt-paying power of the dollar, whether of silver, gold, or paper, shall be equal at all times.

The interests of the producers of the country, its farmers and its workmen, demand that every dollar, paper or gold, issued by the Government shall be as good as any other. We commend the wise and patriotic steps already taken by our Government to secure an international parity of value between gold and silver for use as money throughout the world.

"Are the Republican members of this House ready to abandon the system which the American people favor 'from tradition and interest'? Having won a presidential election upon a platform which condemned 'the policy of the Democratic Administration in its efforts to demonetize silver,' are they ready to join in that demonetization? Having advocated the Sherman law because it gave an increased use of silver, are they ready to repeal it and make no provisions for silver at all? Are they willing to go before the country confessing that they secured the present law by sharp practice, and only adopted it as an ingenious device for preventing free coinage, to be repealed as soon as the hour of danger was passed?

"The Democratic platform of 1880 contained these words:

Honest money, consisting of gold and silver, and paper convertible into coin on demand.

"It would seem that at that time silver was honest money, although the bullion value was considerably below the coinage value.

"In 1884 the Democratic platform contained this plank:

We believe in honest money, the gold and silver coinage of the Constitution, and a circulating medium convertible into such money without loss.

"It would seem that at that time silver was considered honest money.

"In 1888 the Democratic party did not express itself on the money question except by saying:

It renewed the pledge of its fidelity to Democratic faith, and reaffirms the platform adopted by its representatives in the convention of 1884.

"Since the platform of 1884 commended silver as an honest money, we must assume that the reaffirming of that platform declared anew that silver was honest money as late as 1888, although at that time its bullion value had fallen still more.

"The last utterance of a Democratic national convention upon this subject is contained in the platform adopted at Chicago in 1892. It is as follows:

We denounce the Republican legislation known as the Sherman act of 1890 as a cowardly makeshift, fraught with possibilities of danger in the future, which should make all of its supporters, as well as its author, anxious for its speedy repeal. We hold to the use of both gold and silver as the standard money of

the country, and to the coinage of both gold and silver without discrimination against either metal or charge for mintage, but the dollar unit of coinage of both metals must be of equal intrinsic and exchangeable value or be adjusted through international agreement, or by such safeguards of legislation as shall insure the maintenance of the parity of the two metals, and the equal power of every dollar at all times in the markets and in the payment of debts; and we demand that all paper currency shall be kept at par with and redeemable in such coin. We insist upon this policy as especially necessary for the protection of the farmers and laboring classes, the first and most defenseless victims of unstable money and a fluctuating currency.

"Thus it will be seen that gold and silver have been indissolubly linked together in our platforms. Never in the history of the party has it taken a position in favor of a gold standard. On every vote taken in the House and Senate a majority of the party have been recorded not only in favor of bimetallism, but for the free and unlimited coinage of gold and silver at the ratio of 16 to 1.

"The last platform pledges us to the use of both metals as standard money and to the free coinage of both metals at a fixed ratio. Does any one believe that Mr. Cleveland could have been elected President upon a platform declaring in favor of the unconditional repeal of the Sherman law? Can we go back to our people and tell them that, after denouncing for twenty years the crime of 1873, we have at last accepted it as a blessing? Shall bimetallism receive its death-blow in the House of its friends, and in the very hall where innumerable vows have been registered in its defense? What faith can be placed in platforms if their pledges can be violated with impunity? Is it right to rise above the power which created us? Is it patriotic to refuse that legislation in favor of gold and silver which a majority of the people have always demanded? Is it necessary to betray all parties in order to treat this subject in a 'non-partisan' way?"

Mr. Grosvenor, of Ohio, though ready to support the measure, laid most of the business depression to the probability of changes in the tariff under the pledges made in the Democratic platform. He said:

"One by one the furnaces went out, one by one the mines closed up, one after another the factories shortened their time. Why did they do that? Was it a mere senseless stampede? Was it a Wall-Street panic? Was it an unintelligent curtailment of the business of the country? I say not. Where is there an intelligent man to-day, if he were a manufacturer, with this threat of the presence of the Democratic party in power, the menace of its presence, the threat of its mere existence under that platform, and confiding, as human nature does, in the belief that a great political party will do what it says it will do—a violent presumption, I will admit, in the present instance—what one of you at the head of an industrial institution would carry on your business?"

"Let me ask you now to put this question to your constituents: What one of you at the head of an institution that manufactured something, anything, any one of the great institutions of the country employing laboring men, would make anything if you did not have a contract for its



reception, and payment on reception? And you would not even dare do that for fear the party who contracted to buy would find himself unable to comply with the contract at the end. What one of you who was a merchant would dare to buy anything to-day; and if so, what? The merchants of the country are buying just what they are compelled to buy from day to day. The manufacturer is making to-day just what he has orders for from undoubtedly solvent persons who have ordered the goods; and this has worked a revolution from one end of the country to the other.

"Bear in mind, now, I am not discussing the tariff question. I am not here to have that controversy now. We shall have a great deal of that, or the Democratic party will go to protest for default of its promises, for the 'robber' is at our throat yet, and you are passing away a great deal of valuable time while the robber is taking your substance from you, according to your views of the case. But I am simply pointing out how true it is that it is an entire revolution in this great industrial system, and that it is not by any means the product of this Sherman law.

"Mr. Speaker, it is said by the distinguished gentleman from Missouri that the volume of money is affected by the opening of every new industrial enterprise. As I understood his language the other day, he said that the erection of every new industrial institution made an additional call for an increase in the volume of the currency. If that be true, and if there was a fairly adequate volume of currency last November, there ought to be an almighty surplus in the country now; for I take it that the logic of that argument goes both ways, and that if the opening of a new industrial pursuit makes a demand for money, the closing of one will likewise congest the money somewhere; and, therefore, rather than be trying to make more money, we ought to be operating upon the industrial organizations of the country.

"The Republican party will always be patriotic; and we have the strongest assurance that the Democratic party will be in the present instance, or they would not dare to launch an administration measure upon the country and challenge defeat, or battle for success, basing their hopes upon the Republican minority of this House, when that Republican minority have been treated as we have been treated here.

"And now, Mr. Speaker, I have a suggestion to make looking to the restoration of confidence in this country. The imperfect organization of the House has been such that I have not had an opportunity to present to the country my remedy; but as a part of my speech, in my time, I ask to have read at the desk of the clerk a joint resolution which, in my judgment, would have done more than any tampering with the currency of this country to have restored confidence if it could have been introduced and then triumphantly enacted."

The clerk read as follows:

[Fifty-third Congress, House of Representatives.]  
Joint resolution declaring the intention of Congress in the matter of legislation touching the condition of the country.

Whereas the causes that have led to the present deplorable condition of the business of the country are

not known so definitely as to present an agreement of opinion, it is nevertheless universally agreed that one of the elements, which has become a potent factor, is the fear everywhere felt that Congress will change the tariff duties upon articles imported from abroad coming in direct competition with American products, and thus unfavorably affect home production; and

Whereas, the declaration of the platform of the Democratic convention of 1892 has caused fear in the country that the provisions of that platform would be carried into execution by Congress, and such fear has caused great reduction of production in all classes of manufacture, thereby throwing out of employment large numbers of workmen and causing a reduction in the wages of all who remain employed, whereby many workmen have become dependent upon charity for subsistence; and

Whereas, if this condition is not immediately checked and confidence be speedily restored, at least in some important measure, wider-spread demoralization in all branches of business will follow, with all the horrors of destitution, idleness, bankruptcy, and all the incidents of such conditions: Now, therefore, as one measure of relief, be it

Resolved, That it is not the intention of the Fifty-third Congress to make radical or important changes in the principles of tariff taxation, and it is hereby solemnly declared that Congress will not undertake a sweeping revision of the tariff laws, nor will it remove from American products, either of the farm, the mine, or the shop, that protection which now stands between the American producer and the foreign producer; and especially is it hereby declared that Congress will not remove from the products of agricultural industries the full measure of protection now afforded by law, to the end that wages may be maintained at the present rates and the producer be rewarded for his labor and capital by adequate prices.

"This declaration is demanded by the business interests of the whole country. This declaration by Congress would loosen the crippled wheels of industry. The cry comes up from all over the country, 'Let alone the tariff! let the McKinley law stand where it is!'"

Mr. Reed, of Maine, Aug. 26, in a speech in support of the measure, made this general statement as to the nature of the financial difficulty:

"Mr. Speaker, I am not certain of the wisdom of any member of this House, and least of all of my own. I am quite conscious also how difficult it is for anybody to know anything about currency in general, and how especially difficult it is to provide a remedy for a derangement of currency at any particular time. Nevertheless, while I have grave doubts of the wisdom of each individual, including myself, and no doubt whatever of the difficulty of the task, it is a comfort to me to fall back upon a well-established belief in the wisdom of all, even when shown by the decisions of the Congress of the United States.

"It may not be an absolutely righteous decision which we shall reach, nevertheless it is a comforting assurance to believe that that decision will be sufficient for the emergency, especially since it is accompanied by the certainty that no other wisdom is possible at the present time. Upon us and the people who are influencing our votes rests the decision of this and of other very important questions.

"Crises like the present are not uncommon in the history of the world; indeed, they seem to be essential to human progress, and to arise out of the characteristics of human nature itself.

Probably if wise men, now alive, had been consulted in the formation of the nature of mankind there would not have been these fluctuations which now disturb us, and which disfigure the history of the time. If we could have had that perfection of wisdom which is exhibited, so far as I have ever known, only in a greenback oration, we should have the human race proceeding on the upward grade steadily, without faltering and without relapse.

"But, unfortunately, human nature was not framed in that way. Instead of a continuous upward movement, always rising, always going forward, the movement of the human race seems to be a series of upward starts and of falls of almost proportionate length. The general progress has always been onward, but there have been many times when the movement has seemed to be to the rear.

"In the history of civilized nations these alternations have not been infrequent. The great rises and the great falls have extended over long periods of time. At intervals there have been minor falls as well as minor upliftings. We seem now to be at the beginning of one of those declines, the like of which happens after a long period. Unless all indications fail, we are in a situation very much like that which afflicted England in 1793 and in 1825, and which began to afflict us in the year 1873.

"After each long period of recuperation something starts the confidence of the human race in itself and the confidence of the nation in itself, and men feel a sudden courage to undertake all enterprises and to indulge in every effort tending to progress. Each one seems to encourage the other. Each enterprise seems to be an assistance to the other. The result is, that for a series of years prosperity seems to increase; men are busy, capital is busy, and prosperity without limit seems to be within the reach of the race and of the nation.

"Suddenly, from some cause entirely unanticipated, a doubt is cast upon the reality of the progress which has been made. Something awakens the element of caution in the race or nation, and, thereupon, rapidly and steadily, confidence disappears. Men feel that it is necessary to take an exact observation of the situation before resuming strenuous efforts. When that hour arrives there is no possibility of retreat or of change.

"The race or the nation has determined to examine into its condition, and the result is apparent disaster, misfortune, defeat, destruction of industries, and a general paralysis of business and of labor. There is a general liquidation of human affairs. Each man discovers what he is really worth, and the nation finds precisely what its absolute wants and needs are. If the period of prosperity could be expressed in a single word, that word would be confidence; and if the period of adversity, as we call it, could be expressed in a single word, that word would be distrust.

"During the period of progress, during the period of increased endeavor, where all capital is employed and every man is at work, confidence reigns supreme. Every man believes in his own success and in the success of his neighbor. Consequently, he is free to take goods and property at the general valuation; and the people who

sell property are ready to take the checks and instruments by which property is transferred. When the period of doubt sets in values become uncertain, because it is felt that a readjustment must be had. Checks and evidences of transfer are scrutinized with care, because men who were wealthy yesterday may be poor to-day.

"So, also, production ceases because the producer has great doubts whether the production of his mill or his workshop will be capable of sale, and, above all, whether he will gather in the proper payment. How far this element of distrust may go depends upon the seriousness of the previous inflation of values; and after a time, when men find precisely how they are situated themselves, and how their neighbors are placed, there begins slowly to revive the confidence which distinguished the former period, in small measure at first, and afterward in larger measure, until finally we reach another period, where confidence reigns and productiveness is at its utmost.

"This alternation between extreme production and production reduced to its lowest terms is something which the philanthropist may regard with horror, but which the man who has observed the history of the world is obliged to regard with tolerance. While these fluctuations occur often in the history of the human race, each one occurs from its own separate and special cause.

"In former times they used to be more especially confined to each particular country and were not simultaneous, but modern times have bound the earth together, so that it is impossible for even the greatest nation to disregard the other nations of the earth. The railroad has diminished distance and the telegraph has obliterated time. The ocean steamers plying between the different hemispheres, the trains of cars which sweep across the continents, have made business a far different thing from what it was in the earlier ages.

"Without undertaking to give the particulars of the change, it is enough to say that the world, which in the days of Magellan it required three years to circumnavigate, can be circumnavigated to-day in a period of two months. This binding together of the whole world by obliteration of time and distance has bound together the business of the world, and hence these periodic changes occur in greater or less measure throughout the world, not always exactly simultaneous, but always more or less sympathetic.

"Nevertheless, in each particular nation the cause is peculiar to itself. Each nation produces its own means of temporary prosperity; also its own causes for temporary depression. The fact that these depressions are nearly simultaneous does not in any way militate against the suggestions just made. If any one desires to notice the connection between the different countries he has only to go back to the crisis which occurred in the year 1890. It was found that there was a great scarcity of money in the United States, so great that under the influence of universal clamor more than forty millions of currency were let loose from the United States Treasury among the people of the United States.

"I do not think at the time that any one here fully comprehended the cause, although some



wise men had an inkling of it; but there was felt to be a constant drain of currency which was taking from us not only the money which we previously had in circulation, but the large sum which I have mentioned from the Treasury of the United States. When the course of events reached its end it was discovered that the great money center of the world—London, the capital of England—had been severely drained by a most tremendous set of enterprises in a distant nation of South America.

"The effect of that tremendous call upon the money center of Europe, which resulted in the shaking down of the house which was the synonym, especially in the United States of America, of credit, of enterprise, and of solidity—the house of Baring Brothers—drew upon the resources of the United States with a vigor that no one would have dared to prophesy a year before.

"But the United States at that time was sound in every way, and had not yielded to any disposition to inflation; consequently the storm was weathered, and we continued upon our career of prosperity and of labor. The country was prosperous because everybody was at work, because capital was thoroughly employed, and all the goods that were produced were consumed and were necessary for the wants of the people.

"In the year 1890, from a variety of circumstances which it is not necessary now to discuss—for the country cares very little to-day whether anybody was or was not to blame for the passage of the Sherman act—conspired to make the passage of that act an absolute necessity. The passage of that act pledged the United States to purchase every month, and issue its value in currency, 4,500,000 ounces of silver.

"At the time when that act was passed every patriot sincerely hoped that the expectation of the friends of silver, that that purchase would result in solving the problem of bimetallism for this country and placing silver on a par with gold, would be realized. That the friends of silver entertained that view I can not doubt, because it was expressed to me in terms of the utmost confidence. At the time, the passage of the act caused very little fear on the part even of the wisest; but a series of events, which are so fresh in the memory of every man who hears me that I need not recapitulate them, caused a drain of gold from the United States to England.

"That drain of gold sounded the alarm to the American people that the period of prosperity through which they had passed, and which was then in existence; which was shown by the employment of capital and the employment of labor, had reached a period of suspicion—a period always reached in such forward movements of the human race, and always to be anticipated, but never in reality anticipated. At no time when any nation in the world has been at one of these periods of prosperity have men in general suspected that the period of prosperity was about to close.

"Every man is in the whirl of ambitious effort, carried away by it, swept in the direction of it, and hence does not know what is about to happen. The stroke of the clock which shows that the time of settlement has arrived is always

a surprise; and, from the nature of things, and of human beings, always will be a surprise.

"Last May it became apparent that we had reached a period when a wise and judicious man would be careful to curtail the amount of his obligations. Some wise men had done so beforehand; other wise men had waited until that period. The banks then commenced to examine their collaterals, to call in their loans, and to put themselves in a position of safety, so far as possible. The first element of dissatisfaction and doubt which pressed itself upon the people was the fact that there was a continuous and unaccountable drain of gold.

"That drain of gold amounted, in round numbers, to a very great sum, so nearly equalling the amount of issue under the Sherman law that it seemed almost conclusive that the displacement of currency which was happening was on account of the issue under the Sherman law, because it seemed to be driving out the same proportion of gold which was the equivalent of its own amount. Whether that reasoning was sound or safe or correct is in no wise a matter of discussion. The fact that the feeling existed was sufficient for all the purposes of practical life.

"Men felt that it was absolutely necessary, even if that question was a question of doubt, so long as it was a question at all, that they should curtail their enterprises in the future, and that they should put themselves in order for a storm. Then followed what seems to be one of the characteristics of such a period—universal distrust. The first distrust arose from the doubt whether the United States was not rapidly approaching a system which would inevitably result in a silver standard and a lowering of the value of the dollar as compared with the gold standard, upon which the United States was then undertaking to base itself.

"This has nothing whatever to do with the question of the righteousness of the double standard or of the single standard. The United States at that moment was making gold its standard, and any question as to whether it was to fall or not to a silver standard was a question which instantly aroused the desire of the people to hoard, first gold, then, as the distrust spread, all kinds of money, for we not only began to doubt the Government of the United States and its policy, but also to doubt the solvency—not the present solvency, but the future solvency—of all the institutions of the country.

"When suspicion and doubt of that kind once enter the minds of 65,000,000 people there is no knowing where it will end. That it took serious possession of them is shown by the simple fact that out of the United States banking houses alone \$190,000,000 deposits were drawn by depositors from all parts of the country. How much was drawn out of State banks and out of trust companies, how much has been drawn out of savings banks, no one will ever probably know; but so much has been drawn, so much has been hoarded, so much has been kept out of circulation, that we are suffering to-day all the calamities of a restricted circulation in the midst of an abundant supply of money.

"This, then, at the present moment is the situation in which we find ourselves. I have, in thus narrating the outward circumstances

which have attended our present position, failed to state what is, after all, according to my judgment, the main underlying cause of the present condition of affairs. At the last election the Democratic party was brought into power by a curious combination of circumstances, as the result of a hundred causes—not with careful and candid deliberation, but as the result, in a large measure, of the apathy of the American people.

"The vote shows what I declare, and the recollection of every individual to whom I am speaking can be safely appealed to. While this thing has not been specially manifest during this discussion, while there has been little talk with regard to it, nevertheless, the consciousness of this fact underlies our entire situation. I do not intend in alluding to this fact to in any way refer to party politics. I do not undertake to raise any question as to whether the system of protection is a wise one or not. I do not undertake to dispute the proposition on the part of the Democracy that protection is a tax, wicked and iniquitous. For the purpose of discussion, and for that purpose only, I am quite free to admit that protection is a fraud, and that virtue resides only in a revenue tariff; but there remains, even if it be admitted that the propositions of the Democratic platform are righteous every one—there remains the fact that the system upon which the manufactures of this country have been regulated for thirty years is threatened with a total change; whether that change is to be for the better or not no man can know.

"What the Democratic party purpose to do with the power which is in their hands nobody can say. They do not even know themselves, and hence they are not able to impart it to others. For my part, I do not expect the Democratic party to be utterly bad. I do not believe they will be permitted to be so if they should so desire. Such is the restraining influence of the people, even after election, that I believe that through all the disguises, through all the masks which this election has thrown over the wishes of the people, nevertheless those wishes will be carried out. But at this present moment no man can know what will be the result of the action of this Congress upon the manufactures of this country.

"If the reformation of the tariff were in the hands even of its friends, if a change in the tariff were contemplated by those men who are in favor of the principle of protection, instead of in the hands of those who denounce it, I should feel entirely confident that business would be stagnant or remain at a standstill; but when this reformation of the tariff is in the hands of men opposed to the present system, those manufactures of the country which are built upon the present system must necessarily call a halt.

"If their goods which they manufacture are to be in competition with the manufactures of other lands, where the cost of production is upon a different basis, where labor is differently rewarded, as a matter of fact no manufacturer in this country will dare to manufacture goods until he knows the basis upon which his labor is to go into the production of his articles of sale. Until that question is settled you may be sure

that the manufacturers of this country will never dare to manufacture more than the absolute necessities of the people require.

"Prominent among the symptoms of the present condition of affairs is the closing of mills in all parts of the country. The currency question has something to do with that, but that which is of most importance is the uncertainty as to the basis upon which manufactures are to go on. Manufactures to-day are in no respect the subjects of chance or of miscalculation. All the elements of costs are so thoroughly understood, all the elements which enter into production are so thoroughly comprehended, that it is impossible for manufactures to go on, except upon the basis of small but sure profits.

"Unless the manufacturer can see his way directly to that, he has no object in running his mill; and unless in the future he can see that that mill can go on satisfactorily there is no object on earth for him to continue his manufactures and his organization. Therefore you may depend upon it that until the question is settled—until men know the terms upon which they are to employ labor, until they know the terms upon which they are to compete with foreign competitors—no loom will be in motion more than is necessary, and no wheel will turn except with the prospect of immediate profit.

"I will not undertake to dwell at this present time—for I do not want to confuse the issue—upon those unfortunate parts of the Democratic programme which are at present in abeyance, like the establishment of State banks and other financial measures, which we may possibly have to struggle with. I can characterize in a single phrase the cause of the present condition of affairs. It is the undiscoverable uncertainty of the future of both the currency questions and the questions of protection and revenue tariff.

"It will be seen from what I have said that I do not regard the Sherman act as in itself alone responsible for our present condition of affairs; that I believe that the causes of our present disaster underlie that; that the necessary stoppage of hundreds and thousands of mills all over this country is at the bottom of our disaster. Nevertheless, I do believe that the Sherman act and the accumulation of silver in the Treasury was the earliest indicator of the disaster which we are approaching, and that it has played a part not entirely unfortunate in warning us so that we can be saved from still further misfortune and doubt."

These extracts are given as representing the tone and temper of different elements in the House of Representatives, and not with the idea of summing up the debate, or summarizing the strongest arguments or the best speeches. That can hardly be done so long as the custom prevails of cumbering the record of Congress with long disquisitions that never were delivered. In a general way it may be said that the debate in the House was for the most part dull, and that the subject was so old and so often dealt with that there was little opportunity for originality in reasoning or for the presentation of new facts. In pursuance of the method of procedure already quoted, the House voted on the Wilson bill and several proposed amendments, Aug. 28.



The first amendment was as follows:

*Provided*, That all holders of silver bullion of the value of \$50 or more, and not too base for the operations of the mints, shall be entitled to deposit the same for coinage at the mints of the United States, and to have the same coined into the legal-tender standard silver dollars of 412½ grains standard silver to the dollar, on the same terms and conditions on which gold bullion is now deposited and coined.

That silver certificates shall be issued on such dollars in the manner now provided by law for the issuing of certificates on standard silver dollars.

This amendment would fix the ratio between gold and silver at 16 to 1; and it was defeated by the following vote:

YEAS—Abbott, Aitken, Alexander, Allen, Arnold, Bailey, Baker of Kansas, Bankhead, Bell of Colorado, Bell of Texas, Black of Georgia, Blanchard, Bland, Boatner, Boen, Bower of North Carolina, Bowers of California, Branch, Bretz, Broderick, Brookshire, Bryan, Bunn, Burnes, Caminetti, Cannon of California, Capehart, Clark of Missouri, Cobb of Alabama, Cockrell, Coffeen, Conn, Cooper of Texas, Cox, Crawford, Culberson, Curtis of Kansas, Davis, De Armond, Denson, Dinsmore, Dockery, Donovan, Doolittle, Edmunds, Ellis of Kentucky, Enloe, Epes, Fithian, Funston, Fyan, Geary, Goodnight, Grady, Hall of Missouri, Harris, Hartman, Hatch, Heard, Henderson of North Carolina, Holman, Hooker of Mississippi, Hudson, Hunter, Hutcheson, Jones, Kem, Kilgore, Kyle, Lane, Latimer, Lawson, Lester, Livingston, Lucas, Maddox, Maguire, Marshall, McCulloch, McDearmon, McKeighan, McLaurin, McMillin, McRae, Meredith, Money, Montgomery, Morgan, Moses, Murray, Neill, Newlands, O'Ferrall, Paynter, Pence, Pendleton of Texas, Pickler, Post, Richardson of Michigan, Richardson of Tennessee, Robbins, Robertson of Louisiana, Sayers, Sibley, Simpson, Stallings, Stockdale, Stone of Kentucky, Strait, Swanson, Sweet, Talbert of South Carolina, Tarsney, Tate, Taylor of Indiana, Terry, Turpin, Tyler, Wheeler of Alabama, Whiting, Williams of Illinois, Williams of Mississippi, Wilson of Washington, Woodward—124.

NAYS—Adams, Alderson, Aldrich, Apsley, Avery, Babcock, Baker of New Hampshire, Baldwin, Barnes, Bartholdt, Bartlett, Barwig, Belden, Beltzhoover, Berry, Bingham, Black of Illinois, Blair, Boutelle, Brattan, Brawley, Breckinridge of Arkansas, Breckinridge of Kentucky, Brickner, Brosius, Brown, Burrows, Bynum, Cabaniss, Cadmus, Caldwell, Campbell, Cannon of Illinois, Caruth, Catchings, Causey, Chickering, Childs, Clancy, Clarke of Alabama, Cobb of Missouri, Cockran, Cogswell, Compton, Coombs, Cooper of Florida, Cooper of Indiana, Cooper of Wisconsin, Cornish, Cousins, Covert, Crain, Cummings, Curtis of New York, Dalzell, Daniels, Davey, De Forest, Dingley, Dolliver, Draper, Dunn, Dunphy, Durborow, Ellis of Oregon, English, Erdman, Everett, Fellows, Fielder, Fitch, Fletcher, Forman, Funk, Gardner, Gear, Geissenhainer, Gillett of New York, Gillett of Massachusetts, Goldzier, Gorman, Gresham, Grosvenor, Grout, Hager, Hainer, Haines, Hall of Minnesota, Hammond, Hare, Harmer, Harter, Haugen, Hayes, Heiner, Henderson of Illinois, Henderson of Iowa, Hendrix, Hepburn, Hermann, Hicks, Hilborn, Hines, Hitt, Hooker of New York, Hopkins of Illinois, Hopkins of Pennsylvania, Houk of Ohio, Houk of Tennessee, Hulick, Hull, Ikirt, Johnson of Indiana, Johnson of North Dakota, Johnson of Ohio, Joy, Kiefer, Kribbs, Lacey, Lapham, Layton, Le Fever, Lilly, Linton, Lisle, Lockwood, Loud, Loudenslager, Lynch, Magner, Mahon, Mallory, Marsh, Martin of Indiana, Marvin of New York, McAleer, McCall, McCleary of Minnesota, McCreary of Kentucky, McDanold, McDowell, McEttrick, McGann, McKaig, McNaghy, Meiklejohn, Mercer, Meyer, Milliken, Moon, Morse, Mutchler, Northway, Oates, O'Neil of Massachusetts, O'Neill of Pennsylvania, Outhwaite, Page, Paschal, Patterson, Payne, Pearson, Pendleton of

West Virginia, Perkins, Phillips, Pigott, Powers, Price, Randall, Ray, Rayner, Reed, Reilly, Reyburn, Richards, Ritchie, Robinson of Pennsylvania, Rusk, Russell of Connecticut, Russell of Georgia, Ryan, Schermerhorn, Scranton, Settle, Shaw, Sherman, Sickles, Sipe, Smith, Snodgrass, Somers, Sperry, Springer, Stephenson, Stevens, C. W. Stone, W. A. Stone, Storer, Strong, Talbott of Maryland, Tawney, Taylor of Tennessee, Thomas, Tracey, Tucker, Turner, Updegraff, Van Voorhis of New York, Van Voorhis of Ohio, Wadsworth, Walker, Wanger, Warner, Washington, Waugh, Weadock, Wells, Wever, Wheeler of Illinois, White, Wilson of Ohio, Wilson of West Virginia, Wise, Wolverton, Woerner, Wright of Massachusetts, Wright of Pennsylvania—227.

NOT VOTING—Graham, Shell—2.

The second amendment was in the following terms:

*Provided*, That all holders of silver bullion of the value of \$50 or more, and not too base for the operations of the mints, shall be entitled to deposit the same at the mints and to have the same coined into silver dollars containing 438·60 grains of standard silver to the dollar on the same terms and conditions as gold bullion is now deposited and coined. That said dollars shall be a legal tender for all debts and dues, both public and private, and silver certificates shall be issued on said dollars in like manner as silver certificates are now issued on standard silver dollars.

The clause in regard to legal-tender quality was necessary because the coin provided for would be a new dollar. This amendment meant a ratio of 17 to 1, and it was defeated by a vote of 101 yeas to 241 nays; not voting, 11.

The third amendment was identical in terms, except that it provided for the free coinage of a silver dollar of 464·40 grains, and so would establish the ratio of 18 to 1. It was defeated by a vote of 103 yeas to 238 nays; not voting, 12.

The fourth amendment was worded in the same way, save that it provided for the free coinage of a silver dollar of 490·20 grains, and so would establish a ratio of 19 to 1. It was defeated by a vote of 104 yeas to 238 nays; not voting, 11.

The fifth amendment provided for the free coinage of a silver dollar of legal-tender quality containing 516 grains, and so would establish a ratio of 20 to 1. It was defeated by a vote of 121 yeas to 222 nays; not voting, 10.

The sixth amendment provided for a return to the policy of what is known as the Bland act, and was as follows:

*Provided*, That the act of Feb. 28, 1878, entitled "An Act to authorize the coinage of the standard silver dollar and to restore its legal-tender character," requiring the purchase monthly of not less than two million and not more than four million dollars' worth of silver bullion and the coining of the same as fast as purchased into standard silver dollars, be, and the same is hereby, revived and re-enacted into full force and effect.

This amendment was defeated by the following vote:

YEAS—Abbott, Aitken, Alderson, Alexander, Allen, Arnold, Bailey, Baker of Kansas, Bankhead, Bell of Colorado, Bell of Texas, Black of Georgia, Blanchard, Bland, Boatner, Boen, Bower of North Carolina, Bowers of California, Branch, Bretz, Brookshire, Bryan, Bunn, Burnes, Caminetti, Cannon of California, Capehart, Clark of Missouri, Cobb of Alabama, Cockrell, Coffeen, Conn, Cooper of Texas, Cox, Crawford, Culberson, Davis, De Armond, Denson, Dinsmore, Dockery, Donovan, Doolittle, Edmunds, Ellis of Kentucky



Ellis of Oregon, Enloe, Epes, Fithian, Fyan, Goodnight, Grady, Hall of Missouri, Hare, Harris, Hartman, Hatch, Heard, Henderson of North Carolina, Hermann, Hilborn, Holman, Hooker of Mississippi, Hopkins of Pennsylvania, Hudson, Hunter, Hutcheson, Ikirt, Jones, Kem, Kilgore, Kyle, Lane, Latimer, Lawson, Lester, Linton, Livingston, Lucas, Maddox, Maguire, Marshall, McCreary of Kentucky, McCulloch, McDearmon, McKeighan, McLaurin, McMillin, McRae, Meredith, Money, Montgomery, Morgan, Moses, Murray, Neill, Oates, O'Ferrall, Paschal, Paynter, Pence, Pendleton of Texas, Pickler, Post, Price, Richardson of Michigan, Richardson of Tennessee, Ritchie, Robbins, Robertson of Louisiana, Russell of Georgia, Sayers, Sibley, Simpson, Snodgrass, Stallings, Stockdale, Stone of Kentucky, Strait, Swanson, Sweet, Talbert of South Carolina, Tarsney, Tate, Taylor of Indiana, Terry, Tucker, Turpin, Tyler, Weadock, Wheeler of Alabama, Whiting, Williams of Illinois, Williams of Mississippi, Wilson of Washington, Woodard—136.

YAYS—Adams, Aldrich, Apsley, Avery, Babcock, Baker of New Hampshire, Baldwin, Barnes, Bartholdt, Bartlett, Barwig, Belden, Beltzhoover, Berry, Bingham, Black of Illinois, Blair, Boutelle, Brattan, Brawley, Breckinridge of Arkansas, Breckinridge of Kentucky, Brickner, Broderick, Brosius, Brown, Burrows, Bynum, Cabaniss, Cadmus, Caldwell, Campbell, Cannon of Illinois, Caruth, Catchings, Causey, Chickering, Childs, Clancy, Clarke of Alabama, Cobb of Missouri, Cockran, Cogswell, Compton, Conn, Coombs, Cooper of Florida, Cooper of Indiana, Cornish, Cousins, Covert, Crain, Cummings, Curtis of Kansas, Curtis of New York, Dalzell, Daniels, Davey, De Forest, Dingley, Dolliver, Draper, Dunn, Dunphy, Durborow, English, Erdman, Everett, Fellows, Fielder, Fitch, Fletcher, Forman, Funk, Funston, Gardner, Gear, Geary, Geissenhainer, Gillet of New York, Gillett of Massachusetts, Goldzier, Gorman, Gresham, Grosvenor, Grout, Hager, Hainer, Haines, Hall of Minnesota, Hammond, Harmer, Harter, Haugen, Hayes, Heiner, Henderson of Illinois, Henderson of Iowa, Hendrix, Hepburn, Hicks, Hines, Hitt, Hooker of New York, Hopkins of Illinois, Houk of Ohio, Houk of Tennessee, Hulick, Hull, Johnson of Indiana, Johnson of North Dakota, Johnson of Ohio, Joy, Kiefer, Kribbs, Lacey, Lapham, Layton, Le Fever, Lilly, Lisle, Lockwood, Loud, Loudenslager, Lynch, Magner, Mahon, Mallory, Marsh, Martin of Indiana, Marvin of New York, McAleer, McCall, McCleary of Minnesota, McDannold, McDowell, McEttrick, McGann, McKaig, McMillin, McNagney, Mercer, Meredith, Meyer, Milliken, Montgomery, Moon, Morse, Mutchler, Northway, Oates, O'Ferrall, O'Neil of Massachusetts, O'Neil of Pennsylvania, Outhwaite, Page, Paschal, Patterson, Payne, Paynter, Pearson, Pendleton of Texas, Pendleton of West Virginia, Perkins, Phillips, Pigott, Post, Powers, Price, Randall, Ray, Rayner, Reed, Reilly, Reyburn, Richards of Ohio, Richardson of Michigan, Ritchie, Robinson of Pennsylvania, Rusk, Russell of Connecticut, Russell of Georgia, Ryan, Schermerhorn, Scranton, Settle, Shaw, Sherman, Sickles, Sipe, Somers, Sperry, Springer, Stephenson, Stevens, Charles W. Stone, William A. Stone, Stone of Kentucky, Storer, Strong, Swanson, Talbott of Maryland, Tawney, Taylor of Indiana, Thomas, Tracey, Tucker, Turner, Turpin, Tyler, Updegraff, Van Voorhis of New York, Van Voorhis of Ohio, Wadsworth, Walker, Wanger, Warner, Washington, Waugh, Weadock, Wells, Wever, Wheeler of Illinois, White, Whiting, Wilson of Ohio, Wilson of West Virginia, Wise, Wolverton, Woomer, Wright of Massachusetts, Wright of Pennsylvania—239.

NOT VOTING—Cooper of Wisconsin, Graham, Newlands, Shell—4.

Mr. Wilson then demanded the previous question on the final passage of the bill, and the motion was carried by the following vote:

YAYS—Adams, Alderson, Aldrich, Apsley, Avery, Babcock, Baker of New Hampshire, Baldwin, Barnes, Bartholdt, Bartlett, Barwig, Belden, Beltzhoover, Berry, Bingham, Black of Georgia, Black of Illinois, Blair, Boutelle, Brattan, Brawley, Breckinridge of Arkansas, Breckinridge of Kentucky, Bretz, Brickner,

Brookshire, Brosius, Brown, Bunn, Burrows, Bynum, Cabaniss, Cadmus, Caldwell, Campbell, Cannon of California, Caruth, Catchings, Causey, Chickering, Childs, Clancy, Clarke of Alabama, Cobb of Missouri, Cockran, Cogswell, Compton, Conn, Coombs, Cooper of Florida, Cooper of Indiana, Cornish, Cousins, Covert, Crain, Cummings, Curtis of New York, Dalzell, Daniels, Davey, De Forest, Dingley, Dolliver, Donovan, Doolittle, Draper, Dunn, Dunphy, Durborow, Edmunds, English, Erdman, Everett, Fellows, Fielder, Fitch, Fletcher, Forman, Funk, Gardner, Gear, Geary, Geissenhainer, Gillett of New York, Gillett of Massachusetts, Goldzier, Gorman, Gresham, Grosvenor, Grout, Haines, Hall of Minnesota, Hammond, Hare, Harmer, Harter, Haugen, Hayes, Heiner, Henderson of Illinois, Henderson of Iowa, Hendrix, Hicks, Hines, Hitt, Holman, Hooker of New York, Hopkins of Illinois, Houk of Ohio, Houk of Tennessee, Hulick, Hull, Hunter, Johnson of Indiana, Johnson of North Dakota, Johnson of Ohio, Joy, Kiefer, Kribbs, Lacey, Lapham, Lawson, Layton, Le Fever, Lester, Lilly, Linton, Lisle, Lockwood, Loudenslager, Lynch, Magner, Mahon, Marshall, Martin of Indiana, Marvin of New York, McAleer, McCall, McCleary of Minnesota, McCreary of Kentucky, McDannold, McDowell, McEttrick, McGann, McKaig, McMillin, McNagney, Mercer, Meredith, Meyer, Milliken, Montgomery, Moon, Morse, Mutchler, Northway, Oates, O'Ferrall, O'Neil of Massachusetts, O'Neil of Pennsylvania, Outhwaite, Page, Paschal, Patterson, Payne, Paynter, Pearson, Pendleton of Texas, Pendleton of West Virginia, Perkins, Phillips, Pigott, Post, Powers, Price, Randall, Ray, Rayner, Reed, Reilly, Reyburn, Richards of Ohio, Richardson of Michigan, Ritchie, Robinson of Pennsylvania, Rusk, Russell of Connecticut, Russell of Georgia, Ryan, Schermerhorn, Scranton, Settle, Shaw, Sherman, Sickles, Sipe, Somers, Sperry, Springer, Stephenson, Stevens, Charles W. Stone, William A. Stone, Stone of Kentucky, Storer, Strong, Swanson, Talbott of Maryland, Tawney, Taylor of Indiana, Thomas, Tracey, Tucker, Turner, Turpin, Tyler, Updegraff, Van Voorhis of New York, Van Voorhis of Ohio, Wadsworth, Walker, Wanger, Warner, Washington, Waugh, Weadock, Wells, Wever, Wheeler of Illinois, White, Whiting, Wilson of Ohio, Wilson of West Virginia, Wise, Wolverton, Woomer, Wright of Massachusetts, Wright of Pennsylvania—239.

NAYS—Abbott, Aitken, Alexander, Allen, Arnold, Bailey, Baker of Kansas, Bankhead, Bell of Colorado, Bell of Texas, Blanchard, Bland, Boen, Bower of North Carolina, Bowers of California, Branch, Broderick, Bryan, Burnes, Caminetti, Cannon of Illinois, Clark of Missouri, Cobb of Alabama, Coffeen, Cooper of Texas, Cox, Crawford, Culberson, Curtis of Kansas, Davis, De Armond, Denson, Dinsmore, Dockery, Ellis of Kentucky, Ellis of Oregon, Enloe, Epes, Fithian, Funston, Fyan, Goodnight, Grady, Hager, Hainer, Hall of Missouri, Harris, Hartman, Hatch, Heard, Henderson of North Carolina, Hepburn, Hermann, Hilborn, Hooker of Mississippi, Hopkins of Pennsylvania, Hudson, Hutcheson, Ikirt, Jones, Kem, Kilgore, Kyle, Lane, Latimer, Livingston, Loud, Lucas, Maddox, Maguire, Mallory, Marsh, McCulloch, McDearmon, McKeighan, McLaurin, McRae, Meiklejohn, Money, Morgan, Moses, Murray, Neill, Newlands, Pence, Pickler, Richardson of Tennessee, Robbins, Robertson of Louisiana, Sayers, Sibley, Simpson, Smith, Snodgrass, Stallings, Stockdale, Strait, Sweet, Talbert of South Carolina, Tarsney, Tate, Taylor of Tennessee, Terry, Wheeler of Alabama, Williams of Illinois, Williams of Mississippi, Wilson of Washington, Woodard—108.

NOT VOTING—Boatner, Capehart, Cockrell, Cooper of Wisconsin, Graham, Shell—6.

The Democrats were pretty evenly divided between support of the measure and opposition to it; and the vote on the sixth amendment shows that only a minority of the majority party sustained the policy of the Administration.



Aug. 29, Mr. Voorhees, of Indiana, reported from the Finance Committee of the Senate the measure that had passed the House with the following amendment by way of substitute:

*Be it enacted, etc.,* That so much of the act approved July 14, 1890, entitled "An Act directing the purchase of silver bullion and issue of Treasury notes thereon, and for other purposes," as directs the Secretary of the Treasury to purchase from time to time silver bullion to the aggregate amount of 4,500,000 ounces, or so much thereof as may be offered in each month at the market price thereof, not exceeding \$1 for 371.25 grains of pure silver, and to issue in payment for such purchases Treasury notes of the United States, be, and the same is hereby, repealed. And it is hereby declared to be the policy of the United States to continue the use of both gold and silver as standard money, and to coin both gold and silver into money of equal intrinsic and exchangeable value, such equality to be secured through international agreement, or by such safeguards of legislation as will insure the maintenance of the parity in value of the coins of the two metals, and the equal power of every dollar at all times in the markets and in the payment of debts. And it is hereby further declared that the efforts of the Government should be steadily directed to the establishment of such a safe system of bimetalism as will maintain at all times the equal power of every dollar coined or issued by the United States, in the markets and in the payment of debts.

Over the passage of this substitute, known as the Voorhees bill, there was one of the most notable struggles in the history of Congress. Its advocates were eager to bring on a vote, being confident that a majority of Senators were ready to support it, and its opponents were determined to discuss it at their leisure, and seemed disposed to prevent action by interminable debates. Under the rules of the Senate there was no method by which debate could be closed; and as time wore on there was a disposition to force an amendment to the rules. But such amendment was not feasible except through violation of the rules as a preliminary. It would be necessary for the presiding officer to compel a vote by refusing to recognize a Senator who rose to argue against a change. This course the Vice-President would not adopt. The delay became so discouraging to the friends of the measure that there was at one time a serious attempt at a compromise bill, and one was prepared by a committee with the approval, it was rumored, of the Secretary of the Treasury, and nearly all the Democratic Senators pledged themselves to support it. But the President refused to countenance the project for a compromise, and it was abandoned. A few able speeches were made in behalf of the Voorhees bill, but as the session dragged its slow length along the champions of the cause of free silver coinage were obliged to do most of the talking. They spoke long and well, but it would be idle to attempt any synopsis of the debate on the merits of the measure. The chief interest centered in the incidents of the contest and the controversies arising out of them. One of these was the inconsistency of certain Democratic Senators who had been ardent advocates of free silver; another was the alleged interference of the Executive for the purpose of controlling congressional action; and another was the respective rights of majorities and minorities in legislative bodies. The Democratic Senators in charge of the measure were

hampered by their own record in filibustering against the passage of what is commonly called the Force bill, in a previous Congress.

On Oct. 11, Mr. Voorhees, who had been threatening heroic methods for some time, undertook to hold the Senate in continuous session and compel a vote on the bill. Mr. Dubois, of Idaho, said in the way of warning:

"The statement of the Senator from Indiana means that the Senate is to be held in continuous session until the pending bill is brought to a vote in the Senate, or until it is demonstrated that it can not be brought to a vote.

"I feel that this is a fair statement, having in mind the notice served on the Senate last Saturday by the distinguished chairman of the Finance Committee, as well as the present attitude of the Senator and his supporters.

"I should be pleased to consider the situation in a dispassionate manner with those who are resorting to this unjust and unusual procedure. Let us be frank with each other in an honest presentation of facts in order to avert, if possible, the undignified and uncalled-for exhibition which we will afford the country.

"The question before us is far-reaching and most important. I think that I do not overstate when I say that its settlement for or against silver will more directly affect this country for good or bad than any legislation which has been before Congress for thirty years. It should be debated, then, with calmness and without prejudice. The reason of Senators should be appealed to. This legislation should not be rushed through by inhuman methods and brute force. There is no argument in that which will satisfy Senators or the country.

"You can not charge the opponents of the pending measure with having resorted to obstructive methods. It is true they have debated and discussed the question. You can not and will not charge them with having willfully wasted time for purposes of delay. I have been at some pains to examine the "Record," and find that while the 32 opponents of repeal have spoken, 22 of its champions have also spoken.

"I refer to carefully prepared and set speeches. There have been as many, if not more, interruptions and colloquies brought on by the friends than by the opponents of repeal. The friends of the pending bill have consumed about one third of the time of the Senate in discussing this measure. With this record all must admit that if there has been any delay it can not be laid at our doors alone. I desire to call attention to this pertinent fact, which is also taken from the "Record." During the past three weeks there have been numerous roll-calls to ascertain if a quorum was present. On many of those calls more Senators who are friendly to silver answered to their names than antisliver Senators. On no one of those calls did 32 antisliver Senators respond. At any time the silver men could have stopped the business of the Senate by simply refraining from answering to their names. We have been more anxious to proceed than have our opponents, and have constantly furnished a quorum.

"I desire, too, to state the position of individual Senators on the pending bill so that the country may understand it. Any Senator may

verify my statement by checking up the Senate roll.

"There are 39 Senators who favor unconditional repeal; 38 Senators are opposed to unconditional repeal, and would so vote. Eight Senators are against free coinage and against unconditional repeal, and desire a compromise between the two which will furnish a constant and continued use of silver. Some of these eight have introduced amendments which they would prefer, but all of them are anxious to reach a basis of settlement on a compromise. I admit that most likely every one of these eight Senators would vote for unconditional repeal if forced to a vote. Their reasons are honorable and sufficient for themselves, and their motives are not questioned. They would much prefer not to be forced to vote on the pending bill, however.

"Another fact, which is important, must be patent to Senators. The country has been steadily drifting to the silver side. While the daily newspapers in the large cities and the bankers are abusive and intolerant and clamorous for repeal, the people are making their wishes known to Senators through public meetings, private communications, and country papers in such a manner as to make their influence felt.

"New York city has been most anxious for repeal, to judge from its press and the activity of its moneyed interests; yet the Republican State Convention, in its platform adopted last week, says not one word on the subject, but, on the contrary, favors bimetallism. They have no word of condemnation of our course, and none of praise for yours. It is significant, and I am very glad that the party to which I belong is coming so quickly and unmistakably to the support of silver and the people.

"I have gone thus somewhat into detail, showing the conditions which exist in the Senate and outside of it, to make plain the lack of cause, uselessness, and unfairness of resorting to the methods which you have apparently inaugurated.

"You know as well before you start in as you will when you emerge that you must fail. Conditions such as exist in the Senate preclude all hope of radical legislation. You are as likely to pass a free-coinage bill as you are to absolutely destroy silver. It looks as though you were trying to convince some one outside of this Chamber of something which you already know yourselves. Even if you accomplish that, the result will not justify the ordeal which you will compel Senators to undergo. There are distinguished Senators on this floor, now in the decline of life, who have served the republic with patriotism and honor for many years. Their brains are as clear and their convictions as strong as thirty years ago.

"In a combat where learning and ability is a factor, younger men would be at a disadvantage; but in a game of this sort, requiring nothing but physical strength, they are placed at tremendous if not dangerous odds. Unless the reasons are powerful you should not put these Senators (some of whom also are not well) to this test. They are entitled to our solicitude and care. They have our most profound respect and admiration. They merit this on account of their great abilities. If my friend, the distinguished Senator from Indiana, will pardon me, I class

him with the Senators I have just been describing; and I can not think he desires to subject himself or other Senators whom he sees around him to this hardship. His well-known kindness of heart precludes such a thought. He is impelled by that strong sense of duty which has always been his guide, and he himself no doubt will submit to this torture as long as nature holds out.

"Is there any sense in it or justification for it? We think not. We regard it as unusual and indefensible. We have never interposed any obstructions even to the long hours which the Senate has been keeping. We have maintained a quorum for you, and have offered no objection to your management of business. If you have concluded to abandon appeals to reason and judgment and to risk the settlement of this great question to the test of which side can stand the most punishment, we desire to give notice now that we shall protect our side in every way possible. We will insist that you furnish the quorum, and that you keep it constantly in the Chamber even if it necessitates innumerable roll-calls. We will not aid you in this or in anything else which will tend to prolong the struggle and the discomfort of all. The responsibility for what is to follow must rest with you, as well as its physical effect upon individual Senators."

This statement is quoted because it describes clearly the policy adopted by the opponents of repeal, and shows why that policy would be successful in breaking up a continuous session. Mr. Voorhees said in vindication of the expedient:

"The Senator from Idaho said it was unjust. Who makes it unjust? He speaks of it as inhuman. Well, I am not inhuman in my nature. It is not my disposition to hurt anybody. I would have let the fly out of the window as soon as Uncle Toby did, but I am here charged with a great duty, together with Senators around me. It is the duty of legislation. We must go forward. I would have been glad to have done so at an earlier period, but I had no rule to enable me, and whether young men or old men, we have to present the spectacle to the world of testing our physical endurance to get to a vote upon a question like this.

"Sir, this episode in our history will result in reforming the rules of this body. I am ready at the proper time (not in connection with heated discussion as we are in now) to vote for some measure by which a termination of debate can be reached. Otherwise this body will lose its proper influence and standing before the American people and before the world.

"Yes, I repeat, that this body must have rules by which to conclude discussion and reach a vote of a character higher, more reasonable, more sensible, and more decent than the rule under which we are acting now.

"I stand here asking the opponents of the bill whether they will name any day, and they will not; whether they will name any time, and they will not; and they will resort then to dilatory measures to prevent action being taken at all. Who is to quit? Who is to stop?

"Sir, I would rather be carried from this desk feet foremost and be laid to sleep at my dear



home in Terre Haute forever than to yield the principle that the majority has the right to govern. I stand here for the highest principle of free government known to men or known to history. We started in here some weeks ago to discuss the repeal of a bad measure of financial legislation. I have nothing to say on that question now, but we have reached a higher question than that. We have reached the principal question of free government. We have reached the greatest problem of free constitutional government. We have reached the question whether we have a Government that can administer itself by a lawful majority.

"Idle, vapid talk has taken place in the papers in regard to abolishing the Senate of the United States. The Senate of the United States can no more be abolished than the Constitution, for it is a great part thereof; but it can be governed by rules of its own making so as to make it a self-acting, a proper and a reasonable body of deliberation and legislation.

"I confess, sir, that when I confronted this question, when it fell to my fortune to manage the pending bill and I found how powerless I was, it almost paralyzed my energies of action. I found myself clothed with a mighty responsibility, a keen, eager, hungry expectation on the part of the public for speedy action, without any power at all to respond to it. Never, sir, do I desire to be placed in such an attitude again. Never do I desire any other man to be so placed, and he never shall be if by my agency a reform can take place in the rules of this body whereby a gentleman standing in the attitude I am here to-night shall be clothed with power, power under the rules, power under the Constitution, power under the laws, not lawless power but power regulated by law, to bring about a vote.

"Mr. President, I am tender of minorities; I would not injure the minority here, but shall the minority govern? Answer me, Shall the minority govern? Somebody has to rule. Somebody has to control this body. Shall it be the minority, or the majority?

"The Senator from Idaho signified that possibly they had a majority, and then I said, Let us ascertain that by a vote and we will submit to it gladly, willingly, if we are the minority; will you? No. Then the question comes whether or not we have a government at all. The question comes whether the Senate can be governed by a majority, or whether that vicious principle in government, the most vicious known in human history, that the few shall govern the many, shall obtain. Throughout my life, which in some of its parts has been a stormy one and is not now short, I have stood for the rule of the majority, and whatever the majority pronounces under the forms of law ought to be gracefully submitted to. I stand for that simply to-night.

"I stand here not talking of compromise, either. A great deal has been talked of compromise in the last week. I have not shared in it. There is a mighty principle involved in this question, and I am going to the end with it, so far as I am concerned. If I go down I will go down with my flag nailed to the masthead. If compromise is to take place, compromising on the principle that the minority has the right to dictate, it will be done by others, and not by me.

"Mr. President, one or two other things I might say; in fact, I will. I see myself criticised every day for the failure of the passage of the pending bill at an earlier period. If there is a Senator on either side of the Chamber, friend or foe of the measure, who knows how that could have been done, and he will arise and convince me of that, I will remain silent forever hereafter.

"I have been criticised for my bearing toward the opponents of the bill. I saw in one paper—from Boston, I think—that I should have denounced the Senators opposed to repeal as *feræ naturæ*, wild animals. Sir, I am proud of the fact that I have treated each representative of an American State as a Senator should be treated, so that when it is all over it will not be said that I have narrowed my mind by any unworthy passions, that I have not belittled the place I hold here by casting aspersions upon Senators who are sent here by States and are necessarily the peers of every other Senator. So far as I am concerned in this discussion and the struggle on which we now are entering, proceeding into the night, and to-morrow and to-morrow night, it will be conducted to the end upon the same principles of decorum, dignity, honor, and fairness which have thus far characterized it.

"I have no criticism to make of the bearing of Senators in opposition to the bill. The Senator from Idaho, in his well-turned sentences, said a while ago that when the roll was called at times here during the last two weeks there were more of them in attendance than on our side. That is true; but the reason why there was not more vigilance on this side was my knowledge of the fact that an agreement entered into with the Senator from Colorado, who sits here near me, was as binding as the laws of the Medes and Persians, and would not be broken. I knew that perfectly well.

"Now, a word in regard to criticism upon what is styled leadership. Sir, I assume no leadership. Providence and the kindness of my people at home have placed me where I am, and I have to do my duty; but in doing so, and in assuming the management of the bill, how is it to be done except under the rules of the Senate? The rules of the Senate are the emanations of the Constitution of the United States; they are provided for in the Constitution; and when each Senator takes an oath upon his admission here, he swears to support the Constitution, and consequently the rules and laws which govern this body. I have had it suggested to me frequently by letter and in the press to go outside of the rules, to appeal to the presiding officer of this body to sustain me in a motion not provided for in the list of motions, not provided for in the rules, to proceed to a vote. I would as soon think of committing open high treason, or private murder, as to commit such a crime. Perjury is an ugly thing to rest upon the human soul.

"And now, while on this point, allow me to say another thing. This debate seems very long to a certain class of people. It, indeed, seems long to us here because we have all been in it, and are tired. But you and I are aware, Mr. President, that there are instances in American history where debates have taken place in this body four times as long as this. When I am

criticised for allowing debate; when I am criticised for granting freedom of discussion that has run now to thirty-three days of actual occupancy—in regular order—on this bill, because that has been done it has struck a great many people that too much liberty has been given.

"Why, sir, the admission of States, great questions involving personal freedom, the right of habeas corpus, trial by jury, the reconstruction and preservation of States, have occupied this body time and again until the debate in this case would appear but a speck of time. The admission of California and the settlement of the Territorial questions therewith connected lasted nearly seven months, almost entirely occupying the time of the Senate. The admission of Missouri and the compromise attending it lasted nearly three months. Other instances I might cite without number.

"But we will derive a lesson, nevertheless, in connection with the present debate on account of this criticism, for it shows us that the question of money and financial stringency and crisis, trouble in monetary matters, are a far severer test to the patience of the people than even the loss of the great foundation principles of liberty or the exclusion of States from the Union.

"I must be pardoned for saying that this, I think, is about the first time certain moneyed classes and moneyed interests have ever taken notice of a long debate in the Senate because it touches them as it never has before. But taking it all together, I meet the situation with saying the best has been done which the rules permitted, so far as I know; and now, and in default of any answer when a vote can be reached, I invoke the spirit of wisdom, fairness, patience, and manhood on both sides, and we will proceed.

"Mr. President, I have not a doubt of the result. The majority can govern. The majority ought to govern. The majority must govern. It is the law of our being that it should be so. The spirit of this Government is on my side of this question. The spirit of liberty regulated by that law is that, with proper respect for the rights of a minority, the legally ascertained majority must and shall govern. I feel at this important hour that we have swept beyond the magnitude of the mere repeal of the Sherman act into the greater and higher question, Shall this Government be a government of majority, or shall a minority dictate? Shall the many govern, or shall the few?"

Mr. Allen, of Nebraska, talked for fourteen hours, making the longest congressional speech on record, and the task of occupying the attention of the Senate was then taken up by an unwearied filibustering associate. The opponents of repeal, whenever its advocates retired to take a rest in the cloak-rooms, called attention to the fact that there was no quorum, and demanded a call of the House. On such occasions they refused to vote, and the quorum had to be made up from the ranks of the majority. This tedious procedure wearied the Senators, and at 1.40 o'clock on the morning of Oct. 13 it was found impossible to compel the attendance of 43 Senators, and the Senate adjourned, closing the legislative day of Oct. 11.

Oct. 27, a vote was taken on an amendment to the Voorhees bill offered by Mr. Pepper, of Kansas.

It provided for striking out all of that bill after the repealing clause and adding the following sections:

SEC. 2. That any owner of gold bullion or silver bullion in condition fit for coinage, and of the coin value of \$50 or more, may deliver the same at any mint to the proper officers thereof, and it shall be formed into coins for the benefit of the depositor in the manner provided by the act of Congress approved Jan. 18, 1837, and in all respects according to the provisions of said act, all of which provisions, so far as the same are or may be applicable hereto, are hereby revived and re-enacted, except that the inscriptions and devices of coins of like denominations now current shall be placed on the coins authorized by this act, and double eagles may be coined, as provided in the act of Feb. 12, 1878.

SEC. 3. That all acts and parts of acts inconsistent with the provisions of this act are hereby repealed.

SEC. 4. That this act shall take effect and be in force thirty days after its passage.

This amendment would make the proposed measure a free-coinage act. It was defeated by the following vote:

YEAS—Allen, Bate, Berry, Blackburn, Butler, Call, Coke, Daniel, Dubois, George, Harris, Irby, Jones of Arkansas, Jones of Nevada, Kyle, Martin, Paseo, Pepper, Power, Pugh, Roach, Shoup, Stewart, Teller, Vance, Vest, Walthall, Wolcott—28.

NAYS—Aldrich, Caffery, Camden, Carey, Cullom, Davis, Dixon, Dolph, Faulkner, Frye, Gallinger, Gibson, Gorman, Gray, Hale, Higgins, Hill, Hoar, Lindsay, Lodge, McMillan, McPherson, Manderson, Mitchell of Wisconsin, Morrill, Murphy, Palmer, Perkins, Proctor, Quay, Ransom, Sherman, Smith, Stockbridge, Turpie, Vilas, Voorhees, Washburn, White of Louisiana—39.

NOT VOTING—Allison, Briece, Cameron, Chandler, Cockrell, Colquitt, Gordon, Hansbrough, Hawley, Hunton, Mills, Mitchell of Oregon, Morgan, Pettigrew, Platt, Squire, White of California, Wilson—18.

The chief significance of this vote lay in the change of opinion on the part of certain Senators who had voted for free coinage within a year.

Oct. 30, the vote on the substitution and passage of the Voorhees bill was taken, and the measure was adopted by the following vote:

YEAS.—Aldrich, Briece, Caffery, Camden, Carey, Cullom, Davis, Dixon, Dolph, Faulkner, Frye, Gallinger, Gibson, Gorman, Gray, Hale, Hawley, Higgins, Hill, Hoar, Hunton, Lindsay, Lodge, McMillan, McPherson, Manderson, Mills, Mitchell of Wisconsin, Morrill, Murphy, Platt, Proctor, Quay, Ransom, Sherman, Smith, Squire, Stockbridge, Turpie, Vilas, Voorhees, Washburn, White of Louisiana—43.

NAYS—Allen, Bate, Berry, Blackburn, Butler, Call, Cameron, Cockrell, Coke, Daniel, Dubois, George, Harris, Irby, Jones of Arkansas, Jones of Nevada, Kyle, Martin, Paseo, Pepper, Perkins, Pettigrew, Power, Pugh, Roach, Shoup, Stewart, Teller, Vance, Vest, Walthall, Wolcott—32.

NOT VOTING—Allison, Chandler, Colquitt, Gordon, Hansbrough, Mitchell of Oregon, Morgan, Palmer, White of California, Wilson—10.

On Nov. 1, the House of Representatives concurred in the Senate amendment, thus adopting the Voorhees bill instead of the Wilson bill. The vote on concurrence was as follows:

YEAS—Adams, Alderson, Aldrich, Apsley, Avery, Babcock, Baker of New Hampshire, Baldwin, Barnes, Bartlett, Barwig, Belden, Beltzhoover, Berry, Bingham, Black of Georgia, Black of Illinois, Blair, Brawley, Breckinridge of Arkansas, Bretz, Brickner, Brookshire, Brosius, Brown, Bunn, Bynum, Cabaniss, Cadmus, Caldwell, Campbell, Cannon of California,



Caruth, Catchings, Causey, Chickering, Clancy, Cobb of Missouri, Cockran, Cogswell, Compton, Coombs, Cooper of Florida, Cooper of Indiana, Cooper of Wisconsin, Cornish, Covert, Crain, Cummings, Curtis of New York, Daniels, Davey, De Forest, Dingley, Donovan, Draper, Dunn, Dunphy, Durborow, Edmunds, English, Erdman, Everett, Fellows, Fielder, Fitch, Fletcher, Forman, Gardner, Geary, Geissenhainer, Gillet, of New York, Goldzier, Gorman, Gresham, Grout, Haines, Hall of Minnesota, Hammond, Harmer, Harter, Haugen, Henderson of Iowa, Hendrix, Hines, Hitt, Holman, Hopkins of Illinois, Houk of Ohio, Houk of Tennessee, Hunter, Johnson of Indiana, Johnson of North Dakota, Johnson of Ohio, Joy, Kiefer, Kribbs, Lapham, Layton, Le Fever, Lilly, Linton, Lisle, Lockwood, Loudenslager, Lynch, Magner, Mahon, Marshall, Martin of Indiana, Marvin of New York, McAleer, McCall, McCleary of Minnesota, McCreary of Kentucky, McDanuold, McDowell, McEtrick, McGann, McKaig, McNaggy, Mercer, Meredith, Meyer, Milliken, Montgomery, Moon, Morse, Mutchler, Oates, O'Neil of Massachusetts, Outhwaite, Paschal, Patterson, Payne, Paynter, Pearson, Pendleton of West Virginia, Phillips, Pigott, Post, Powers, Price, Randall, Ray, Rayner, Reed, Reilly, Reyburn, Richards of Ohio, Richardson of Michigan, Ritchie, Rusk, Russell of Connecticut, Ryan, Schermerhorn, Scranton, Settle, Shaw, Sherman, Sickles, Sipe, Somers, Sperry, Springer, Stevens, C. W. Stone, W. A. Stone, Stone of Kentucky, Storer, Swanson, Talbott of Maryland, Taylor of Indiana, Thomas, Tracey, Tucker, Turner, Turpin, Tyler, Van Voorhis of New York, Wanger, Warner, Washington, Waugh, Weadock, Wells, Wheeler of Illinois, White, Whiting, Wilson of West Virginia, Wolverton, Woormer, Wright of Pennsylvania—193.

**NAYS**—Aitken, Alexander, Allen, Arnold, Bailey, Baker of Kansas, Bankhead, Bell of Colorado, Bell of Texas, Blanchard, Bland, Boatner, Boen, Bower of North Carolina, Branch, Broderick, Bryan, Burnes, Cannon of Illinois, Capehart, Clark of Missouri, Cobb of Alabama, Cockrell, Cooper of Texas, Cox, Crawford, Culberson, Curtis of Kansas, Davis, De Armond, Denson, Dinsmore, Dockery, Doolittle, Ellis of Oregon, Epes, Fithian, Funston, Fyan, Grady, Hainer, Hall of Missouri, Harris, Hartman, Heard, Henderson of North Carolina, Hermann, Hilborn, Hopkins of Pennsylvania, Hudson, Hutcheson, Ikirt, Jones, Kem, Kilgore, Kyle, Lane, Latimer, Livingston, Lucas, Maddox, Maguire, Mallory, Marsh, McCulloch, McDearmon, McKeighan, McLaurin, McRae, Meiklejohn, Money, Morgan, Moses, Pence, Richardson of Tennessee, Robbins, Robertson of Louisiana, Sayers, Shell, Sibley, Smith, Snodgrass, Stallings, Stockdale, Strait, Sweet, Talbert, of South Carolina, Tarsney, Tate, Terry, Wheeler of Alabama, Williams of Illinois, Williams of Mississippi, Wilson of Washington—94.

**NOR VOTING**—Abbott, Bartholdt, Boutelle, Bowers of California, Brattan, Breckinridge of Kentucky, Burrows, Caminetti, Childs, Clarke of Alabama, Coffeen, Conn, Cousins, Dalzell, Dolliver, Ellis of Kentucky, Enloe, Funk, Gear, Gillett of Massachusetts, Goodnight, Graham, Grosvenor, Hager, Hare, Hatch, Hayes, Heiner, Henderson of Illinois, Hepburn, Hicks, Hooker of Mississippi, Hooker of New York, Hulick, Hull, Lacey, Lawson, Lester, Loud, McMillin, Murray, Neill, Newlands, Northway, O'Farrell, O'Neill of Pennsylvania, Page, Pendleton of Texas, Perkins, Pickler, Robinson of Pennsylvania, Russell of Georgia, Simpson, Stephenson, Strong, Tawney, Taylor of Tennessee, Updegraff, Van Voorhis of Ohio, Wadsworth, Walker, Wever, Wilson of Ohio, Wise, Woodard, Wright of Massachusetts—66.

The President approved of the measure on the same day.

**Chinese Exclusion.**—Oct. 4, the following bill, to amend the Chinese Exclusion act of May 5, 1892, was reported in the House of Representatives:

A bill (H. R. 3687), to amend an act entitled "An Act to prohibit the coming of Chinese persons into the United States," approved May 5, 1892.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That section 6 of an act entitled "An Act to prohibit the coming of Chinese persons into the United States," approved May 5, 1892, is hereby amended, so as to read as follows:

"SEC. 6.—And it shall be the duty of all Chinese laborers within the limits of the United States who were entitled to remain in the United States before the passage of the act to which this is an amendment, to apply to the collector of internal revenue of their respective districts within six months after the passage of this act for a certificate of residence; and any Chinese laborer within the limits of the United States who shall neglect, fail, or refuse to comply with the provisions of this act, and the act to which this is an amendment, or who, after the expiration of said six months, shall be found within the jurisdiction of the United States without such certificate of residence, shall be deemed and adjudged to be unlawfully within the United States, and may be arrested by any United States customs official, collector of internal revenue or his deputies, United States marshal or his deputies, and taken before a United States judge, whose duty it shall be to order that he be deported from the United States, as provided in this act and in the act to which this is an amendment, unless he shall establish clearly to the satisfaction of said judge that by reason of accident, sickness, or other unavoidable cause, he has been unable to procure his certificate, and to the satisfaction of said United States judge, and by at least one credible witness other than Chinese, that he was a resident of the United States on the 5th of May, 1892; and if, upon the hearing, it shall appear that he is so entitled to a certificate, it shall be granted upon his paying the cost. Should it appear that said Chinaman had procured a certificate which had been lost or destroyed, he shall be detained and judgment suspended a reasonable time to enable him to procure a duplicate from the officer granting it, and in such cases the cost of said arrest and trial shall be in the discretion of the court; and any Chinese person, other than a Chinese laborer, having a right to be and remain in the United States, desiring such certificate as evidence of such right, may apply for and receive the same without charge; and that no proceedings for a violation of the provisions of said section 6 of said act of May 5, 1892, as originally enacted, shall hereafter be instituted, and that all proceedings for said violation now pending are hereby discontinued."

"*Provided*, That no Chinese person heretofore convicted in any court of the States or Territories, or of the United States, of a felony shall be permitted to register under the provisions of this act; but all of such persons who are now subject to deportation for failure or refusal to comply with the act to which this is an amendment, shall be deported from the United States, as in said act, and as in this act provided, upon any appropriate proceedings now pending or which may be hereafter instituted."

SEC. 2.—The words "laborer" or "laborers," wherever used in this act, or in the act to which this is an amendment, shall be construed to mean both skilled and unskilled manual laborers, including Chinese employed in mining, fishing, huckstering, peddling, laundrymen, or those engaged in taking, drying, or otherwise preserving shell or other fish for home consumption or exportation.

The term "merchant" as employed herein, and in the acts of which this is amendatory, shall have the following meaning and none other: A merchant is a person engaged in buying and selling merchandise at a fixed place of business, which business is conducted in his name, and who, during the time he claims to be engaged as a merchant, does not engage in the performance of any manual labor, except such as is necessary in the conduct of his business as such merchant.



Where an application is made by a Chinaman for entrance into the United States on the ground that he was formerly engaged in this country as a merchant, he shall establish by the testimony of two credible witnesses other than Chinese the fact that he conducted such business as hereinbefore defined for at least one year before his departure from the United States, and that during such year he was not engaged in the performance of any manual labor, except such as was necessary in the conduct of his business as such merchant, and in default of such proof shall be refused landing.

Such order of deportation shall be executed by the United States marshal of the district within which such order is made, and he shall execute the same with all convenient dispatch; and pending the execution of such order such Chinese person shall remain in the custody of the United States marshal, and shall not be admitted to bail.

The certificate herein provided for shall contain the photograph of the applicant, together with his name, local residence, and occupation; and a copy of such certificate, with a duplicate of such photograph attached, shall be filed in the office of the United States collector of internal revenue of the district in which such Chinaman makes application.

Such photographs in duplicate shall be furnished by each applicant in such form as may be prescribed by the Secretary of the Treasury.

Mr. McCreary, of Kentucky, said, in explanation of the measure:

"The pending bill was ordered to be reported by the Committee on Foreign Affairs, with but one dissenting member. It amends the Chinese exclusion act passed May 5, 1892, known as the Geary act, by extending the time from the passage of this bill six months, in which Chinese persons now in the United States may register and obtain certificates of residence. It also amends that act so as to require 'one creditable witness other than Chinese,' to prove that the applicant for a certificate was a resident of the United States on the 5th of May, 1892, instead of 'one credible white witness.' It also requires that the word 'laborer' or 'laborers,' wherever used in this act, or in the act to which this is an amendment, shall be construed to mean both skilled and unskilled manual laborers, including Chinese employed in mining, fishing, huckstering, peddling, laundrymen, or those engaged in taking, drying, or otherwise preserving shell or other fish for home consumption or exportation.

"The treaties between the United States and China, and the subsequent legislation adopted by Congress to prevent the immigration of Chinese laborers into this country, terminating in the exclusion act of May 5, 1892, are too well known to require lengthy discussion at this time. I will only refer briefly to the treaties and to the acts of Congress. The first treaty between the United States and the Empire of China was concluded on the 3d of July, 1844, and ratifications exchanged in December of the following year.

"The next treaty was negotiated with the Chinese Government in June, 1858, and ratifications exchanged in August of the following year. Both of these treaties were in the interests of peace, amity, and commerce between the two nations, and renewed the promise of protection to all citizens of the United States in China peaceably attending to their affairs, and stipulated for security to Christians in the profession of their religion; but neither the treaty

of 1844 nor that of 1858 referred to the emigration of the citizens and subjects of the two nations, respectively, from one country to the other.

"It was in 1868 that a new treaty was negotiated by Anson Burlingame and others, called a 'treaty concerning trade, consuls, religious toleration, and emigration.' This was the harbinger of a new era in the history of China, because it opened a country to free intercourse with other nations that had for ages been isolated and closed to all foreigners.

"I read Article VI of that treaty to show how broad and cordial our relations with China were at that time:

ARTICLE VI.—Citizens of the United States visiting or residing in China shall enjoy the same privileges, immunities, or exemptions in respect to travel or residence as may there be enjoyed by the citizens or subjects of the most favored nation; and, reciprocally, Chinese subjects visiting or residing in the United States shall enjoy the same privileges, immunities, and exemptions in respect to travel or residence as may there be enjoyed by the citizens or subjects of the most favored nation. But nothing herein contained shall be held to confer naturalization upon the citizens of the United States in China, nor upon the subjects of China in the United States.

"The large immigration of Chinese to our country which occurred after this treaty was made, their peculiar habits and their failure to assimilate with our people, the growing unpopularity of Chinese laborers, and the belief that their presence here was inimical to our institutions, led to the treaty concluded in 1880, known as 'the treaty regulating immigration into the United States.' It provides in its first article that whenever in the opinion of the Government of the United States the coming of Chinese laborers to the United States, or their residence therein, affects or threatens to affect the interests of that country, or to endanger the good order of the said country, or any locality within the territory thereof, the Government of China agrees that the Government of the United States may regulate, limit, or suspend such coming or residence, but may not absolutely prohibit it. The limitation or suspension shall be reasonable, and shall apply only to Chinese who may go to the United States as laborers, other classes not being included in the limitations. Legislation taken in regard to Chinese laborers will be of such a character only as is necessary to enforce the regulation, limitation, or suspension of immigration, and immigrants shall not be subject to personal maltreatment or abuse.

"The second article of this treaty declares that—

Chinese subjects, whether proceeding to the United States as teachers, students, merchants, or from curiosity, together with their body and household servants, and Chinese laborers who are now in the United States, shall be allowed to go and come of their own free will and accord, and shall be accorded all rights, privileges, immunities, and exemptions which are accorded to the citizens and subjects of the most favored nation.

"Soon after the ratification of this treaty, Congress, in 1882, enacted a law suspending for ten years the coming of Chinese laborers to the United States, and in 1884 this act was amended by imposing heavy penalties and punishments



on those who violated it. In 1888 a supplement to the act of 1882 was passed prohibiting Chinese laborers who had formerly resided in the United States, but who had departed, from returning to the United States.

"On the 5th of May, 1892, was passed 'the act to prohibit the coming of Chinese persons into the United States,' which the present bill seeks to amend.

"At that time, according to the census report of 1890, the Chinese population of the United States was 106,688. Of this number 95,477 were located in the Pacific States and Territories, and the residue were located in various cities of the United States. That act made it the duty of all Chinese laborers within the United States at the time of its passage to apply to the collector of internal revenue of their respective districts within one year after the passage of the act for a certificate of residence: and any Chinese laborer within the limits of the United States who failed to comply with the act, or who, after one year from the passage thereof, was found in the United States without such certificate of residence, was ordered to be arrested and deported from the United States.

"After the passage of the act of May 5, 1892, known as the Geary act, prominent representatives of Chinese persons in the United States employed Messrs. Choate, Carter, and Ashton, three able and experienced attorneys, to examine and render opinions on said act. Each of these attorneys rendered opinions in which they declared the act of May 5, 1892, repugnant to the Constitution of the United States. Their opinions were watched for with much interest by Chinese persons within the United States, and they exerted a great and controlling influence with them.

"Immediately after the expiration of the time allowed for registration by the exclusion act of 1892 there were three writs of *habeas corpus* granted by the circuit court of the United States for the southern district of New York, upon petitions of Chinese laborers arrested and held by the marshal of the district for not having certificates of residence under section 6 of said act. In each case the circuit court, after a hearing upon the writ of *habeas corpus* and the return of the marshal, dismissed the writs of *habeas corpus* and allowed an appeal. On appeals in these cases from the circuit court of the United States in and for the southern district of New York, five of the justices of the Supreme Court of the United States held (three of the justices dissenting and one being absent) that,

Upon careful consideration of the subject, the only conclusion which appears to us to be consistent with the principle of international law, and with the Constitution and laws of the United States, and with the previous decisions of this court, is that in each of these cases the judgment of the circuit court dismissing the writ of *habeas corpus* is right, and must be affirmed.

"This decision was not rendered until the 15th day of May, 1893, ten days after the time had expired in which Chinese persons could register and obtain certificates of residence.

"It seems just and fair that, as many Chinese persons were misled by the opinions rendered by Messrs. Choate, Carter, and Ashton, and failed to register and obtain certificates in the time

prescribed by law, and as the opinions of these eminent lawyers were sustained on the main question by the Chief Justice of the Supreme Court of the United States and two associate justices, the Chinese should have six months additional time in which to register and obtain certificates of residence.

"There is also another strong and convincing reason for the passage of this bill which concerns the United States. The report of the Secretary of the Treasury shows that 13,242 Chinese persons registered and obtained certificates of residence under the act of May 5, 1892, leaving 93,445 who failed to avail themselves of the privileges of said act. Assuming that about 10 per cent. of these will be entitled to exemption as teachers, students, merchants, and persons traveling for curiosity, there would remain about 85,000 that would be liable to deportation under the law.

"The Secretary of the Treasury says that he has but \$25,000 available of the fund for enforcing the deportation act of 1892; that the lowest cost for the transportation of Chinese from San Francisco to Hong-Kong is \$51 *per capita* for steerage passage, and the other expenses incident to arrest, trial, and inland transportation would average not less than \$35 more *per capita*. If, therefore, all Chinese persons within the United States who are required to register under the law and have failed to do so should be transported to China, the cost involved would amount to \$7,310,000. It will therefore be not only fair and just to Chinese persons, but wise economy to pass the pending bill and save millions of dollars for the United States."

The measure was sharply discussed in the House and in the Senate, and opposed by Pacific coast members of Congress. The main point of criticism was the neglect of the Administration in enforcing the Geary act. The bill passed the House Oct. 16, passed the Senate Nov. 3, and was approved by the President.

**Miscellaneous.**—The House of Representatives debated at great length and passed an important measure repealing the Federal Election laws, but it was not taken up in the Senate. The House also discussed fully a national bankruptcy law, and a bill to amend the naturalization laws. It passed a bill amending section 4131 of the Revised Statutes in regard to the registry of vessels; a bill requiring the judges of the courts of the United States to conform to the laws of the several States in delivering charges to juries; a bill providing for the printing, binding, and distribution of public documents; and a bill for a bridge across the Hudson river between New York and New Jersey. Both Houses passed an act in regard to timber culture, one in regard to mining claims, one increasing the number of army officers detailed to colleges, and several minor measures.

**Adjournment.**—Congress adjourned Nov. 3.

**Committees.**—The following are the standing and select committees of the Fifty-third Congress:

**SENATE.**—*Agriculture and Forestry.*—George, Bate, Ransom, Pepper, Roach, McMillan, Washburn, Proctor, Hansbrough.

*Appropriations.*—Cockrell, Call, Gorman, Blackburn, Brice, Allison, Hale, Cullom, Teller.

*To audit and control the Contingent Expenses of the Senate.*—White of Louisiana, Camden, Jones of Nevada.

*Census.*—Turpie, Berry, White of California, Murphy, Peffer, Hale, Stockbridge, Dixon, Hansbrough.

*Civil Service and Retrenchment.*—Call, Walthall, Gordon, Irby, Cockrell, Washburn, Morrill, Lodge, Perkins.

*Claims.*—Pasco, Daniel, Berry, Caffery, Allen, Mitchell of Oregon, Davis, Stewart, Peffer.

*Coast Defenses.*—Gordon, Irby, Mills, White of California, Smith, Squire, Dolph, Hawley, Higgins.

*Commerce.*—Ransom, Coke, Vest, Gorman, White of Louisiana, White of California, Murphy, Frye, Jones of Nevada, Dolph, Cullom, Washburn, Quay.

*District of Columbia.*—Harris, Faulkner, Gibson, Hunton, Smith, Martin, McMillan, Wolcott, Gallinger, Hansbrough, Proctor.

*Education and Labor.*—Kyle, George, Hunton, Caffery, Murphy, Carey, Washburn, Lodge, Perkins.

*Engrossed Bills.*—Allison, Cockrell, Martin.

*Enrolled Bills.*—Caffery, Mitchell of Wisconsin, Dubois.

*Epidemic Diseases.*—Jones of Nevada, Stockbridge, Gallinger, Quay, Harris, Irby, White of Louisiana.

*To examine the Several Branches of the Civil Service.*—Peffer, Gray, Vilas, Power, Gallinger.

*Finance.*—Voorhees, McPherson, Harris, Vance, Vest, Jones of Arkansas, Morrill, Sherman, Jones of Nevada, Allison, Aldrich.

*Fisheries.*—Coke, Call, Gibson, Hill, Mitchell of Wisconsin, Stockbridge, Squire, Power, Perkins.

*Foreign Relations.*—Morgan, Butler, Gray, Turpie, Daniel, Sherman, Frye, Dolph, Davis.

*Immigration.*—Hill, Voorhees, McPherson, Faulkner, Harris, Stewart, Chandler, Squire, Proctor, Dubois, Lodge.

*Improvement of the Mississippi River and its Tributaries.*—Bate, Walthall, Palmer, Peffer, Washburn, Pettigrew, Power.

*Indian Affairs.*—Jones of Arkansas, Morgan, Smith, Roach, Allen, Stewart, Platt, Stockbridge, Manderson, Pettigrew, Shoup.

*Indian Depredations.*—Lindsay, Faulkner, Kyle, White of Louisiana, Cockrell, Shoup, Chandler, Pettigrew, Perkins.

*Interstate Commerce.*—Butler, Gorman, Brice, White of Louisiana, Camden, Lindsay, Cullom, Wilson, Chandler, Wolcott, Higgins.

*Irrigation and Reclamation of Arid Lands.*—White of California, Jones of Arkansas, Kyle, Roach, Brice, Stewart, Dubois, Carey, Hansbrough.

*Judiciary.*—Pugh, Coke, George, Vilas, Hill, Lindsay, Hoar, Wilson, Teller, Platt, Mitchell of Oregon.

*Library.*—Mills, Voorhees, Wolcott.

*Manufactures.*—Gibson, Smith, Caffery, Higgins, Gallinger.

*Military Affairs.*—Walthall, Cockrell, Bate, Palmer, Mitchell of Wisconsin, Hawley, Cameron, Manderson, Davis.

*Mines and Mining.*—Stewart, Bate, Call, Irby, Mills, Jones of Nevada, Power, Shoup, Allison.

*Naval Affairs.*—McPherson, Butler, Blackburn, Gibson, Camden, Cameron, Hale, Stockbridge, Perkins.

*Organization, Conduct, and Expenditures of the Executive Departments.*—Smith, Cockrell, Hill, Walthall, Caffery, Wilson, Proctor, Dubois, Lodge.

*Pacific Railroads.*—Brice, Morgan, Faulkner, White of Louisiana, Murphy, Davis, Carey, Wolcott, McMillan.

*Patents.*—Gray, Kyle, Mills, Berry, Dixon, Platt, Wilson.

*Pensions.*—Palmer, Brice, Vilas, Camden, Caffery, Gorman, Shoup, Hansbrough, Gallinger, Hawley, Quay.

*Post-Offices and Post Roads.*—Colquitt, Vilas, Irby, Mills, Hunton, Hill, Mitchell of Oregon, McMillan, Wolcott, Dixon, Washburn.

*Printing.*—Gorman, Ransom, Manderson.

*Private Lands Claims.*—Hale, Teller, Dixon, Ransom, Colquitt, Pasco, Berry.

*Privileges and Elections.*—Vance, Gray, Pugh, Turpie, Palmer, Hoar, Mitchell of Oregon, Chandler, Higgins.

*Public Buildings and Grounds.*—Vest, Daniel, Pasco, Brice, Gordon, Morrill, Quay, Squire, Carey.

*Public Lands.*—Berry, Walthall, Pasco, Vilas, Martin, Allen, Dolph, Pettigrew, Carey, Power, Dubois.

*Railroads.*—Camden, Berry, Gordon, Palmer, Martin, Blackburn, Hawley, Stockbridge, Pettigrew, Power, Peffer.

*Relations with Canada.*—Murphy, Pugh, Colquitt, Hunton, Mitchell of Wisconsin, Hoar, Hale, Dolph, Higgins.

*Revision of the Laws of the United States.*—Daniel, Call, Lindsay, Wilson, Platt.

*Revolutionary Claims.*—Cameron, Frye, Aldrich, Coke, Pugh.

*Rules.*—Blackburn, Harris, Gorman, Aldrich, Manderson.

*Territories.*—Faulkner, Hill, Blackburn, Bate, Call, White of California, Platt, Davis, Carey, Shoup, Hansbrough.

*Transportation Routes to the Seaboard.*—Irby, George, Turpie, Gordon, Ransom, Gallinger, Squire, Mitchell of Oregon, Aldrich.

*SELECT COMMITTEES.*—*Additional Accommodations for the Library of Congress.*—Morrill, Dixon, Voorhees, Butler, Pugh.

*Corporations in the District of Columbia.*—Aldrich, McMillan, Gorman, Brice, Harris.

*To Establish the University of the United States.*—Hunton, Kyle, Vance, Jones of Arkansas, Turpie, Proctor, Sherman, Dolph, Washburn.

*On the Five Civilized Tribes of Indians.*—Teller, Platt, Butler, Pasco, Roach.

*Forest Reservations.*—Allen, Kyle, Morgan, Teller, Davis.

*To inquire into all Claims of Citizens of the United States against the Government of Nicaragua.*—Hawley, Stewart, Mitchell of Oregon, Morgan, Palmer.

*To investigate the Condition of the Potomac River Front of Washington.*—Frye, Sherman, McPherson, Ransom, Hunton, Perkins.

*To investigate the Geological Survey.*—Martin, Jones of Arkansas, Ransom, Wolcott, Carey.

*To investigate Trespasses upon Indian Lands.*—Roach, Butler, Higgins.

*National Banks.*—Mitchell of Wisconsin, Vance, Colquitt, Chandler, Manderson.

*Quadro-Centennial.*—Vilas, Colquitt, Vest, Gray, Daniel, Gibson, Voorhees, Lindsay, Pettigrew, Sherman, Cameron, Hawley, Wilson, Cullom.

*Transportation and Sale of Meat Products.*—Platt, Power, Vest, Coke, Allen.

*Woman Suffrage.*—Hoar, Quay, Vance, George, Blackburn, McPherson.

*HOUSE OF REPRESENTATIVES.*—*Accounts.*—Rusk, Paynter, Tate, Mutchler, Akirt, Wells, Post, Wright of Massachusetts, and Marvin of New York.

*Agriculture.*—Hatch, Alexander, Shell, Forman, Moses, Capehart, Sibley, Marshall, Schermerhorn, Williams of Mississippi, Simpson, Funston, Waugh, Funk, Apsley, Hainer, Baker of New Hampshire, and Flynn.

*Alcoholic Liquor Traffic.*—English, Barwig, Reilly, Layton, Livingston, Cooper of Texas, McEttrick, Morse, Daniels, Hainer, and Kiefer.

*Appropriations.*—Sayers, Breckinridge of Kentucky, Dockery, Compton, O'Neil of Massachusetts, Livingston, Washington, Robertson of Louisiana, Brookshire, Williams of Illinois, Coombs, Henderson of Iowa, Cogswell, Bingham, Dingley, Grout, and Cannon of Illinois.

*Banking and Currency.*—Springer, Sperry, Cox, Cobb of Missouri, Culberson, Ellis of Kentucky, Cobb of Alabama, Warner, Johnson of Ohio, Black of Georgia, Hall of Missouri, Walker, Brosius, Henderson of Illinois, Russell of Connecticut, Haugen, and Johnson of Indiana.



*Claims.*—Bunn, Cox, Campbell, Russell of Georgia, Hutcheson, Richards, Mutchler, Clark of Missouri, Hammond, Loud, Cooper of Wisconsin, Settle, Heiner, Kiefer, and Cousins.

*Coinage, Weights, and Measures.*—Bland, Tracey, Kilgore, Epps, Stone of Kentucky, Allen, Bankhead, Rayner, Harter, Coffeen, McKeighan, Charles W. Stone, Johnson of North Dakota, Dingley, Sweet, Hager, Aldrich, and Rawlins.

*District of Columbia.*—Heard, Richardson of Tennessee, Rusk, Cobb of Alabama, Meredith, Cadmus, Abbott, Cooper of Indiana, Cooper of Florida, Harner, Post, Cogswell, Belden, Hilborn, and Babcock.

*Education.*—Enloe, Grady, Pearson, McLaurin, Arnold, Williams of Mississippi, Stallings, Haines, Wever, Thomas, Van Voorhis of Ohio, Murray, and McCall.

*Election of President and Vice-President and Representatives in Congress.*—Fitch, Tucker, Crain, Compton, DeArmond, Donovan, Lawson, Stallings, Johnson of North Dakota, Curtis of New York, McDowell, Northway, and Haine.

*Elections.*—O'Ferrall, Brown, Paynter, Lockwood, Lawson, Hayes, Patterson, Denson, Woodard, Taylor of Tennessee, Waugh, Daniels, McCall, Thomas, and Wheeler of Illinois.

*Expenditures in the Department of Agriculture.*—Edmunds, Hall of Missouri, Cockrell, McDearmon, Ken, Hartman, and Funk.

*Expenditures in the Department of Justice.*—Dunphy, Clarke of Alabama, Brown, O'Neil of Massachusetts, Ritchie, Payne, and Reyburn.

*Expenditures in the Interior Department.*—Turner, Somers, Swanson, Talbert of South Carolina, Grout, Hopkins of Pennsylvania, and Bowers of California.

*Expenditures in the Navy Department.*—McMillin, Dockery, Abbott, Clancy, Milliken, Robinson of Pennsylvania, and Northway.

*Expenditures in the Post-Office Department.*—Oates, Paynter, Richards, Haines, Wright of Massachusetts, Ellis of Oregon, and Doolittle.

*Expenditures on Public Buildings.*—Crain, Cummings, Dunn, Boen, Moon, Gillet of New York, and Lilly.

*Expenditures in the State Department.*—Lester, Breckinridge of Kentucky, Covert, Alexander, Charles W. Stone, Caldwell, and Dolliver.

*Expenditures in the Treasury Department.*—Barwig, Hendrix, McNaghy, Sibley, William A. Stone, Wadsworth, and Grosvenor.

*Expenditures in the War Department.*—Montgomery, Bunn, Sickles, Black of Illinois, Hitt, Hooker of New York, and Loudenslager.

*Foreign Affairs.*—McCreary of Kentucky, Hooker of Mississippi, Fitch, Rayner, Geary, Price, Tucker, Dinsmore, Everett, Hitt, Harner, Storer, Blair, Draper, and Van Voorhis of New York.

*Immigration and Naturalization.*—Geissenhainer, Epps, Fyan, Brickner, Davey, Paschal, Maguire, Gillet of New York, Bartholdt, Wilson of Ohio, and McDowell.

*Indian Affairs.*—Holman, Allen, Turpin, Lynch, Hall of Minnesota, Maddox, Hunter, Pendleton of Texas, Bower of North Carolina, Kem, Wilson of Washington, Hopkins of Pennsylvania, Pickler, Sherman, Curtis of Kansas, and Smith of Arizona.

*Interstate and Foreign Commerce.*—Wise, Price, Brickner, Geary, Houk of Ohio, Mallory, Patterson, Caruth, Durborow, Brawley, Bartlett, O'Neill of Pennsylvania, Randall, Storer, Belden, Hepburn, and Fletcher.

*Invalid Pensions.*—Martin of Indiana, Fyan, Hare, McEtrick, Baldwin, Graham, McDannold, Erdmann, Fielder, Taylor of Tennessee, Pickler, Lacey, Apsley, Meiklejohn, and Strong.

*Irrigation of Arid Lands.*—Cooper of Indiana, Lisle, Paschal, Maguire, Richardson of Michigan, Pence, Newlands, Sweet, Doolittle, Hartman, and Tawney.

*Judiciary.*—Culberson, Oates, Stockdale, Goodnight, Boatner, Layton, Wolverton, Fellows, Lane,

Bailey, Terry, Ray, Powers, Broderick, William A. Stone, Updegraff, and Childs.

*Labor.*—McGann, Capehart, Dunn, Erdman, Wells, Ryan, Talbert of South Carolina, Pence, Apsley, McCleary of Minnesota, Phillips, Gardner, and Kiefer.

*Levees and Improvements of Mississippi River.*—Allen, Tracey, Stockdale, McDearmon, Johnson of Ohio, Sperry, Talbott of Maryland, Woodard, Ray, Haugen, Marsh, Joy, and Hicks.

*Manufactures.*—Page, Warner, Harter, Crawford, McLaurin, Gorman, Cornish, Conn, Chickering, Seranton, and Linton.

*Merchant Marine and Fisheries.*—Fithian, Magner, Berry, Robbins, Pigott, Cooper of Florida, Cornish, Bratton, Perkins, Gillett of Massachusetts, White, and Phillips.

*Mileage.*—Lynch, Strait, Pendleton of Texas, and Mahon.

*Military Affairs.*—Outhwaite, Wheeler of Alabama, Lapham, Gorman, Pendleton of West Virginia, Bretz, Sickles, Black of Illinois, Morgan, Bowers of California, Hull, Curtis of New York, Marsh, Gillet of Massachusetts, Woomer, and Joseph.

*Militia.*—Forman, Meyer, Haines, Baldwin, Bratton, Burnes, Cannon of California, Bell of Colorado, Wright of Massachusetts, Adams, Aitkin, Baker of New Hampshire, and Wright of Pennsylvania.

*Mines and Mining.*—Weadock, Sipe, Tate, Ikirt, Richardson of Michigan, McDannold, Cockrell, Baker of Kansas, Stephenson, Shaw, Newlands, Cousins, Lilly, and Rawlins.

*Naval Affairs.*—Cummings, Geissenhainer, Meyer, McAleer, Clancy, DeArmond, Money, Talbott of Maryland, Tyler, Boutelle, Dolliver, Wadsworth, Randall, Robinson of Pennsylvania, and Hulick.

*Pacific Railroads.*—Reilly, Snodgrass, Boatner, Caruth, Kyle, Lockwood, Weadock, Bell of Texas, Hendrix, Harris, Blair, Smith of Illinois, Powers, Hepburn, and Cooper of Wisconsin.

*Patents.*—Covert, Lapham, DeForest, Tate, Hutcheson, Strait, Robbins, Neill, Bowers of California, Draper, Hicks, Joy, and Hulick.

*Pensions.*—Moses, Henderson of North Carolina, Jones, Houk of Ohio, Snodgrass, Taylor of Indiana, Lisle, Clark of Missouri, Baker of Kansas, Loudenslager, Lucas, White, and Tawney.

*Post-Office and Post Roads.*—Henderson of North Carolina, Dunphy, Kyle, Hayes, Turpin, Sipe, Cabaniss, Burnes, Swanson, Caldwell, Wilson of Washington, Loud, Smith of Illinois, Houk of Tennessee, Gardner, and Flynn.

*Private Land Claims.*—Pendleton of West Virginia, Crawford, Edmunds, Fithian, Cockrell, Conn, English, Hudson, Bell of Colorado, Funston, Marvin, Lucas, Shaw, and Rawlins.

*Public Buildings and Grounds.*—Bankhead, Abbott, McKaig, Campbell, Bretz, Cadmus, Grady, Berry, Davey, Milliken, Sweet, Morse, Wright of Pennsylvania, Wever, and Mereer.

*Public Lands.*—McRae, Hare, Magner, Kribbs, Hall of Minnesota, Crawford, Gresham, Somers, Latimer, Davis, Lacey, Wanger, Moon, Meiklejohn, Ellis of Oregon, and Smith of Arizona.

*Railways and Canals.*—Catchings, Beltzhoover, Cobb of Missouri, Gresham, Ryan, Bower of North Carolina, Hudson, Cannon of California, Hull, Chickering, McCleary of Minnesota, Wanger, and Aitkin.

*Reform in the Civil Service.*—DeForest, Brawley, Meredith, Hooker of Mississippi, Branch, Everett, Hines, Taylor of Indiana, Hopkins of Illinois, Russell of Connecticut, Brosius, Sherman, and Van Voorhis of Ohio.

*Revision of the Laws.*—Ellis of Kentucky, Magner, Branch, Mallory, Neill, Pigott, Maguire, Maddox, Goldzier, Johnson of Indiana, Wheeler of Illinois, Hager, and Settle.

*Rivers and Harbors.*—Blanchard, Catchings, Lester, Clarke of Alabama, Jones, Page, Alderson, Causey, Caminetti, McCulloch, Barnes, Henderson of Illinois, Hermann, Stephenson, Hooker of New York, Grosvenor, and Reyburn.

*Rules.*—The Speaker, Catchings, Outhwaite, Reed, and Burrows.

*Territories.*—Wheeler of Alabama, Kilgore, Branch, Donovan, Kribbs, Arnold, Hunter, Simpson, Boen, Perkins, Scranton, Le Fever, Avery, Smith of Arizona, and Joseph.

*Ventilation and Acoustics.*—Shell, Durborow, Hammond, Graham, Walker, Heiner, and Linton.

*War Claims.*—Beltzhoover, Stone of Kentucky, Enloe, McLaurin, Cooper of Texas, Goldzier, McNaghy, Ritchie, Houk of Tennessee, Hermann, Mahon, Avery, and Wilson of Ohio.

*Ways and Means.*—Wilson of West Virginia, McMillin, Turner, Montgomery, Whiting, Cockran, Stevens, Bryan, Breckinridge of Arkansas, Bynum, Tarsney, Reed, Burrows, Payne, Dalzell, Hopkins of Illinois, and Gear.

*JOINT COMMITTEES.*—*Library.*—Fellows, O'Ferrall, and O'Neill of Pennsylvania.

*Printing.*—Richardson of Tennessee, McKaig, and Broderick.

*Enrolled Bills.*—Pearson, Russell of Georgia, Latimer, Hines, Hager, Adams, and Gillett of Massachusetts.

*To inquire into the Status of Laws organizing the Executive Departments.*—Dockery, Richardson of Tennessee, and Dingley.

*Disposition of Useless Papers in Executive Departments.*—Henderson of North Carolina, and Caldwell.

**CONNECTICUT**, a New England State, one of the original thirteen; ratified the national Constitution Jan. 9, 1788; area, 4,990 square miles. The population, according to each decennial census, was 237,946 in 1790; 251,002 in 1800; 261,942 in 1810; 275,148 in 1820; 297,675 in 1830; 309,978 in 1840; 370,792 in 1850; 430,147 in 1860; 537,454 in 1870; 622,700 in 1880; and 746,258 in 1890. Capital, Hartford.

**Government.**—The following were the State officers during the year: Governor, Luzon B. Morris, Democrat; Lieutenant-Governor, Ernest Cady; Secretary of State, John J. Phelan; Treasurer, Marvin H. Sanger; Comptroller, Nicholas Staub; Secretary of State Board of Education, Charles D. Hine; Insurance Commissioner, Orsamus R. Fyler, succeeded by John S. Seymour, appointed March 6, who resigned and was in turn succeeded by Burton Mansfield, appointed April 11; Railroad Commissioners, William O. Seymour, George M. Woodruff, William H. Haywood, succeeded by Alexander C. Robertson; Chief Justice of the Supreme Court of Errors, Charles B. Andrews; Associate Justices, David Torrance, Elisha Carpenter, Augustus H. Fenn, appointed Feb. 1, and Simeon E. Baldwin, appointed Feb. 2. As Justice Carpenter will be disqualified from further service on account of age after Jan. 14, 1894, the General Assembly, anticipating the vacancy, appointed William Hammersley, on May 31, as his successor.

**Finances.**—The latest report of the State Treasurer, which covers the period from July 1, 1891, to Oct. 1, 1892, presents the following figures: Balance on July 1, 1891, \$984,076.10; total receipts for the period, \$2,159,289.25; total disbursements, \$2,218,947.91; balance on Oct. 1, 1892, \$924,417.44. The receipts were derived from the following sources: Tax on mutual insurance companies, \$252,663.18; tax on stock of nonresidents, \$91,143.53; savings-bank tax, \$420,838.82; tax on railroads, \$790,309.62; military commutation tax, \$126,531; tax on investments, \$108,433.95; collateral inheritance tax, \$177,662.97; tax on telegraph companies, \$10,-

904.51; received from Commissioner of Insurance, \$57,427.80; interest on cash balances in treasury, \$54,973.78; miscellaneous receipts, \$18,500.09. No *ad valorem* tax on property has been levied for several years, the income from the sources above mentioned being amply sufficient to meet the expenses of the State.

The State debt on Sept. 30, 1892, was \$3,240,200, none of which is payable until 1903. The last portion of the debt which the State had the option of paying before maturity was wiped out in July, 1892, by the call of the Treasurer for the redemption of \$200,000 of the bonds of 1887.

**Legislative Sessions.**—On Jan. 3 both Houses of the General Assembly of 1891 met for their final session, the Senate by adjournment from Dec. 19 previous, the Lower House by adjournment from Nov. 15. No business was transacted, and, after holding sessions extending over a period of two years, the legislators laid down their office without having succeeded in enacting a single law. The General Assembly elected in the preceding November began its work on Jan. 4, and continued in session through June 30. In consequence of the nonaction of its predecessor, there was nearly twice the usual amount of business awaiting its consideration. One of its earliest duties was the election of a successor to United States Senator Joseph R. Hawley. At a Republican caucus on Jan. 10 Senator Hawley was renominated on the sixth ballot, receiving 67 votes, ex-Gov. Morgan G. Bulkeley receiving 35, Samuel Fessenden 22, William E. Simonds 8, and William C. Case 6. The Democratic nominee was Carlos French. On the first joint ballot in the General Assembly, on Jan. 18, Senator Hawley was re-elected by a vote of 138 to 114 for Mr. French. One of the most striking results of the session was the adoption of a proposed constitutional amendment providing for the election of State officers by a plurality vote. Connecticut being one of the few remaining States where a majority of all the votes cast is necessary for an election. Another proposed amendment contemplates an increase in the number of State Senators—not to exceed 37. The county limitations are to be removed, allowing the senatorial districts to include towns in different counties. Towns may also be divided in order to equalize the districts. By another amendment the compensation of members of the General Assembly is to be limited to \$500, and the State is to provide transportation for each member to and from the sessions over the most convenient line of travel. The question of making radical changes in the Constitution, through the agency of a constitutional convention, was discussed at length, but the bill providing for a convention failed of adoption. Several plans were considered to obviate future trouble in the event of another contested State election, but no legislation resulted.

The Storrs Agricultural School was raised to the dignity of a college, and the moneys annually received from the United States in aid of agricultural colleges, which hitherto have been enjoyed by the Sheffield Scientific School of New Haven, were bestowed upon the new institution. Two normal schools were established in addition to the two already supported by the State, one at New Haven and the other at Bridgeport. The



sum of \$100,000 was appropriated for buildings. Towns and school districts having 10,000 or more inhabitants were required to establish and maintain evening schools for children over fourteen years of age, and towns of fewer than 10,000 inhabitants were permitted to maintain such schools if the inhabitants should so vote. Women were authorized to vote at any meeting held for choosing school officers or for any educational purpose.

Cities and towns were authorized to establish and maintain suitable plants for the manufacture of gas and electricity. In the matter of taxation, street railroads were subjected to the same law as steam railroads.

Claims of attorneys to the amount of \$25,000 were recognized for services in the legal contest over the State election of 1891, and the payment of salaries to the claimants as well as to the incumbents of certain of the State offices which were in dispute after that election was authorized.

Other acts of the session were as follow:

Establishing a commission for promotion of uniformity in State legislation.

Giving manufacturers and throwsters of cotton, woolen, and silk goods a lien thereon for labor and materials used in manufacturing or throwing.

Requiring hotels to be equipped with fire escapes.

Providing for the incorporation of Christian churches.

Providing for the inspection of steam boilers.

Providing for the organization of districts for any or all of the following purposes: To extinguish fires, to sprinkle streets, to light streets, to plant and care for shade and ornamental trees, to construct and maintain sidewalks, crosswalks, drains, and sewers, to appoint and employ watchmen or police officers.

Forbidding the employment of any person under sixteen years of age in running elevators.

Authorizing actions to quiet title to real estate.

To define and punish pool-selling.

To preserve shade and ornamental trees along highways.

To prohibit the killing or capturing of deer for ten years from Oct. 1, 1893.

Requiring all employers to furnish suitable seats for women and girls in their employ.

Authorizing corporations to issue preferred stock.

Authorizing cities to establish funds for the benefit of disabled policemen.

Establishing a State Board of Dental Commissioners, requiring all new dental practitioners to obtain a license from this board, and otherwise regulating the practice of dentistry.

Providing for the education of the blind.

Regulating and restricting the practice of medicine, surgery, and midwifery.

To protect unions and associations of workmen in the use of their labels and trade-marks.

To promote the establishment and improvement of public libraries and school libraries.

Revising the law governing the State militia.

Requiring every schoolhouse to be provided with a United States flag at public expense, and requiring suitable exercises to be held annually in each school with reference to the adoption of the flag.

Providing for the appointment of a commissioner on peach yellows, and prescribing his duties.

Prohibiting pharmacists from selling intoxicating liquors to be drunk on the premises.

Establishing a standard measure for charcoal.

Authorizing the organization of a naval battalion in connection with the Connecticut National Guard.

Enlarging the scope of investments by savings banks.

Providing that the infliction of the death penalty

shall be carried out only in the State Prison at Wethersfield, the warden, or, in case of his inability or absence, the deputy warden, to be the executioner.

Providing that no electric, cable, or horse railroad shall hereafter be conducted across the tracks of a steam railroad at grade, except upon the application to, and approval by, the railroad commissioners; nor shall any steam railroad cross any such electric, cable, or horse railroad at grade, except upon like application and approval.

The political complexion of each House of the General Assembly was as follows: Senate—Republicans 12, Democrats 12; House—Republicans 133, Democrats 118.

**Education.**—The following statistics from the latest report of the State Board of Education cover the school year 1890-'91: Children of school age, 161,241; enrolled in the public schools, 128,905; increase over previous year, 2,400; average daily attendance, 84,304; increase, 648; average school year, 182.26 days; number of schoolhouses, 1,650; value of school property, \$6,655,054; male teachers—in winter, 434, in summer, 341; female teachers—in winter, 2,866, in summer, 2,952; average monthly wages male teachers, \$77.11; average monthly wages female teachers, \$39.84. Sources of revenue: from permanent funds, \$164,531.38; from State taxes, \$241,861.50; from local taxes, \$1,527,110.19; from other sources, \$75,880.51; total revenue, \$2,009,383.58. Expenditures—for new buildings, \$307,830.92; for salaries of teachers and superintendents, \$1,560,608.21; for libraries and apparatus, \$15,121.33; for miscellaneous expenses, \$283,518.72; total expenses, \$2,167,079.18.

**Charities.**—At the State Insane Hospital there were 1,377 patients on July 1, 1890; 788 were admitted during the ensuing two years, and 659 were discharged, leaving 1,506 in confinement on July 1, 1892. The capacity of the present buildings has been much exceeded, and there are, besides, more than 200 insane persons in the almshouses awaiting admission to the institution.

At the School for Imbeciles there were 142 pupils in attendance during the year ending Oct. 1, 1892, and the State expended for them the sum of \$12,749.72.

**State Prison.**—This institution, at Wethersfield, contained 318 convicts on July 1, 1890; and during the two years following 241 convicts were received, and 262 discharged, leaving 297 remaining on July 1, 1892. The expenses during this period were \$86,515.08, and the income from prison labor and other sources \$71,552.01, making the net cost of the institution to the State only \$14,963.07. More than three fourths of the income is derived from shoe shops connected with the prison.

At the State Reform School there were 434 boys on July 1, 1891; 216 were received during the year ensuing, and 229 were discharged, leaving 421 on July 1, 1892. The cost of the institution to the State for the year was \$55,402.15. The Industrial School for Girls contained 218 pupils on July 1, 1890; 327 were admitted and 308 were discharged during the two years following, leaving 237 on July 1, 1892.

**Savings Banks.**—The total number of depositors in all the savings banks in the State, Oct. 1, 1892, was 331,061, the gain for the year being 13,136. The deposits amounted to \$130,-

686,729, the gain for the year being \$8,104,569.57. The average amount due depositors was \$394.75, being a gain of \$9.18 compared with Oct. 1, 1891. The largest amount due a single depositor was \$107,528.62. The number of accounts opened during the twelve months was 55,495, and the number closed 41,870. The income received during the year was \$7,006,623.57, the gain being \$357,314.95 as compared with Oct. 1, 1891. The dividends declared during the year amounted to \$4,918,576.77, the year's increase amounting to \$115,483.37. The amount deposited, including interest accredited during the year, was \$34,719,815.05, and the amount withdrawn aggregated \$26,615,245.48. The office expenses, including salaries, amounted to \$342,873.40. In all the banks the assets yielding no income amounted to only \$407,708.28.

**Local Option.**—Town elections were held throughout the State early in October, at which the question of license or no license for the year following was voted upon. The result is shown below in comparison with the vote in 1892:

COUNTIES.	TOWNS VOTING LICENSE.		TOWNS VOTING NO LICENSE.	
	1892.	1893.	1892.	1893.
Hartford.....	18	13	11	16
New Haven.....	17	17	9	9
New London.....	8	7	13	14
Fairfield.....	15	14	8	9
Windham.....	12	3	12	12
Litchfield.....	9	11	17	15
Middlesex.....	6	4	9	11
Tolland.....	3	2	10	11
Total.....	78	71	90	97

**State Constitution.**—The following is an extract from the message of Gov. Morris to the General Assembly in January:

"We are living under a Constitution which was adopted during the stagecoach era, when the people were generally engaged in agriculture, and the population of the State was much more evenly distributed among the several towns than at present. Their wants were similar, and the Constitution when adopted was suitable for their condition at that time. With the changes in pursuits and methods of business there has arisen great inequality in the population of the several towns. In some the population has decreased, in others it has largely increased, and different interests have arisen, so that the representation given to the several towns when the Constitution was adopted, and which was then substantially equal and just, has become very unequal and unjust. To illustrate this, if we refer to the population of the several towns of this State, as shown by the census of 1890, we shall find that towns having less than one seventh part of the population of the State elect a majority of the House of Representatives, and therefore have more political power than the remaining six sevenths. The mere statement of this fact alone would seem to be enough to prove the need of a constitutional revision."

**COSTA RICA**, a republic in Central America. The Constitution, as restored with modifications on April 26, 1882, vests the legislative power in a Chamber of Representatives, the members of which are elected, in the proportion of 1 to 8,000 inhabitants, by electors chosen by limited

suffrage for four years, one half being replaced every two years. In 1889 there were 540 electors and 26 Representatives. The President is elected for four years by the same electoral assembly. José Joaquín Rodríguez was elected President for the term ending May 8, 1894.

**Area and Population.**—The area is 20,790 square miles. The population, as determined by the census of Feb. 18, 1892, is 243,205. The number of marriages registered in 1891 was 1,000; of births, 7,684; of deaths, 8,489. In the same year the returns show a net immigration of 2,624 persons. These figures are manifestly wrong in regard to births and departures. The capital, San José, has about 24,000 inhabitants.

**Commerce and Production.**—The variety of soil and climate is such that almost all the vegetable products of the torrid and temperate regions can be grown. The chief culture is coffee, of which 363,673 quintals were produced in 1891. Bananas are exported in large quantities, to the value of 680,225 pesos in 1891. Other exports are hides and skins, dye woods, rubber, tobacco, sugar, cocoanuts, rice, bullion, and cacao. The total value of imports in 1892 was 8,351,029 pesos, and of exports, 8,484,115 pesos. The commercial relations are chiefly with the United States, Great Britain, Central American countries, and Germany.

**Finances.**—The revenue for 1892 was 5,808,474 pesos in paper, which is 25 per cent. or more below par, and the expenditure was 5,447,290 pesos. The principal sources of revenue are customs, yielding 2,154,308 pesos, and spirits and tobacco, yielding 2,143,088 pesos. The expenditure on public works was 590,250 pesos; on education, 495,224 pesos; on the army, numbering 600 men, 475,729 pesos; on the interior, 376,855 pesos; on finance and trade, 364,747 pesos; on police, 214,662 pesos.

The total debt in 1892 amounted to 21,675,643 pesos. The old sterling loans of 1871 and 1872, bearing 6 and 7 per cent. interest, and amounting with unpaid arrears to £2,199,512 in 1887, were compounded in 1888 for a new 5-per-cent. loan of £2,000,000, which was assumed by the Costa Rica Railroad Company. The railroad extends from Limón to Alajuela, 147 miles, and an extension to the Pacific coast is projected, of which the section from Punta Arenas, on the Pacific, to Esparza, 14 miles, is completed.

**Revolutionary Conspiracy.**—There was an attempt in March, 1893, to overthrow the Government, planned by José María Gutiérrez, the leader of a previous revolt, and other political exiles who had taken the benefit of an amnesty proclamation and returned to the country. The conspirators plotted to seize the military barracks and arsenal at San José and arm their followers with the weapons of the War Department. The President and Minister of War were apprised of the plot by an informer, but permitted the conspirators to proceed, in order to capture them in the act of treason. On the day fixed for the uprising some of the leaders were quietly arrested. Others were allowed to supply themselves with arms and ammunition from the Government stores, and then were surprised by the troops and sent to prison. In order to prevent further disturbances, martial law was proclaimed throughout the country.



**CUBA AND PUERTO RICO**, two islands of the West Indies, colonies of Spain.

**Cuba.**—This colony is administered by a Governor-General under the direction of the Spanish Minister of the Colonies, assisted by a Council of Government, the members of which are nominated by the Crown, and which has only advisory powers. The Governor-General may suspend at his discretion the operation of any law or decree of the home Government. Each of the 6 provinces sends 2, and the University of Havana and the Society of Friends of the Country each 1 Senator to the Cortes, and the provinces elect Deputies, 30 altogether, in proportion to their population. There is a governor in each province, and he is assisted by an elective provincial assembly, which has a slight control over local affairs. The area of Cuba is 34,233 square miles, exclusive of the Isle of Pines, which has 810 square miles, and other keys aggregating 970 square miles. The population in 1890, as officially estimated for electoral apportionment, was 1,631,687. The whites constitute 65 per cent. of the population, the remaining 35 per cent. including negroes and colored people of all kinds, with the Chinese, who numbered 43,811 in 1877. Negro slavery was abolished in 1886. Of the white population 35 per cent., and of the colored 12 per cent., can read and write. Havana, the capital, had at the census of 1887 a population of 198,271; Matanzas, 87,760; Santiago de Cuba, 71,307; Cienfuegos, 65,067. The army is limited in time of peace to 20,414 men. The militia, including a black battalion, numbered 63,115 men in 1892. The Governor-General, who is captain-general of the troops, is Alejandro Rodriguez Arias.

**Finances.**—The budget for 1892-'93 estimates the revenue at 21,946,356 pesos (1 peso = about 93 cents), of which 10,554,500 pesos are derived from customs, 5,936,456 pesos from direct and indirect taxes, 3,500,000 pesos from the lottery, 1,662,500 pesos from stamps, 250,000 pesos from Government property, and 42,900 pesos from various sources. The expenditure is estimated at 21,588,842 pesos, of which 10,304,367 pesos are for the general debt, 5,302,488 pesos for the army, 3,139,018 pesos for the interior, 1,089,525 pesos for marine purposes, 715,341 pesos for justice and worship, 568,236 pesos for financial purposes, and 469,867 pesos for construction and maintenance of public works. The public debt is estimated to amount to \$180,000,000.

**Commerce and Production.**—The largest commercial product of the island is sugar, of which 823,096 long tons were produced in 1891, against 675,233 tons (over 28 per cent. of the world's production of cane sugar) in 1890. The production of molasses was 67,000 tons in 1890, and 103,000 tons in 1891. About 300,000 bales of tobacco are produced annually. The island is rich in forests, and also in mineral products, of which iron, manganese, gold, and copper are mined. Asphalt abounds, and on the Isle of Pines fine variegated marble is quarried. The United States imports sugar, tobacco, fruit, and nuts from Cuba, and exports thither lard, flour, dairy products, iron and steel manufactures, wood manufactures and timber, and coal. The largest imports into Cuba are rice, lard, flour, and jerked beef.

**Communications.**—There are about 1,000 miles of railroads, and in 1885 a loan of about \$40,000,000 was authorized for the completion of the network. There are 2,810 miles of telegraphs.

**Puerto Rico.**—The island has an area of 3,550 square miles, and a population of 806,708, of which more than 300,000 are negroes. The Captain-General is assisted by a junta of military officers. There are 3,566 regular troops garrisoned in the island, and a man-of-war is maintained there. The budget for 1892-'93 estimates the revenue at 3,725,597 pesos, of which 2,430,000 pesos are derived from customs, 835,697 pesos from taxes, 285,900 pesos from stamps, 34,000 pesos from Government property, and 140,000 pesos from various sources. The expenditure is estimated at 3,850,135 pesos, of which 1,093,174 pesos are for the general debt, 945,910 pesos for the army, 719,950 pesos for the interior, 461,416 pesos for public works, 309,524 pesos for justice and worship, 208,515 pesos for financial and 111,646 pesos for marine purposes. In 1890, 1,294 vessels, of 1,257,174 tons, entered, and 1,274 vessels, of 1,231,189 tons, cleared Puerto Rico.

**Commerce.**—The principal articles of export in 1889 were: Coffee to the amount of 8,212,886 pesos; sugars, 3,730,586 pesos; tobacco, 1,292,030 pesos. The total imports in 1890 amounted to 18,230,385 pesos, and the exports to 10,710,519 pesos. The colony has about 470 miles of railroads.

**Insurrectionary Outbreak.**—The Cuban clubs in Central America, New York, Florida, and other parts of America were observed to be unusually active in the early part of 1893. The enrollment of these clubs, of about 60 members each, is over 5,000 in the United States alone. In April, 1892, the Cuban Revolutionary party was regularly organized by José Martí and other Cuban exiles, with a council of direction composed of Martí and other resolute men of the younger generation, having Gonzales de Quesada, of New York, for secretary, and Benjamin J. Guerra for treasurer. Behind the organization were all the surviving civil and military leaders of the Cuban revolution, ready to take an active part in another struggle for Cuban independence. There were 61 clubs in Key West, 15 in Tampa, 10 in New York city, 2 in Philadelphia, 2 in Ocala, and New Orleans, Jacksonville, Brooklyn, Boston, Chicago, Atlanta, and St. Augustine had each 1 club; while in Jamaica there were 6, in Mexico 2, in Hayti 1, and others in various parts of Spanish America. The Spanish Government, in the beginning of 1893, as a concession to the Autonomist demand for universal suffrage, carried a law through the Cortes granting the franchise to every male adult Cuban who pays a poll tax of 5 pesos. The Autonomists refused at first to accept the concession, but the leaders yielded under pressure, and resolved to have their party take part in the elections. The result was disappointing, and was attributed by them to official intimidation, corruption, and falsification of returns. From that time the Spanish agents in Central America and in the United States took note of certain signs of extraordinary activity in the circles of Cuban patriots. The Spanish Govern-

ment redoubled its watchfulness and made some increase in the forces in America. The United States Government, on receiving warnings from the Spanish legation, made preparations to patrol the Florida coasts with revenue cutters in order to prevent the departure of filibustering expeditions in violation of the neutrality laws. The Cuban Republican leaders avowed, as they have before, that they were able to give efficient financial support, and also to procure arms and supply men, when the Cubans should rise in a mass to throw off the Spanish yoke, but that no rising would take place until the country was ready for a general revolt and military preparations were made that would insure a successful campaign.

The exiled leaders were taken by surprise when Gen. Manuel Sartorius and his brother Ricardo collected a band in the province of Santiago de Cuba and proclaimed the revolution, and thought at first that the Government had astutely provoked a premature rising by prompting the provincial authorities to persecute these young Republican leaders, or that the latter had been carried away by their impetuosity. Their hope of a general popular revolt, well concerted and planned, was disappointed; but still, if the reports were true that bands were collecting in the districts of Manzanillo, Holguin, Guantanamo, and Las Tunas, and that the Spanish authorities had been taken unprepared and a revolutionary force of 1,500 or 2,000 men was already in possession of the mountainous districts of the eastern province, which had held out against the Spanish army during the whole period of the revolution of 1868-'78, then if Cuba was ripe for independence the co-operation of the exiles would be needed. It turned out that the movement was only the hasty and isolated act of a few individuals. The brothers Sartorius set out from the village of Puernio, near Holguin, on April 24, where they issued their pronunciamiento. Their band of 20 followers was joined by 18 men from Velasco on the following day, and as they marched toward Milas, on the north coast, the number was swelled to 300. Other bands took up arms in various places, but in a hesitating, desultory fashion, without a common plan or leadership. The executive committee of the Autonomist party passed resolutions condemning the outbreak and offering to give the party's moral support to the authorities. The Cuban Senators and Deputies in Madrid, including the Autonomists, expressed their

disapproval of the revolt to the Minister of the Colonies.

The Spanish Captain-General, on April 27, called a council of war, and dispatched troops at once to the rebellious district, and 2 war vessels to guard the coast and intercept the reinforcements and munitions that Sartorius seemed to be expecting from the United States. On April 28 the Governor-General issued a proclamation, in which he declared that, since bands had risen up against the integrity of the territory just when the country was making rapid progress in its material interests and its people were in full enjoyment of all the political rights possessed by any citizens of the Spanish nation, he was disposed to repress the criminal attempt and protect peaceful citizens at any cost, and therefore placed the province of Santiago de Cuba under martial law, but promised exemption from punishment to all rebels who surrendered themselves within eight days. The Government concentrated 4,000 troops in the disturbed district. Seven columns set out in pursuit of the insurgent bands, and strong bodies were kept under arms in Havana and other large places to guard against a spread of the insurrection to new centers. Closely pursued by the troops, the companies of the revolutionists dwindled, until none were left except the original band of Sartorius, reduced to 29 besides the 2 brothers. These finally surrendered on May 2 on the assurance of full pardon. The proclamation of a state of siege in Santiago was revoked on May 9.

**Reform Project.**—The Spanish Minister of the Colonies announced to the Spanish Cortes in the summer of 1893 a legislative project for Cuba that was designed to give partial satisfaction to the Home Rule party, which hopes to see an autonomous Parliament. The provincial councils, to which a semblance of legislative authority in local affairs was given, but no real control over financial expenditures or administrative acts, he proposes to abolish, in order to create one general legislative council for the whole colony, which shall have authority over the Cuban budget and be empowered to enact measures of administrative reform. Although its legislative power and initiative would be circumscribed, the planters, industrialists, and merchants of Cuba expressed their approval of the Government proposal, recognizing any step that brings the budget under control of Cuban representatives as an advance in the direction of legislative autonomy.

## D

**DELAWARE**, a Middle Atlantic State, one of the original thirteen; ratified the Federal Constitution Dec. 7, 1787; area, 2,120 square miles. Population, by the census of 1890, 168,493. Capital, Dover.

**Government.**—The State officers during the year were: Governor, Robert J. Reynolds, Democrat; Secretary of State, David T. Marvel, till Jan. 31, when he resigned to accept the associate judgeship, and was succeeded by John D. Hawkins; Treasurer, Wilbur H. Burnite; Auditor,

John P. Dulaney; Attorney-General, John R. Nicholson; Insurance Commissioner, Isaac N. Fooks; Chancellor, James L. Walcott; Chief Justice of the Supreme Court, Joseph P. Comegys, until Jan. 20, when he retired from the bench; he died on Feb. 1; the Governor appointed as his successor Alfred P. Robinson, who lived but one month after taking the office, dying on Feb. 28; he was succeeded by Charles B. Lore; Associate Justices, Ignatius C. Grubb, Charles M. Cullen, and John W. Houston. Judge



Houston retired Jan. 23, and was succeeded by David T. Marvel, ex-Secretary of State. The bench is entirely Democratic. The resignations of Justices Comegys and Houston were in compliance with a joint resolution of the General Assembly, offering to retire them on pensions of \$2,000 a year for life. Judge Comegys was seventy-nine years of age, and had been Chief Justice since 1876. Judge Houston was seventy-eight, and had served since 1855.

**Finances.**—The following is from the report submitted by the Treasurer to the Legislature in January: Balance in treasury, Dec. 31, 1891, \$29,003.32; receipts from all sources, \$157,090.99; total, \$186,094.31. Total disbursements, \$180,655.26. School fund receipts, \$182,421.55. School fund disbursements, \$138,146.72. Sinking fund—receipts, \$6,078.80; disbursements, \$4,674.80. The report notes, among other things, that, since the appointment of State detectives, who are required to serve requisitions without charge beyond expenses incurred, the cost to the State for this service has been less than one fourth what it was before.

There has been an increase in the revenue derived from the taxation of banks and banking institutions. Changes made by the last General Assembly in the insurance laws have brought about a diminution of about \$3,000 in revenue from that source.

The total assets of the State, both general and school funds, aggregated on Dec. 31, 1892, \$875,092, besides cash on hand amounting to \$56,348.22; the total liabilities on the same date were \$684,750.

The following statistics are from a report of the Treasurer: State debt, less sinking fund, \$887,573; same (county debt), \$618,400; same (municipal), \$1,413,111; total debt, less sinking fund, \$2,919,084. Commercial failures for 1892 number 29; business concerns, 3,862; per cent. of failures, 0.54; liabilities, \$68,100. Deposits in savings banks (1891-'92), \$3,626,319; depositors, 17,318. Wilmington bank clearings, 1892, \$44,573,069.

**Charities.**—The name of "The Delaware State Hospital for the Insane" has been changed to "The Delaware State Hospital at Farnhurst." At the beginning of the second biennial period there were 162 patients in the hospital, 92 males and 70 females. To the present time 199 have been admitted, 127 males and 72 females, making the whole number under treatment 361, males 219 and females 142; 94 were discharged cured, 20 improved, 6 unimproved; 6 were not insane. There were 44 deaths. The whole number discharged was 170, leaving 191 in the hospital Dec. 1, 1892. The daily average population was 187. The expenditure for the two years covered by the last biennial report was about \$52,000.

**Education.**—School statistics as below were given in a report published in March: Estimate of children five to eighteen years, 40,400; enrolled in schools, 19,340; average daily attendance, 12,200; school days, 140; male teachers, 137; female, 291; salaries, \$120,000; total expenditure, \$197,398.

The Board of Education of Wilmington claims that the colored pupils in the public schools should be included in the census of school children required by the new school law,

to provide a basis for the apportionment of the State school fund. The State Treasurer and the Attorney-General deny the claim, on the ground that a law of the State directing the distribution of the fund, recognizes a distinct and separate fund for the support of colored schools in the county, and expressly excepts that fund from its operation. The courts will probably be called upon to decide the question.

The State College, at Newark, had 86 students in the last year, with an attendance of 79. The class graduated numbered 13. There are 10 or 12 instructors. It is conducted at an expense of about \$40,000 a year. Aside from an occasional appropriation for a new building or some extraordinary repairs from the State of Delaware, the college is supported entirely by the National Government, the revenue being derived from three separate funds, the original land grant of 1862, realizing \$4,980 per year; the Hatch Agricultural Experiment Station appropriation of \$15,000 annually; and the Morrill bill, from which \$14,400 is derived this year, making the total from the national Treasury this year \$34,380. In addition to this, \$25,000 was received this year from the State with which to erect the new recitation hall, making a total of State and Government aid for this year \$59,380. Sundry receipts in fees, etc., from the students increase the year's receipts to considerably over \$60,000. The report made at the meeting of the trustees in March showed, notwithstanding, a deficit in the funds of over \$5,000.

The total cost of the new recitation hall was \$25,075.30. In addition to this, \$1,525 was spent in the erection of a wood-working shop, \$612 for alterations to old building, and \$186.93 for sundries, making a total expenditure of \$25,399, or \$399 more than the State appropriation two years ago. Besides this, \$3,773.36 was spent for a new central steam-heating plant, and \$2,500 for an addition to the mechanical department.

The deficit was covered by an appropriation of \$6,000 made by the Legislature.

Of the money received by the college from the General Government, amounting to \$34,380 for the year ending June 30, \$15,000 is for the support and maintenance of the Agricultural Experiment Station. The agricultural course is not very popular, only 2 students having taken it during the year, but the officers of the station teach in the college, and the professors perform duties at the station. The station staff consists of a director and 5 officers. The Morrill fund can not legally be spent for anything aside from apparatus and instruction. Buildings, repairs, and land must be paid for by the State. Students are charged only \$15 a year if they are day scholars, and \$35 if they room in the dormitory, so that instruction is practically free to residents of the State.

In order to make the instruction in agriculture more available to the young farmers of the State, a course has been arranged for the first three months of the year, when they are most at leisure. Five hours a week will be given to the study of soils, farm management, implements, cultivation of crops, fertilizers, and plant structure; four hours to either horticulture or animal husbandry; and six hours to botany, plant diseases, entomology, and veterinary science. Eight

hours in addition will be given to practical work in shops or laboratories.

The professor in charge of the military department reported that the new military regulations were "adding greatly to the possibilities for which his department has been established by the Federal Government. There is a class of about 30 of the students now enrolled in the cadet corps. Among them are the best men in the college. The prospects are that at next graduation the class will show something of material advantage in exchange for the outlay of expense and labor exerted in this direction."

The State College for Colored Students had 17 pupils enrolled for the year, with an average attendance of 13. Besides the president, there is one professor and a teacher for manual training. A farm is connected with the college, which is profitably conducted. Owing to the low state of the finances, the spring term closed on May 15 instead of June 1. The last Legislature made an appropriation of \$1,000 to the college, and although it was represented that the needs of the college men were urgent, and that the appropriation should be made available at once, the resolution that passed provided that the amount appropriated should be paid half in July, 1893, and the remaining half in July, 1894, so that it is not available for present necessities. An appropriation from the United States Government is payable in August.

**Water Ways.**—An inland water way has been begun which is to extend from Lewes, on lower Delaware Bay, to Chincoteague Bay, on the eastern shore of Virginia. It will be 75 miles long. The appropriations amount to \$145,750. Of this sum, \$68,000 has been expended in making a cut between Indian River Bay and Assawaman. It took the whole of the first two appropriations to finish it. The cut was 20 feet wide at bottom and 4 feet deep. The next two appropriations, amounting to about \$75,000, it is proposed to apply to the dredging of a channel 20 feet wide and 4 feet deep from near Ocean City, Md., to Rehoboth Bay. The remainder of the sum will be applied to repairing the cut between Assawaman Bay and Indian River Bay. From Rehoboth the cut will be continued through the highland and marshes to Lewes, or as far as the appropriation will permit.

This inland water way, by producing a current through the bays, makes available an area of 40 square miles of oyster ground in Chincoteague Bay alone, while the bays to the north, including Indian River and Rehoboth, will add nearly as much more, making altogether 75 square miles, capable of accommodating, at present rate of planting, 40,000,000 bushels of oyster plant, worth at present price at landings \$20,000,000.

Other appropriations for river and harbor improvements include \$40,000 for Wilmington harbor, to deepen the channel; \$5,000 for Appoquinimink river, toward cutting a channel 8 feet deep at low water and 100 feet wide at the mouth and above, the whole cost of which improvement will be \$39,000; \$18,000 for improvement of Smyrna river, the estimated cost of which is \$90,000; \$12,000 for Mispillion river, estimated to cost in the end \$20,000; and \$7,000 for Murderkill river, on improvements estimated at \$47,000. The channel of Broad Creek river

is to be deepened from Bethel to Laurel, the work to cost about \$15,000.

**Railroads.**—Work was begun in October on the Wilmington and Chester Electric Railway, which is to give Wilmington direct communication with Philadelphia. It is expected to be in running order by midsummer. There will be a connecting link from the river front at Gordon Heights, and a track from Edgemoor.

The number of miles of railroad in operation in 1891 was 333; capital stock, \$7,657,858; funded debt, \$7,137,500; total investment, \$15,134,194; cost of equipment, \$112,347,873; passenger earnings, \$4,472,237; freight, \$11,481,018; net earnings, \$6,038,311; interest paid on bonds, \$4,006,577; dividend paid on stocks, \$485,547.

**Agriculture.**—The report of peaches shipped by way of the Pennsylvania Railroad this year was given as follows in September: The Pennsylvania Railroad has carried more peaches this year than in any year since 1875. The Delaware district has shipped more even than in that year. The quantity shipped from points on the Delaware division up to the end of the week ending Sept. 16 aggregated 3,720,000 baskets or 6,200 cars. On Aug. 30 321 cars were shipped. The number of baskets shipped to various cities is reported as follows: New York, 676,200 baskets; Philadelphia, 587,400; Boston, 244,800; Wilmington, 151,800; Pittsburg, 68,000; Cleveland, 49,200; Chester, 40,600; Buffalo, 47,400; Providence, 34,200.

The increase in the yield is perhaps proportionately greater even than appears, because, from careful estimates made in July, it seems that the number of trees on the Peninsula has decreased since 1890 by nearly 2,000,000. The number from which shipments were made by rail in 1890 was estimated at 7,911,248, and in 1893 at 6,010,691. Those along the water courses were estimated this year at about 1,500,000.

The strawberry crop was not as profitable as usual this year, owing not to lack of yield but to other causes. The first week the berries were injured by the incessant rains; the second week extreme heat caused the market to be overstocked. The prices were unusually low. "The 'nonreturnable' crate," says a newspaper correspondent, "has been a great loss to the berry growers this year, as a number have lost from 75 to 100 of the 'standard' crates, which represent an outlay of \$40 to \$50."

From a treasury report the statistics following are taken for 1893: Number of farm animals in the State—horses, 25,553, value, \$2,049,814; mules, 4,826, value, \$491,549; milch cows, 31,330, value, \$757,246; oxen, 27,941, value, \$635,396; sheep, 13,551, value, \$48,987; swine, 521,167, value, \$365,167.

**Shipbuilding.**—Of the 9 new-type boats built during 1892, 5 were done in Wilmington, three firms having been employed.

**The State Line.**—The boundary between Delaware and Pennsylvania, as newly surveyed, was adopted and fixed by resolution of the joint commission April 11, and the setting of the boundary stones was finished April 26. The new land assigned to Delaware includes a port of entry of considerable importance, known as "The Hook," from the name of the Pennsylvania



borough, Marcus Hook, to which it formerly belonged. The export is mainly crude and refined petroleum in bulk and barrels, large cargoes of which are carried away by British, Italian, German, and Spanish vessels.

**Quarantine Station.**—A commission was appointed in Pennsylvania to select the best available quarantine site, and the Governor of Delaware appointed a committee to confer with it. It was proposed to remove to the site selected the Pennsylvania Lazaretto from its location above Chester and provide a place for quarantining vessels liable to bring infectious diseases to the cities and towns upon the Delaware river and bay. Several possible sites were examined, and Reedy Island was finally chosen, and a disinfecting plant was placed there in the summer, on a wharf built out about 1,500 feet from the island.

**Legislative.**—The biennial session of the Legislature began Jan. 3 and ended May 5. Hon. George Gray was re-elected to the United States Senate. The most important work, perhaps, was the ratification of the constitutional amendment with respect to taking the sense of the people on the question of calling a constitutional convention. It is now in the power of the people to call a convention by their votes at any general election, and there is no doubt that at the election of 1894 a convention will be ordered.

A measure changing the method of appointment of the police commission of Wilmington met with great opposition from Republicans. It was designed to take from the mayor all participation in the appointments, and give them to persons selected by the Governor. The change was justified by reference to a scandal in which the chief, a captain, and a sergeant of police were involved, and which was secretly investigated by the mayor and a police commissioner with the result of acquittal of the chief. The bill passed in spite of the opposition, which was not entirely from Republicans, others opposing it on the ground that it interfered with the city's right to self-government. It named a new board of three, who are to hold office for two, four, and six years respectively. Their successors are to be appointed by the Governor for six-year terms, but the board may fill vacancies for unexpired terms. The commissioners must swear, among other things, that in every appointment or removal they will be guided by no cause other than fitness or unfitness, qualification or disqualification.

The inheritance-tax law, which was repealed by a former Legislature, was revived, including the collateral-inheritance-tax clauses.

The State registration law was amended in reference to the oath required of a man appointed an alternate registrar that he will not be a candidate at the election, although he is appointed six months before it. This oath is done away with, and the alternate registrar may resign his appointment to become a candidate.

A bill was passed in regard to Roman Catholic congregations, having for its object to relieve the bishop of personal responsibility in the management and control of church property, and to avoid the trouble and expense of administering upon such property in the event of the death of the bishop. At present such church property as comes under the control of a new bishop is forth-

with devised by him, by will, to be held by a third party in trust for his successor, in the event of his decease. This provision for an interregnum is obviated by the new law, which creates a corporation for each parish, the corporation being a continuing body.

The first step was taken toward an amendment to the Constitution vesting in the courts exclusive power of granting divorces, but for the causes and conditions prescribed by the Legislature. If all divorce cases were thus turned over to the courts the work of the Legislature would be materially lightened and the sessions might be shorter. No fewer than 50 divorces were granted at this session.

The Delaware Pneumatic Tube and Delivery Company was incorporated. Its capital stock is to be \$100,000, divided into 4,000 shares of \$25 each. This concern will carry parcels, liquids, etc., and, it is said, will ship peaches from Sussex County to Philadelphia at the rate of 5 cents a basket.

The liquor law was so amended as to allow retailers to sell liquor in quantities from one quart to one gallon to be drunk off the premises, and to sell in quantities less than one quart to be drunk on the premises.

New Castle County was authorized to issue bonds, \$100,000 to build a bridge at Washington Street, Wilmington, and \$60,000 to redeem outstanding county indebtedness.

A reapportionment of the school fund of the same county was provided for, which will give Wilmington about \$30,000 per annum for schools, instead of \$13,000, as at present.

The Wilmington municipal elections were transferred to the control of the State Board of Elections. This is to regulate the time and manner of city elections, and will allow each city council to select the clerk, bailiff, and other officials who are to serve under it.

Among other acts were the following:

Permitting persons accused of crime to testify in their own behalf.

Making it unlawful to use barbed wire in a division fence except by mutual consent of the owners of the property divided.

Incorporating the Humane Society of Delaware.

Appropriating \$6,000 for the support of Delaware College, and \$1,000 for the colored college.

Repealing all statutes relating to planting, propagating, dredging, tonging, or taking oysters from the natural beds in Delaware Bay.

Declaring Labor Day a legal holiday.

Making Saturday, from June to September inclusive, a legal half holiday for banking and trust company purposes.

Incorporating the Delaware Industrial School for Girls.

Providing protection for associations and unions of workmen and persons in their labels, trade-marks, and forms of advertising.

Repealing the law authorizing the levy courts to appropriate \$5 a year to every Sunday school.

Providing for more fully effecting the endowment and support of colleges for the benefit of agriculture and the mechanic arts.

To prevent the accomplishment of frauds upon the General Assembly by means of deception and tricky amendments or additions to acts.

**Delaware at the World's Fair.**—Considerable criticism was indulged in by people of the State during the summer on the building

and exhibit at the fair; but in view of the appropriation (\$20,000) a very fair showing appears to have been made. The State day was celebrated on Aug. 23, in connection with that of West Virginia, at Festival Hall. The badge bore the device of the famous "blue hen and her chickens." After the reception 500 baskets of Delaware peaches were distributed.

**The Old Swedes' Church.**—In June was celebrated the two hundred and fifty-fifth anniversary of the organization of this church, and the one hundred and ninety-fifth of the dedication of the building, the oldest church in the Eastern States. With the dying out of many of the families interested in the church, and the removal of others, the building was in danger of falling to decay. In view of this fact, and with the purpose of reviving interest in the preservation of the church, and also of benefiting the neighborhood, a fund has been raised for the purpose of erecting on the grounds a parish building, to be used by the Sunday schools of the church and as a club-room for young men of that part of the city.

**DENMARK**, a kingdom in northern Europe. The legislative authority is vested in the Rigsdag, composed of the Landsting and the Folkething. The former consists of 66 members, of whom 12 are life members appointed by the King, and the rest are elected by indirect vote of the people for eight years, one half of the members going out every four years. The Folkething is composed of 102 members, elected for three years by direct universal suffrage, the representation being 1 deputy to every 16,000 inhabitants. The sessions of the Rigsdag are held annually at Copenhagen.

The reigning sovereign is Christian IX, born April 8, 1818, who succeeded to the throne on the death of King Frederik VII, Nov. 15, 1863. The heir-apparent is Prince Frederik, born June 3, 1843. The Statsraadet, or State Council, was composed of the following members in the beginning of 1893: President of the Council and Minister of Finance, Jacob Broennum Scavenius Estrup, appointed June 11, 1875; Minister of the Interior, H. P. Ingerslev; Minister of Justice and for Iceland, J. M. V. Nellesmann; Minister of Foreign Affairs, Baron Reedtz-Thott; Minister of War, Gen. J. J. Bahnsen; Minister of Marine, Commander N. F. Ravn; Minister of Public Instruction and Ecclesiastical Affairs, A. H. Goos.

**Area and Population.**—The area of Denmark is 15,289 square miles, and the population, according to the census taken on Feb. 1, 1890, was 2,185,335. Of the total population, excluding the inhabitants of the Färöe Islands, 1,059,322 were males and 1,112,983 females. In 1890 there were 14,975 marriages, 68,111 births, and 43,112 deaths, the surplus of births being 24,999. In 1890, 10,298 persons emigrated, while in 1891 the number was 10,382, the United States being the place of destination in most cases. The principal cities are Copenhagen, with a population of 375,719, including the suburbs; Aarhus, with 33,308; and Odense, with 30,277.

**Finance.**—The revenue in 1891 was 56,811,602 kroner (1 krone = 27 cents), and the expenditure 66,287,089 kroner. For 1892 the figures were 54,683,727 and 58,578,341 kroner respectively.

The budget for 1893-'94 estimates the revenue at 55,531,618 kroner, of which 37,609,000 kroner are derived from customs, excise, and other indirect taxes, 9,763,500 kroner from direct taxes, 4,515,716 kroner from interest on assets of the Government, 1,314,671 kroner from receipts from property and the sinking fund, 1,000,000 kroner from profits of public lotteries, 767,406 kroner from profits of domains, 522,546 kroner from separate revenues, and 38,778 kroner from the revenue of the Färöe Islands. The expenditure is estimated at 54,228,658 kroner, of which 10,631,950 kroner is for the Ministry of War, 6,722,180 kroner for interest and expenses of the public debt, 6,690,726 kroner for the Ministry of Marine, 5,227,946 kroner for the Ministry of the Interior, 5,133,702 kroner for extraordinary state expenditure, 3,935,557 kroner for the Ministry of Justice, 3,625,449 kroner for the Ministry of Public Worship and Instruction, 3,516,304 kroner for the Ministry of Finance, 3,453,742 kroner for improvement of the state property and reduction of the debt, 3,310,967 kroner for pensions and the military invalid fund, 1,155,200 kroner for the civil list and appanages, 429,656 kroner for the Ministry of Foreign Affairs, 306,616 kroner for the Rigsdag and the Council of State, and 88,664 kroner for Iceland.

The public debt, on March 31, 1891, amounted to 186,610,992 kroner. Of this amount 10,294,250 kroner represented the foreign debt, bearing 4 per cent. interest. The internal debt bears mostly  $3\frac{1}{2}$  per cent. interest. The assets of the state, including the reserve fund, amounted to 68,826,059 kroner.

**The Army.**—Service in the army is compulsory, beginning with the age of twenty-two, when all able-bodied men are enrolled in the regular army and its reserve for a term of eight years; they form part of the extra reserve for another eight years. The soldiers have to undergo a drill, lasting six months for the infantry, five months for the field artillery and engineers, and nine months and two weeks for the cavalry. A second term of practice is provided for those who are not proficient after their first term has ended. Besides the preliminary training there is an annual drill lasting from four to six weeks. The annual conscription numbers 11,000 men. The army consists of 31 battalions of infantry, 5 regiments of cavalry, 2 regiments of field artillery, 2 battalions of fortress artillery, and 1 regiment of engineers. Besides these there are 11 reserve battalions of infantry, 4 batteries of field artillery, and 5 companies of fortress artillery. The strength of the army in 1892 was 1,201 officers and 41,749 men. The war strength of Denmark is about 60,000 men, not including the extra reserve, which is only to be called out in special emergencies, and numbers 16,500 officers and men.

**The Navy.**—The Danish navy consisted in 1892 of 1 sea-going armor-clad, 8 coast-defense armor-clads, 4 protected cruisers, 1 torpedo ship, 4 sea-going torpedo boats, 5 first-class torpedo boats, 10 second-class torpedo boats, 20 unarmored vessels of various kinds, and 16 transports. There are under construction 1 protected cruiser and 1 sea-going torpedo boat.

**Commerce.**—The value of imports in 1891 was 334,613,378 kroner, and that of the exports



249,033,125 kroner. Of the different classes of goods, articles of food rank highest, the imports amounting to 130,900,000 kroner, and the exports to 197,200,000 kroner; raw products come next, the figures being 108,800,000 kroner and 25,600,000 respectively; manufactured articles third, the imports amounting to 71,700,000 kroner, and the exports to 13,300,000 kroner; and lastly means of production, of which the imports were valued at 23,200,000 kroner, and the exports at 12,900,000 kroner. The following table shows the values in kroner of the principal classes of imports and exports for 1891:

CLASSES OF ARTICLES.	Imports.	Exports.
Pork, butter, eggs, lard .....	23,640,563	123,101,309
Cereals .....	42,423,268	17,499,693
Animals .....	6,023,370	45,669,690
Textile manufactures .....	39,572,377	5,120,352
Colonial goods .....	29,515,324	7,615,992
Metals and hardware .....	30,517,240	4,792,321
Coal .....	23,255,172	2,519,455
Wood and manufactures .....	17,656,800	3,233,252
Drinks .....	4,954,330	2,213,315

The trade with the principal foreign countries in 1891, in kroner, is set forth in the following table:

COUNTRIES.	Imports.	Exports.
Great Britain .....	69,032,205	132,188,623
Germany .....	110,694,756	63,176,181
Sweden and Norway .....	52,807,841	31,831,904
Russia .....	35,748,894	2,720,607
United States .....	19,434,307	2,253,512
France .....	9,332,316	2,372,617
Holland .....	7,652,363	504,723
Belgium .....	6,792,603	1,321,332
America, exclusive of United States .....	633,116	45,150
Danish colonies .....	3,587,635	4,416,900

**Navigation.**—During 1891 there were 58,516 vessels, of 2,629,603 tons, entered, of which 15,719 were coasting vessels, of 203,622 tons, 14,045 coasting steamers, of 336,944 tons, 16,700 ocean sailing vessels, of 183,479 tons, and 14,219 ocean steamers, of 1,404,529 tons. There were cleared 59,663 vessels, of 1,073,904 tons. The merchant marine, including the colonies, on Jan. 1, 1892, numbered 3,607 vessels, of 310,952 tons, of which 353 were steamers, of 117,054 tons.

**Communications.**—In 1891 there were 1,247 miles of railroads open for traffic, about 1,000 miles of which were owned by the State. Up to March 31, 1890, the Government had expended 164,141,474 kroner for the construction of its railroads.

In 1890 the post-office forwarded 50,671,000 letters and postal cards, and 4,796,000 samples and printed matter.

At the end of 1891 there were 3,674 miles of telegraph lines in Denmark, with 10,280 miles of wire. The Government owned 2,816 miles of lines. During 1891 there were 625,940 domestic, 1,002,637 international, and 37,560 official messages transmitted.

**Dependencies.**—The Danish colonies consist of Iceland, Greenland, and the Danish Antilles. (For the latter, see the article on the WEST INDIES in this volume.) Iceland has an area of 39,756 square miles, with a population in 1890 of 70,927. Greenland has an area of about 46,740 square miles, and a population of 10,516 inhabitants. The value of imports from Greenland

into Denmark in 1891 amounted to 502,013 kroner, and the exports from Denmark into Greenland to 417,554 kroner.

A new constitution for Iceland, establishing home rule in a fuller measure than before, was signed by the King on Jan. 5, 1893, and went into force on Aug. 1. Iceland will possess its own Legislature and administration for all local affairs. The legislative authority rests in the hands of the King and the Icelandic national representative body, the Althing, and the executive power in the hands of the King alone. Having no representation in the Danish Rigsdag, Iceland will contribute nothing to the revenues of the General Government. A secretary for Iceland in Copenhagen is responsible for the maintenance of the new constitution. The King nominates a governor for the northern island, and if the Althing complains of any acts of the governor the King will decide how he is to be brought to account. The Althing will henceforth consist of 2 houses—the upper house, composed of 6 members nominated by the Crown, and 6 chosen by the other house; the lower one, of 36 members, of whom 30 are elected by the people, and 6 are named by the King.

**Politics and Legislation.**—There were grounds for expecting in 1893 an amelioration of the abnormal situation that has existed for years in Denmark, where the Estrup ministry has governed unconstitutionally, levying imposts that are rejected by the Folkething, and applying a budget that receives the approval of only one of the chambers of the Rigsdag. The Opposition in Parliament seemed to have become less uncompromising, and the Cabinet appeared to show a more conciliatory disposition and a willingness to make concessions. The Moderate Liberals had separated from the Radicals and the Socialists, and in the last elections the Radicals had lost their majority. In the previous session the ministry had profited by this situation, and had carried various useful bills by the aid of the Moderates. One of the leaders of the Moderate group, Claus Berntsen, arranged a plan of reconciliation, by which the conflict of ten years would be ended with a bill of indemnity for the financial irregularities of the Cabinet. Other Liberals were less disposed to capitulate, and when they demanded reductions in the budget, notably in the military estimates, which the ministry would not accede to, the negotiations were broken off, and the Folkething again separated on April 1 without having voted the budget, which was consequently adopted only by the Landsting and promulgated by executive decree in the form of a provisional financial law. The ministry offered to make considerable retrenchments if the Folkething would pass a bill of indemnity legalizing the provisional laws of past years, and a majority was found to approve such a compromise, when the Minister of War made new demands for the partial reorganization and refused to modify his project for the fortification of Copenhagen on the land side.

In the spring a new agrarian party was organized in Fünen and Jutland, which has for its main objects the reduction of protective duties and the revision of the law relating to agricultural laborers.

**DISASTERS IN 1893.** A general survey of disasters during the year shows that storms were unusually frequent and disastrous. In the United States the hurricanes of August and September were quite unprecedented in our annals, and throughout the "tornado belt," in the middle section of the continent, wind storms followed one another with appalling violence and fatal results. Conspicuous among preventable shipwrecks was the loss of the British battle ship *Victoria*, and the most notable group of train accidents was consequent upon the culpable overcrowding of railways during the closing weeks of the Chicago fair. No general list of miscellaneous disasters can, under existing conditions, be more than approximately full and accurate. Current statements and estimates of the daily press must ordinarily be accepted as final. That they are often liable to be at fault is unavoidable. The nearest approach to official accuracy is in the monthly and yearly summaries of train accidents, for which credit is due to "The Railway Gazette."

**January 1.** Avalanche: Washington (State), snow-plow wrecked, 4 killed.

3. Severe cold in Europe, railways blockaded.

4. Explosion: natural gas, Chicago, several firemen injured; another in a Russian mine, 15 killed.

6. An ice gorge breaks in the Ohio river at Cincinnati; many steamboats and other river craft destroyed.

7. Explosion: natural gas, Pittsburg, Pa., 3 killed, 4 hurt.

8. Another destructive ice gorge in the Ohio at Cincinnati.

10. Mining accident at Penzance, Cornwall, 30 drowned. Colliery explosion, Como, Col., 24 killed.

12. Snow, ice, and intense cold interrupt business all over the Northern States.

13. Train wrecked in Iowa, 2 killed, several hurt; collision near Chicago, many hurt, some fatally.

15. An ice gorge (the first on record) forms in the Mississippi at Memphis, Tenn. Trains in collision on the Congo Railway, Africa; dynamite explodes, 50 killed. Disastrous storm in England, many shipwrecks.

16. A building falls in Philadelphia, 3 killed; fire in Philadelphia, several fatally injured.

17. Fire on a Russian railway transport train, 45 soldiers perish, 20 hurt.

18. Railway accident at grade crossing near R. I., 8 killed, many hurt. Collision of fire engines at Evansville, Ind., 3 firemen killed, several hurt. Many deaths are reported as the result of extreme cold.

20. Train wrecked at Peru, Ind., bridge breaks, 2 killed, 7 hurt. Severe cold in Mississippi, much suffering at extreme southern points.

21. Trains in collision near Alton, Ill., 9 killed, 12 fatally hurt, and nearly 100 others more or less burned by blazing oil; train wrecked near Harrisburg, Pa., 7 hurt.

22. Explosion: oil, Wann, Ill., 5 killed, 16 hurt.

25. Collision at sea: British steamer *Cincona* sunk by German bark *Lake Ontario* in the English Channel.

27. Explosions: a kerosene lamp, in Brooklyn, N. Y., 3 fatally burned; fire damp in a Hungarian coal mine, 80 killed.

28. Train wrecked in Illinois, 1 killed, many hurt.

Summary of train accidents in January: 104 collisions, 157 derailments, 12 miscellaneous; total, 273. Killed, 38 employees, 11 passengers; total, 49. Hurt, 170 employees, 155 passengers, 4 trespassers; total, 329.

**February 1.** Earthquake and tidal wave on the Island of Zante, many lives lost, much property destroyed.

4. Train wrecked near Syracuse, N. Y., 4 killed, 2 hurt. Explosion: boiler bursts, Belleville, Ill., 3 killed.

5. Floods in Queensland, many drowned, enormous loss of property.

7. Shipwreck: Norwegian bark *Alice* ashore on Long Beach, N. J., 5 sailors drowned.

8. Train wrecked near Passo, Ill., 1 killed, 30 hurt. Fire: Kansas City, 4 lives lost. Shipwreck: British steamer *Trinaeria*, off the coast of Spain, 37 lives lost.

9. Fires: Dover, N. H., insane asylum burned, 44 lives lost; Cincinnati, 4 lives lost.

11. Landslide near West Rutland, Vt., 12 killed, many hurt. Disastrous ice gorges in many rivers. Disastrous storm at sea; British steamer *Pomerania* encounters an enormous wave in midocean, the captain, 2 officers, 4 of the crew, and 5 passengers lose their lives.

12. Unprecedented cold in the Northwest. More earthquake shocks in the island of Zante.

15. Electric car wrecked in Portland, Ore., 3 killed, 25 hurt.

13. Accident at a festival in Buda-Pesth, 20 killed, many hurt. Hurricane in Madagascar, great destruction of life and property.

18. Heavy snow in the Atlantic States, railway traffic blocked for many hours.

19. Destructive floods recur in Queensland.

20. Severe storm off the coast of Scotland, many fishermen perish.

21. Train wrecked near Palmyra, N. Y., 3 killed, 12 hurt. Mine explosion in Styria, 15 killed, 20 hurt.

22. Trains in collision near Philadelphia, 4 killed, 16 hurt. Train wrecked near Columbia City, Ind., 1 killed, 15 hurt. Shipwreck off Cuttyhunk Island, Mass., 5 volunteer life savers drowned in trying to rescue the imperiled crew.

28. Fire and falling walls in Chicago, 8 killed, 4 hurt. During the month the British steamer *Naronie* was lost at sea with all hands, about 70 men. No trace of her found save a floating lifeboat.

Summary of train accidents in February: 84 collisions, 117 derailments, 13 miscellaneous; total, 214. Killed: 45 employees, 12 passengers, 2 trespassers; total, 59. Hurt: 127 employees, 172 passengers, 4 trespassers; total, 303.

**March 1.** Fire: dwelling house, Greenville, Ky., 5 lives lost.

3. Fire: New York, 5 children perish. Cyclone: Avoyelles Parish, La., 2 killed, many hurt. Collision at sea: bark *Cacique* sunk, 13 lives lost.

4. Several tornadoes in the South, some loss of life, much damage to property.

5. Landslide near Sandgate, England, the ground sinks several feet, damaging 200 houses.

6. Hurricane in Madagascar: 10 vessels sink in the harbor of Tamatay, much loss of property and destruction of human life.

7. Several severe earthquake shocks in Oregon. Cyclone in Mississippi, more than 300 families homeless.

8. Earthquake shocks in New York and Long Island.

10. Destructive fire in Boston, several squares burned, estimated loss, \$4,500,000, much distress caused and many lives lost.

11. Ice gorges and destructive floods in many rivers.

14. Explosion in coal mine at Ardmore, Indian Territory, 9 killed, many hurt.

15. Violent electrical storms in the Eastern States. A building falls in Chicago, 2 killed, several hurt.

16. Trains in collision near Lackawaxen, Pa., 10 hurt, several fatally. Fire: Paterson, N. J., 2 killed, many firemen injured.

18. Fire: Milwaukee, Wis., estimated loss, \$500,000.

19. Fires: Boston, Tremont Temple burned, loss, \$375,000; St. Sebastian, Spain, 22 killed.

21. Fire and explosion: Litchfield, Ill., 1 killed, much damage done.

23. Tornado: Mississippi, several towns destroyed, estimated damage, \$2,000,000; at least 18 lives were lost, hundreds injured. Violent wind storms in Minnesota, South Dakota, and Wisconsin. Fires: Cleveland, Ohio, 4 lives lost; Purvis, Miss., probably the work of negro incendiaries, the town nearly destroyed.



24. Earthquake: Colombia, several lives lost, many houses wrecked.

29. Fire: Kaernten, Germany, 2 churches and 65 houses burned, 15 lives lost, many hurt.

Summary of train accidents in March: 72 collisions, 102 derailments, 12 miscellaneous; total, 186. Killed: 36 employees, 4 passengers; total, 40. Hurt: 71 employees, 113 passengers, 1 trespasser; total, 185.

April 1. Fire: Bradford, Pa., many killed and hurt. Mine explosion: Shamokin, Pa., 10 killed. Train derailed: Denver, Col., about 20 hurt. Fire in Manilla, 4,000 houses burned, many lives lost.

2. Boiler explosion: Indianola, Iowa, 4 killed.

3. Sailboat upsets on Lake Pontchartrain, La., 4 drowned. Fire: Maywood, N. J., 5 lives lost. Mining accident: Hazleton, Pa., 5 drowned.

4. Fire at sea: ship King James burned off San Francisco, nearly half the crew lost.

5. Shipwreck: steam yacht of the Sultan sinks near Constantinople, 60 lives lost.

7. Severe wind storms in the Western States, and a destructive tidal wave in Lake Michigan near Chicago; some of the World's Fair buildings damaged, other buildings blown down. Extensive prairie fires rage in Nebraska. Building falls at Romeo, Ill., 9 killed, 6 hurt.

8. Widespread damage by prairie fires in several Western States; tornado in western New York, devastating a wide tract of country.

9. Earthquake in Serbia, several lives lost, many buildings wrecked. An ærolite breaks the arm of a bronze statue to John Brown, of Ossawatimie, in Kansas City.

11. Cyclone in southern Kansas: towns of Everest, Willis, and Powhatan nearly destroyed, several killed, and many hurt. Many earthquake shocks reported in the San Fernando mountains, Cal. Colliery explosion in Wales, 53 killed.

12. Destructive storms in the West, 64 killed, hundreds hurt. Fire in Brooklyn, N. Y., 3 lives lost.

17. Trains in collision near Farwell, Mich., 2 killed, several hurt. More earthquakes in Zante, additional lives lost.

18. Explosions: nitroglycerin at Lima, Ohio, several killed; in the Rusk-Ivanhoe tunnel, near Leadville, Col., 4 killed, several hurt. Destructive tornadoes in several Western States; 7 killed, many hurt, at Boies, Ark.

19. Cyclone at Osage City, Kan., many buildings destroyed, several persons killed. Earthquakes continue in the Island of Zante; scarcely any houses remain habitable.

20. A terrific storm rages over a wide tract of country from the Rocky mountains to the Lakes; the city of Milwaukee badly damaged, and a score of lives lost; the World's Fair buildings at Chicago suffered considerably.

21. Mining accident at Butte, Mont., 9 killed.

20. Fire at Wardner, Ida., business houses burned, estimated loss, \$650,000.

23. Fire at Hull, England, supposed to be incendiary, loss, about \$2,500,000.

25. Trains in collision near Somerset, Pa., 5 killed, many hurt. Fire in a Chicago armory, 2 lives lost.

26. Tornado: Oklahoma Territory, about 90 killed, 250 hurt, some fatally, and much damage done, all within a few minutes.

29. Tornado in Texas, the town of Cisco destroyed, many killed and hurt; another tornado near Ponca Agency, Indian Territory, 5 killed.

30. Fire in Burlington, Iowa, 6 lives lost.

Summary of train accidents in April: 72 collisions, 92 derailments, 9 miscellaneous; total, 173. Killed: 33 employees, 2 passengers; total, 35. Hurt: 93 employees, 23 passengers, 6 trespassers; total, 122.

May 1. Disastrous floods in the Mississippi river. Shipwreck: an Arab *dhow* capsizes off the coast of Africa, 120 negro slaves drowned.

3. Explosion: dynamite, Eel River Station, Ind., 3 killed. Fire: Louisville, Ky., several buildings burned, estimated loss, \$300,000.

4. Severe gale along the Atlantic coast, several vessels lost and seamen drowned. Fire at sea: British steamer Khiva burned off the coast of Arabia, all hands lost.

6. Train wrecked near Lafayette, Ind., 10 killed, many hurt. Destructive storms all over the Northern States.

7. Train wrecked at Lafayette, Ind., 10 killed, many hurt; cause, failure of the air brake. Explosion: steam boiler on the Mississippi river, 12 killed, many hurt. Tornado near Gainesville, Texas, a railroad train blown from the track and wrecked.

8. Destructive gale in Arkansas.

13. Explosion: locomotive boiler at Lebanon, Pa., 2 killed, several hurt.

14. Mining accident: Calumet and Hecla mine, Michigan, 16 killed. Collision at sea: ship Countess Evelyn sunk by steamer City of Hamburg off Cornwall, 25 lives lost.

16. Floods in the Mississippi: levees give way in several places in Arkansas and Louisiana.

17. A storm of great violence on Lake Erie, more than 20 lives lost, including a United States life-saving crew, drowned in attempting to rescue shipwrecked sailors. Explosion in a factory at Geneva, Ill., 6 killed. Two more crevasses reported in the Mississippi.

18. Heavy rains in western Pennsylvania and eastern Ohio cause great damage to railroads, estimated at \$1,000,000.

20. Faulty construction: a floor gives way in a building at the World's Fair, 9 women very badly hurt, many injured. Fire: Saginaw, Mich., more than 200 houses burned, loss, \$1,000,000.

21. Extended forest fires in Michigan, 12 lives lost.

22. Shipwreck: Brazilian man-of-war Almirante Barossa.

23. Tornadoes: Ohio, Michigan, Indiana, and Kentucky, much damage to property; 3 killed and several hurt at Cleveland. Landslides in Norway, more than 100 people killed.

28. Fire: Baltimore, Md., sugar refinery burned, estimated loss, \$1,000,000.

Summary of train accidents in May: 123 collisions, 106 derailments, 5 miscellaneous; total, 235. Killed: 39 employees, 6 passengers, 21 trespassers; total, 66. Hurt: 94 employees, 67 passengers, 14 trespassers; total, 175.

June 1. Fire: New York city, 5 lives lost; colliery fire, Fuente, Mexico, 60 lives lost.

5. Lightning: 3 killed near Frankfort, Ky. Shipwreck: German steamer Kaiser Wilhelm II sinks at her wharf at Genoa.

7. Fire: Fargo, N. Dak., estimated loss, \$3,000,000. Floods in Austria, 50 villages destroyed. Collision at sea: steamer Serbia sinks ship A. McCullum, 1 life lost.

9. Faulty construction: Ford's Theater falls in Washington, D. C., 21 killed, 68 hurt.

13. Fire: New York city, 4 killed, many hurt.

14. Severe thunderstorm in western Missouri, many buildings struck by lightning, 4 killed, 4 hurt.

17. Numerous breaks occur in the Mississippi levees near New Orleans.

18. Fire: Mesaba Range, Minn., several thousand people homeless, estimated damage, \$1,000,000.

20. Fire: Tillamook, Ore., business houses burned. Train wrecked near New York city, 7 killed, many hurt. Earthquake in parts of Georgia and the Carolinas; very severe heat.

21. Fire: Duluth, Minn., 4 lives lost. Lightning: a circus tent struck at River Falls, Wis., 7 killed, many hurt. Train wrecked near Prospect, Ohio, 3 killed, several hurt. Explosion: benzine, Odessa, Russia, 16 killed.

22. Tornado: eastern Kansas, 16 killed, many hurt; violent storms in other neighboring States.

23. Collision at sea: British battle ship Victoria sunk by the Camperdown while manœvering in the Mediterranean, 400 lives lost.

24. Train wrecked near Paterson, N. J., 5 killed.

26. The Tremont Hotel, Fort Scott, Kan., falls, several lives lost, many injured.

Summary of train accidents in June: 72 collisions; 96 derailments, 5 miscellaneous; total, 173. Killed: 25 employees, 7 passengers, 8 trespassers; total, 40. Hurt: 104 employees, 81 passengers, 15 trespassers; total, 200.

**July 4.** Explosion: Ann Arbor, Mich., a small cannon bursts, injuring several firemen. Many minor accidents, fires, and injuries from the carelessness with fireworks. Drowned: 4 men at Carson, Nev. Explosion: firedamp in a colliery at Thornhill, Yorkshire, England, more than 100 probably killed.

5. Hailstorm: eastern Pennsylvania, great damage to crops and buildings, many lives lost. Lightning: house struck at Fostoria, Mich., 5 killed.

6. Gale in Iowa: the town of Pomeroy almost totally destroyed, scarcely a house left standing, 53 killed, 75 perhaps fatally injured.

8. Several deaths reported from lightning, widespread damage by thunderstorms.

10. Fire in the cold-storage warehouse at the World's Fair, Chicago, 16 firemen perish.

12. Fire: Princeton, Ind., business houses burned. Earthquake: Albuquerque, New Mexico, two shocks reported. Accident at grade crossing near Springhill, W. Va., 3 killed. Train wrecked near Newburg, N. Y., 5 killed, several hurt.

15. Lightning: one soldier killed and several hurt at the Wisconsin State Camp.

17. Train accident: Chicago, horse car run down, 4 killed, many hurt. Fire in London, estimated loss, \$7,500,000.

18. Destructive tornado in Piedmont.

19. Excursion train of Sunday school scholars wrecked at East Aurora, N. Y., about 20 hurt.

20. Explosion: a can of naphtha in Brooklyn, N. Y., 4 killed.

23. Destructive forest fires in New Hampshire and Wyoming.

25. Train wrecked at Akron, Ohio, 30 hurt.

26. Violent thunderstorm in New England and the Central States.

31. Destructive thunderstorms in Ohio and West Virginia.

Summary of train accidents in July: 89 collisions, 87 derailments, 5 miscellaneous; total, 181. Killed: 36 employees, 10 passengers, 12 trespassers; total, 58. Hurt: 79 employees, 86 passengers, 11 trespassers; total, 176.

**August 3.** Explosion on the German war ship *Ledan*, 9 killed.

4. Steamer sinks on Lake George, N. Y., 9 lives lost.

6. Train wrecked near Lindsey, Ohio, 3 killed, 8 hurt.

7. Fire: Oakland, Cal., nail works burned, loss, \$200,000. Excursion steamer capsizes near Port Talbot, Wales, 22 lives lost.

10. Newark, N. J.: three young girls drowned while bathing.

11. Tornado near Larned, Kan., many buildings destroyed.

12. Train wrecked in Wales, 17 killed, 40 hurt.

13. Fire: Minneapolis, 1,500 people homeless, estimated loss, \$2,000,000. Collision at sea: British steamer *Kirby* sunk by the cruiser *Forth*.

14. Fire: hotel burned at Chicago, 5 lives lost.

16. Train wrecked at Milton, Va., 7 killed, many hurt. Destructive tornado in Nebraska. Boating disaster in Ireland, 17 excursionists drowned.

20. Explosion in a German coal mine, 57 killed, many hurt.

23. A hurricane swept the whole Atlantic coast of the United States, 60 lives lost, many vessels wrecked; one of the most destructive storms that has occurred in many years. Fire: South Chicago, 250 houses burned, 7,000 people homeless, estimated loss, \$600,000.

24. Collision at sea: two freight barges sink in Long Island Sound, 16 lives lost.

26. Train wrecked near Berlin, L. I., 16 killed, 50 hurt.

28. Another hurricane on the Atlantic coast; many lives lost in the neighborhood of Savannah and Charleston, owing to a high tide. Several hundred lives lost on the Sea Islands in the neighborhood of Beaufort and Port Royal; many shipwrecks, including the steamer *City of Savannah*, which was a total loss, all hands saved.

31. Bridge breaks near Chester, Mass., cause, careless supervision of repairs, 15 killed, 15 hurt.

Summary of train accidents in August: 50 collisions, 90 derailments, 7 miscellaneous; total, 147. Killed: 28 employees, 30 passengers, 8 trespassers; total, 66. Hurt: 67 employees, 89 passengers, 6 trespassers; total, 162.

**September 7.** Train wrecked near Colehour, Ill., 11 killed, 6 hurt.

8. Tornado near Lockport, La., 6 killed, many hurt.

15. Cloudburst at Valla-Canas, Toledo, Spain, 60 lives lost.

19. Train wrecked near Manteno, Ill., 8 killed, more than 20 hurt.

21. Explosion in a mine at Wilkesbarre, Pa., 5 killed, 5 hurt. Two soldiers killed and 5 fatally hurt during the autumn manœuvres of the Austrian army.

22. Trains in collision near Wabash, Ind., 11 killed, about 20 hurt.

25. Fire at sea, Russian steamer *Alfons Zeevecke* burned, 60 lives lost; St. Louis, Mo., loss, \$1,000,000.

28. Panic in a synagogue in Poland, 9 killed, 100 hurt.

29. Mine flooded near Mansfield, Mich., 28 lives lost. Snow fell in the New England and Middle States. Frost ruined the outdoor floral display at Chicago.

Summary of train accidents in September: 77 collisions, 75 derailments, 6 miscellaneous; total, 158. Killed: 32 employees, 35 passengers, 12 trespassers; total, 79. Hurt: 101 employees, 88 passengers, 11 trespassers; total, 200.

**October 2.** Destructive hurricane in the Gulf of Mexico, many lowlands submerged, and many lives lost along the coast of Florida, Alabama, Louisiana, and Texas. The storm passed north, and was very heavy on the coast of New Brunswick and Nova Scotia.

5. Fire in military barracks at Roslav, Russia, 34 soldiers killed and 5 hurt.

10. Train wrecked, Indiana, 8 killed.

12. Hurricane along the coast of Georgia, Florida, South Carolina, much damage done. Fire: Sioux City, Iowa, 30 buildings burned, loss, \$500,000.

14. Violent storm on the Atlantic coast, extending from Florida to Maine, many shipwrecks, many lives lost. The gale also extended to the Great Lakes, where about 20 lives are reported lost.

15. Fire: Detroit, Mich., buildings burned, estimated loss, \$200,000.

17. Trains in collision at Wellsville, Ohio, 4 killed, 3 hurt. Shipwreck: French steamer *Marseilles* lost at sea with all hands.

18. Fire in New York city, estimated loss, \$1,500,000.

19. Fires: Springfield, Ill., estimated loss, \$140,000; Shanghai, China, cotton mill burned, loss, \$500,000.

20. Trains in collision at Battle Creek, Mich., 26 killed, several fatally hurt, many injured.

21. Fire: East Douglass, Mass., factory burned, estimated loss, \$200,000.

23. Heavy snowfalls in North and South Dakota and Minnesota.

25. Fire in San Francisco, estimated loss, \$150,000. Trains in collision in Michigan and Texas, 6 killed, several hurt.

27. Fire: Pittsburg, Pa., estimated loss, \$1,000,000. Shipwreck: Pacific Mail steamer *City of New York* ashore near San Francisco.

Summary of train accidents for October: 132 collisions, 116 derailments, 12 miscellaneous; total, 260. Killed: 45 employees, 42 passengers, 10 trespassers; total, 97. Hurt: 140 employees, 166 passengers, 22 trespassers; total, 328.



**November 1.** Open drawbridge, Portland, Ore., electric car falls, 20 lives lost.

2. Boiler explosion, New York city, 5 killed. Fire at sea: steamer City of Alexandria burned, about 35 lives lost. Fire at Dixon, Ohio, sawmill burned, estimated loss, \$200,000. Fire at Zanesville, Ohio, planing mill burned, loss, \$100,000.

4. Boat sinks in New York harbor, 10 drowned. Fire: Galena, Ill., factory burned, loss, \$100,000. Explosion: cargo of dynamite at Santander, Spain, 165 killed and several hundred people hurt.

7. Fire: Danvers, Ill., business houses burned. Explosion: Barcelona, Spain, dynamite bomb thrown by an anarchist, 30 killed, 80 injured.

8. Trains in collision near Chicago, 5 killed, 10 hurt. Fire: Memphis, Tenn., theater and other buildings burned, loss, \$360,000.

9. Fire: Chicago, cable-road buildings burned, loss, \$100,000.

11. Explosion of ether in Poland, 21 killed, several houses destroyed.

15. Fire: Fergus Falls, Minn., wheat and flouring mills burned, estimated loss, \$100,000.

17. Fire: Madison, Wis., Seminary of the Dominican Sisters burned, loss, \$75,000. Gale on the English coast, many vessels wrecked, about 500 lives lost.

18. Boiler bursts at Czernowitz, 16 killed, 20 hurt.

21. Earthquake in Persia, about 12,000 lives lost.

22. Fire: Springfield, Mass., 7 blocks burned, loss, \$450,000.

23. Fire: Detroit, Mich., buildings burned, 7 lives lost, estimated damage, \$800,000.

24. Fire: Pottendorf, Austria, great cotton mill burned.

27. Earthquake shock felt in Massachusetts, Vermont, New York, and Canada.

29. Train wrecked near Milan, Italy, 40 killed.

Summary of train accidents in November: 92 collisions, 101 derailments, 7 miscellaneous; total, 200. Killed: 43 employees, 14 passengers, 14 trespassers; total, 71. Hurt: 108 employees, 84 passengers, 3 trespassers; total, 195.

**December 1.** Many wrecks and mishaps on the Lehigh Valley Railroad, result of a strike, several lives lost.

2. Fire: New York city, Cornell Building burned, damage, \$250,000.

4. Violent gales along the coast of Nova Scotia. A falling embankment buries 14 men at Homestead, Pa.

15. Bridge breaks at Louisville, Ky., 20 workmen killed. Trestle breaks near Dunkirk, N. Y., 5 killed, several hurt. Freshet at Buffalo, N. Y., 2,500 people homeless, \$100,000 damage.

16. Severe storms in the north Atlantic; steamer Rhynland ships a heavy sea, and about 30 of her crew are disabled.

20. Severe storm on the southern coast of Great Britain, many maritime disasters.

22. Two fires in Boston, Mass., 1 killed, loss, \$200,000.

25. Explosion: torpedoes at Columbus, Ga., 4 people hurt.

26. Fire: steamship Seneca burned at Havana.

28. Very severe weather at sea.

29. Dense fog at Amsterdam, Holland, 15 persons drowned by falling into the canals. Chicago, explosion of natural gas, 8 killed.

30. Ice breaks under a crowd on the Volga at Nijni Novgorod, 28 drowned.

31. Collision at sea: British steamer Cythraeus sunk by La Flandre. Fire: Omaha, Neb., 4 lives lost.

Summary of train accidents in December: 84 collisions, 77 derailments, 5 miscellaneous; total, 166. Killed: 24 employees, 5 passengers, 2 trespassers; total, 31. Hurt: 89 employees, 116 passengers, 4 trespassers; total, 209.

Summary of train accidents in the United States in 1893: 996 collisions, 1,212 derailments, 99 miscellaneous; total, 2,307. Killed: 424 employees, 178 passengers, 89 trespassers; total, 691. Hurt: 632 employees, 517 passengers, 43 trespassers; total, 1,242.

**DISCIPLES OF CHRIST.** The General Missionary Convention met in Chicago, Ill., in September. The Christian Woman's Board of Missions, the first of the societies to hold its session, reported that though not enough had been raised to make good its pledges, its receipts were in advance of those of the previous year. Reports were made of missionary work in Utah, Colorado, and Montana; of the school at Hazel Green, Ky., in connection with the mountain mission work; of the "Bible Chairs" at Ann Arbor, Mich.; of the Chinese work at Portland, Ore.; of the foreign mission in India, which was to be enlarged by establishing a new station at Jamalpur, among English and Eurasians, with three missionaries; and of the mission in Jamaica.

The net income of the Foreign Christian Missionary Society for eleven months had been \$58,355, against \$54,535 in the previous year. The expenditures amounted to \$61,794. The Sunday schools had contributed \$18,671, and the Endeavor societies \$1,717. From the missions in Japan, China, India, Scandinavia, and England were returned 646 additions. The policy had been adopted, in view of the many pressing calls from the heathen fields, of reducing the appropriations in England year by year until the mission-churches became self-supporting. The Board of Missions therefore advised that each English church be expected to raise a definite sum for the support of the evangelists, the amount to be named each year by the board in the United States, after corresponding with the English churches and ascertaining their numerical and financial strength. An annual decrease of 10 per cent. in the appropriations was recommended, under which all the English churches might be expected to become self-supporting in nine years. Pledges for \$12,000 in support of the foreign missionary work were made during the meeting of the society.

A deficiency of funds was reported in the domestic missions department of the General Convention, in view of which the sum of \$12,000 was subscribed in the meeting.

The sum of \$35,000 had been pledged among the churches during the year for church extension, to which were added \$1,500 pledged in the convention.

For colored evangelization and education more than \$7,000 had been collected, besides contributions for the Southern Christian Institute, in addition to which \$3,600 were raised at the meeting.

**DOMINION OF CANADA. Government.**—The third session of the seventh Parliament of the Dominion opened on Jan. 26, and closed on April 1. In consequence of the retiring of Sir John J. C. Abbott, through illness, Sir John S. D. Thompson succeeded him as leader of the Government, with the following reconstituted Cabinet: Minister of Trade and Commerce, Hon. Mackenzie Bowell; Postmaster-General, Sir A. P. Caron; without portfolio, Sir John Carling; Secretary of State, Hon. John Costigan; without portfolio, Hon. Frank Smith; Minister of Justice (Premier), Sir J. S. D. Thompson; Minister of Finance, Hon. G. E. Foster; Minister of Marine and Fisheries, Hon. C. H. Tupper; Minister of Public Works, Hon. J. A. Ouimet; Min-

ister of Militia and Defense, Hon. J. C. Patterson; Minister of the Interior, Hon. T. M. Daly; Minister of Agriculture, Hon. A. R. Angers; President of the Privy Council, Hon. W. B. Ives.



EARL OF ABERDEEN, GOVERNOR-GENERAL OF CANADA.

The Governor-General, Lord Stanley, of Preston, opened Parliament with an address, the main features of which are subjoined:

It affords me pleasure to congratulate you on the continued progress which the history of the past year unfolds with regard to Canada. The increase in trade, as illustrated by the exports and imports during the period for which the official returns have been prepared, has been most gratifying, and that increase has continued down to the present time, with the promise that the volume of trade during the current year will exceed that of any year in the history of the Dominion. The revenues of the country have likewise provided for all the services for which Parliament has made appropriation, and the operation of the Government railways has been less burdensome, as regards the difference between income and expenditure, than has been the case for a long term of years previously.

In Manitoba and the Northwest Territories the increase in immigration has been decidedly encouraging, both as regards the number of persons who have come from other countries, and as regards the number of homestead entries made by settlers of all nationalities.

Measures have been taken to carry into effect the agreements arrived at with the United States on the subjects of the boundary of Alaska, the boundary line in Passamaquoddy Bay, and the prevention of destructive methods of fishing, and the preservation and increase of fish life. With regard to reciprocity in wrecking and towing, a correspondence has taken place which indicates that privileges are demanded for United States vessels in Canadian canals which were not anticipated; but it is not impossible that a satisfactory conclusion of the discussion may yet be reached.

The statutes of 1887 relative to a department of trade and commerce, and to the office of solicitor-general, have been brought into force, and the appointments were made which were contemplated by these acts.

It is to be regretted that the Government of the United States was unable to accept the suggestions made by my Government on the subject of canal tolls, and that the President should have thought it necessary to impose exceptional tolls on Canadians using the Sault Sainte Marie Canal, which has so long been free to the people of both countries. My Government, while ready to consider in a friendly

spirit any proposals which may be made by the Government of the United States, have caused efforts to be made to hasten the completion of the Canadian Canal works, which will soon afford to the commerce of the Dominion a highway within our own country.

Measures will be laid before you for the improvement of the franchise act, for the amendment of the laws relating to the civil service, and the superannuation of civil servants, for regulating the admission of evidence in causes and matters under the control of the Parliament of Canada, for extending the system of voting by ballot to the Northwest Territories, and for simplifying the laws relating to lands and land transfers in the territories.

Mr. Laurier, the Opposition leader, moved, in amendment to the address of the House, in reply to His Excellency's speech, that the following paragraph be attached to it:

That in the present condition of the people of Canada substantial reductions should be made in the taxation which presses so heavily on the great bulk of the community; and we regret that in the speech from the throne your Excellency was not advised to hold out promises of reductions in the oppressive duties now imposed.

The question being put on the amendment, it was negatived by a vote of 103 to 53; and being then put on the main motion, it was agreed to.

The session was one of the briefest and yet the busiest in the Dominion. The large Government majority rendered successful opposition impossible, which resulted in adoption of the measures introduced by the administration without prolonged discussion.

The treaty of commerce that had been negotiated with France in behalf of Canada was laid before the House, together with the correspondence that passed during the negotiations; but owing to the late period of the session at which the treaty was received, and the pendency of its bearing in respect of most-favored-nation treatment and the interpretation of certain of its clauses, the Government thought it advisable to postpone its ratification by Parliament.

Early in the session Mr. Edgar (Liberal) moved:

That in the opinion of this House the evidence taken by the royal commission appointed last session to inquire into certain charges made against the Hon. Sir A. P. Caron, which was reported to the Government Nov. 24, 1892, and is now laid before us, establishes facts which should have prevented the subsequent appointment of Sir A. P. Caron to be an adviser of the Crown, and also renders it highly improper that he should continue to hold such office.

The motion was negatived by a vote of 119 to 69.

During the session seven decrees of divorce were granted. There is no divorce law in the Dominion—at least, divorces can not be granted by the courts—and the only resource when a dissolution of marriage is desired is by petitioning Parliament, which may grant divorce by a special act. The process is not only tedious but expensive.

The most important acts of the session are subjoined:

To give effect to an agreement between the Grand Trunk Railway Company, the Canadian Pacific Railway Company, and the corporation of the city of Toronto.

Respecting the Lake Erie and Detroit River Railway Company.



To amend the act to incorporate the Buffalo and Fort Erie Bridge Company.

To incorporate the Eastern Trust Company.

To amend the Wrecks and Salvage act.

To incorporate the Ocean Guarantee Company.

To incorporate the Canada Northwest Land Company.

To incorporate the Cleveland, Port Stanley and London Transportation and Railway Company, and to confirm an agreement respecting the London and Port Stanley Railway.

To incorporate the Automatic Telephone and Electric Company of Canada.

To incorporate the Canada Atlantic and Plant Steamship Company.

To incorporate the Canadian Gas Association.

To incorporate the Canadian Live Stock Insurance Association.

To incorporate the North American Canal Company.

To amend the criminal code, 1892.

To amend the act respecting the Royal Military College.

To amend the act respecting ocean steamship subsidies.

Relating to the granting of subsidies in land to railway companies.

To amend the Homestead Exemption act.

To prevent the manufacture and sale of filled or imitation cheese, and to provide for the branding of dairy products.

**Collection of the Revenue.**—The following sums required for the service of the Dominion for the year ending June 30, 1894, were granted by Parliament at its last session: Customs: Nova Scotia, \$115,720; New Brunswick, \$90,260; Prince Edward Island, \$19,475; Quebec, \$210,345; Ontario, \$303,080; Manitoba, \$33,300; Northwest Territories, \$5,200; British Columbia, \$59,495; miscellaneous, \$61,600. Excise, \$480,647. Railways: Intercolonial Railway, \$3,200,000; Windsor Branch Railway, \$30,000; Prince Edward Island Railway, \$250,000. Canals: Repairs and working expenses, \$522,800; salaries, etc., \$43,000; miscellaneous, \$15,000. Post-Office: Mail service, \$2,046,842; salaries, etc., \$1,185,420; miscellaneous, \$206,120; mail subsidies and steamship subventions, \$438,000.

Included in the last item is \$103,000 for lines of steamers running between the ports of Halifax and St. John or either, and the West Indies and South America.

Senate of Canada, salaries and contingent expenses, \$61,488 (this does not include the sessional allowance of \$1,000 granted for life to each member of this body); House of Commons, \$183,094; immigration, \$170,000; lighthouse and coast service, \$527,110; ocean and river service, \$206,900; scientific institutions and hydrographic surveys, \$68,150; geological survey, \$60,000; Northwest mounted police, \$625,000; government of Northwest Territories, \$257,650; pensions, \$33,192; militia, \$1,216,382. Canals: Saulanges, \$1,000,000; Cornwall, 530,000; Rapid Plat, \$275,000; Galops, \$250,000; Sault Ste. Marie, \$1,906,000; St. Lawrence River and Canals, \$250,000.

The preceding list of sums voted for the present fiscal year does not include the large annual grants to railways, Indians, public works, administration of justice, etc., and even in the items mentioned it can not claim to be perfect.

**Revenue, Expenditure, and Debt.**—The following is a statement of the revenue of Canada,

according to returns received at the Finance Department, Ottawa, for the fiscal year ending June 30, 1893:

SOURCES.	1891-'92.	1892-'93.
Customs.....	\$20,191,394	\$20,707,971
Excise.....	7,884,489	8,284,986
Post-office.....	2,683,414	2,818,452
Public works.....	3,556,521	3,741,144
Miscellaneous.....	1,586,260	1,630,703
Total.....	\$35,902,028	\$37,183,256

Increase for 1892-'93, \$1,281,228.

The expenditure for the fiscal year 1892-'93 appears from the statement to have been \$30,652,653, or \$614,586 less than during the fiscal year 1891-'92, so that, with the \$1,281,228 increase in revenue, the Dominion is financially richer by \$1,895,796 than at the close of the preceding year.

The net debt of the Dominion on June 1, 1893, amounted to \$237,443,000 or about \$48 for each man, woman, and child in the country. This, of course, does not include provincial indebtedness, which for some of the provinces is quite large. Most of the national debt of Canada was contracted for constructing railways and canals, for opening up the country for settlement, for public buildings and public works, compensating the Hudson Bay Company for relinquishing its claim to territory to the Dominion, etc., and that expenditure is now represented by assets worth vastly more than the original sums spent in their acquirement. For railways and canals alone the Dominion Government will have expended by June 30, 1894, about \$158,000,000.

**Government Railways and Canals.**—The Intercolonial, a Government railway, has been an almost yearly source of expenditure to Canada; but during the past year important changes were made in the management and working of the railway by the Minister of Railways and Canals, Hon. John Haggart, with the gratifying result that the frequent deficits of preceding years were changed into a profit. The figures for the past two fiscal years are as follow:

ITEMS.	1891-'92.	1892-'93.
Earnings.....	\$2,945,441	\$3,065,499
Working expenses.....	3,439,877	3,045,817
Profit.....	.....	\$20,182
Loss.....	\$493,936	.....

For the seventeen years that the Intercolonial has been in operation it has showed profits during five, the aggregate being \$47,858; while for the remaining twelve years the excess of working expenses over revenue was \$4,614,485. The Prince Edward Island Railway, also belonging to the Government, shows as well a very considerable reduction in working expenses for the past year.

Last year the revenue derived from the Dominion canals, exclusive of hydraulic rents, was \$358,711, and for the year preceding it was \$350,351. Last year 261,954 tons of grain passed from the upper lakes to Montreal, against 295,509 tons in the year before. The falling off in the amount of grain passing east by way of the canals was doubtless owing to the fact that

the railways are getting a steadily increasing share of the grain trade. The quantity of grain that passed through the Welland Canal for ports in Ontario last year was 8,942 tons, and through the same canal from one port in the United States to another 201,540 tons.

**Trade and Commerce.**—The following is a statement of the exports and imports of Canada for the periods indicated :

YEARS.	Exports.	Imports.
1889-'90.....	\$96,749,149	\$121,858,241
1890-'91.....	98,417,296	119,967,638
1891-'92.....	113,000,000	127,400,000
1892-'93.....	118,619,750	129,074,268

Of the imports for the fiscal year 1892-'93 the value of dutiable goods was \$77,378,091; of free goods, \$51,696,177; and the customs duty collected, \$21,161,710.93.

In dealing with the United States the balance of trade has been against Canada. Taking food articles alone, Canada during 1892 imported of these from the United States \$16,855,054, and exported \$5,079,615. During the past five years the exports to Great Britain have increased (in round numbers) from \$40,000,000 to over \$65,000,000. During the same period the tonnage of vessels on the Great Lakes has risen from 15,000,000 to 18,500,000, and the tonnage of the coasting-trade vessels from 18,000,000 to 25,000,000. The entire number of vessels now engaged in this trade is 7,639.

**Insurance.**—Since 1888 the amount of life insurance in Canada has increased from \$211,000,000 to nearly \$280,000,000. In the spring of 1893 the Superintendent of Insurance submitted to the Hon. George E. Foster, Minister of Finance, his abstract of the insurance business in Canada for the year ending Dec. 31, 1892. From this statement it appears that the total amount of policies in existence in the regular life companies operating in the country was almost \$280,000,000, of which amount \$155,000,000 were carried by the native home companies. The new business transacted during the year amounted to \$45,000,000, of which \$26,000,000 was secured by Canadian companies. The total assets of the latter at the close of the year were nearly \$26,000,000.

**Unclaimed Balances.**—The annual blue book, giving a list of unclaimed balances and dividends remaining unpaid in the chartered banks of Canada for five years prior to Jan. 1, 1893, was published in the spring. In it the amount of the balances at the close of 1891 is given as \$457,357, and at the close of 1892 as \$427,931. The list is curious. While it discloses balances of \$5,000 in one case, and many over \$1,000, one man is credited with a balance of 1 cent. The late Sir John A. Macdonald is credited with an unclaimed balance of 20 cents in the Toronto branch of the Bank of Montreal. The bulk of the unclaimed money is in the Province of Quebec, to whose credit \$344,220 is placed, while Ontario has only \$46,706.

**Post-Office Savings Banks.**—The Post-Office Savings Banks had the following sums on deposit for the years indicated: 1890-'91, \$21,738,648; 1891-'92, \$22,298,401; 1892-'93, \$24,153,193.

In 1891 the Government reduced the rate of interest on deposits in the Post-office Savings Banks from 4 per cent. to  $3\frac{1}{2}$  per cent., which tended to reduce the deposits temporarily. Since 1888 the deposits in the chartered Government and special savings banks have increased from \$182,000,000 to \$239,000,000 nearly.

**Fisheries.**—The total value of the fisheries of the Dominion for 1892 was \$18,941,171. In the maritime provinces the catch fell short of that of 1891 by over \$1,000,000, but this was more than compensated for by the large increase of the inland fisheries of the Northwest Territories and Ontario. The gulf division of the province of Quebec was the only deep-sea fishing province actually showing an increase over the take of the previous year. The following is the value of the most important products of the fisheries for the year: Cod, \$4,063,458; salmon, \$2,242,847; herring, \$2,035,630; lobsters, \$1,991,829; white fish, \$1,498,523; mackerel, \$1,346,977; trout, \$711,112; seals, \$633,119; haddock, \$586,524; hake, \$392,191; fish oil, \$359,904; halibut, \$275,207; smelts, \$235,958; pike, \$224,253; pollack, \$222,882; pickerel, \$188,573; and oysters, \$167,659. The lobster yield for 1892 was less than that of the year before by \$260,000, which was doubtless due to exhaustion of certain localities by overfishing. During the year first mentioned 626 canneries were in operation on the littoral of Canadian seas, using 768,476 traps and other plant valued at \$1,284,821. The pack amounted to 12,524,498 pound cans, besides 6,012 tons disposed of fresh or shipped alive, representing a drain of about 80,000,000 of these crustaceans from Canadian waters during a single season.

During 1892 63,678 men were employed in the Canadian fisheries, and the total amount of capital invested in the industry was \$7,647,835. Altogether, 1,000 schooners and steam tugs, of 37,200 aggregate tonnage, and 30,500 boats were used in prosecuting the fishing in that year.

To prevent violation of the fishery laws the Government of Canada has a fishery protection fleet of 8 vessels, which cost for maintenance and repairs about \$100,000 a year. There are also fish-breeding establishments in various parts of the country, lobster hatcheries, and beds for oyster culture, which cost the Government over \$59,000 for 1893.

**Agriculture.**—The vast majority of the population of Canada is engaged in farming operations; but, though crops generally have been good, during recent years the industry has not been profitable, in consequence of the low prices for farm produce. Manitoba possesses the most productive wheat areas in the Dominion, but the appearance of early frosts at intervals of a few years, which greatly injure the wheat crop, renders its production somewhat precarious. Last year such a misfortune befell the farmers of this province, and much of the injured grain was unfit for other use than fodder. To add to their hardships, the railways, which had been built largely by grants of public money and public lands, charged as much per bushel for transporting the damaged grain as for the carriage of that which commanded a full market price.

The season of 1893 was productive not only in Manitoba but in Ontario and throughout the



Dominion generally. The estimated wheat product for Canada is 50,000,000 bushels, which is less by 11,592,822 bushels than the product for 1891. Of the whole amount of wheat produced in Canada this year, 40,000,000 bushels were grown in Manitoba and Ontario. It is estimated that the Dominion requires for home consumption 39,800,000 bushels, which would leave over 10,000,000 bushels for export.

The Government of Canada does much to foster the agricultural interests. For the maintenance of the experimental farm and the dairying interests in affiliation therewith, Parliament voted over \$107,000 for the present year, and sums were granted to struggling agricultural societies in the Northwest Territories.

**Immigration.**—To defray the expenses to be incurred in connection with immigration during the fiscal year 1893-'94 Parliament voted the sum of \$210,000. Immigration agents are employed in Great Britain and Ireland and on the Continent; but, liberal as are the inducements offered, Canada so far has not been popular with emigrants. Recently the Dominion Government was notified by the governments of Germany and Sweden that Canadian emigration commissioners would be prohibited from carrying on active work in these countries. But this restriction has been more than compensated for by emigration from France and Holland—countries which rarely sent many emigrants to Canada. There has been, however, a decline in the number of emigrants from the British Isles. During 1892 the number of immigrants arriving at the ports of Halifax, Quebec, and Montreal was 52,000, and of those, 28,000 declared their intention of settling in Canada. The homestead entries for the year numbered 4,840, embracing 774,400 acres. Of the entries, 513 were made by persons from the United States.

**Railways.**—The Canadian Pacific Railway is the only one of the two great railways of Canada not operated by the Government which can show a substantial surplus. At the last annual meeting of the company, held in Montreal, it was shown that the gross earnings of the road for the preceding year were \$21,400,000, and the year's expenses \$13,000,000, leaving a surplus, after all expenses and dividends were paid, of \$7,000,000, which was carried forward for the security of stockholders.

The mileage of the road and its branches is now 7,000 miles, while there are 1,800 miles of tributary lines in the Northwestern States. By its new "Soo" line St. Paul and Minneapolis can be reached in seventy hours from the coast. This railway has also a multitude of subsidiary but important enterprises connected with it, among them being the line of ocean steamers linking Canada with China and Japan.

The freight and passenger traffic of the Grand Trunk Railway has suffered for a number of years by the competition of the Canadian Pacific; but recently, through an extension of its connections, and from other causes, an improvement in its trade has taken place. To meet the requirements of its increased and prospective traffic the company will build a new double-track open bridge across the St. Lawrence, at Montreal. It will be built alongside the old bridge, and on the old piers extended.

**Mineral Statistics.**—From the preliminary statement furnished by the Geological Survey Department at Ottawa it appears that the product and value of the metallic and of the most important nonmetallic substances in Canada for last year were as follow:

*Metallic.*—Copper, 7,042,195 pounds, \$821,589; gold, 49,985 ounces, \$900,483; iron ore, 103,248 tons, \$254,206; lead, 1,205,420 pounds, \$49,422; nickel, 6,057,482 pounds, \$3,513,339; platinum, \$3,500; silver, 305,026 ounces, \$264,510.

*Nonmetallic.*—Asbestos, 6,042 tons, \$388,462; coal, 3,290,897 tons, \$7,181,610; coke, 56,135 tons, \$160,249; gypsum, 226,568 tons, \$225,260; mica, \$100,923; mineral water, 640,380 gallons, \$75,348; petroleum, 779,753 barrels, \$982,489; phosphate, 11,932 tons, \$157,424; pyrites, 59,770 tons, \$179,310; salt, 45,486 tons, \$162,041.

The total value of the metallic products for the year amounted to \$5,807,049, and of the non-metallic to \$13,234,267, which, added to \$458,864—estimated value of mineral products not returned when the statement was made—aggregate \$19,500,000.

**Coal.**—The most important mining industry in Canada is coal, the extent of the coal fields being estimated at 100,000 square miles. Much of this coal area is very productive, and 9,000,000 tons per square mile is regarded as a moderate estimate of the possible product. The most extensive coal fields are found in the Northwest Territories and British Columbia, but owing to lack of transportation facilities, cost of carriage from the mines, and want of capital, they have not been worked to any great extent. At present the bulk of the coal product of the Dominion is mined in Nova Scotia, at Pictou and Cumberland; and of the entire amount produced last year in Canada, 2,175,913 tons were mined in that province. The coal is usually of excellent quality; and the anthracite mined at Banff, almost on the boundary between British Columbia and Alberta, now finds a ready market in San Francisco.

**Gold.**—The production of gold in Canada is confined almost exclusively to British Columbia and Nova Scotia, though a small quantity is annually produced in Quebec, and it has also been obtained from some parts of Ontario. Future exploration of the region north and west of Lake Superior may disclose valuable deposits of gold, as it is known to exist in many localities, and has been found in several places in small amounts. Very limited quantities of the metal are also obtained yearly from Saskatchewan river, near Edmonton. Since 1860, when gold was first discovered near Tangier harbor, Nova Scotia, the entire value of the product of that metal in the province has been \$10,723,779. The value of the gold product of British Columbia since 1858 has aggregated \$53,634,509.

The marked decrease in the present annual product of gold in Canada, rendered apparent by the figures for 1892, can be accounted for from the fact that the British Columbia gold mines have been for some years much less productive than they were before, and the same is probably true also respecting the gold mines of Nova Scotia.

**Iron.**—Iron ore, except in Manitoba, is found almost everywhere in Canada, but it can scarcely

be said to have been mined to any extent proportionate to its quantity. There is now, however, a marked increase in the product of this metal, its value for the past year being \$112,201 more than for the preceding year.

**Nickel.**—This is one of the most valuable mineral products of Canada, though only discovered in 1883, when a deposit of nickeliferous pyrrhotite was found in cutting through a small hill at Sudbury, Ontario, for the Canadian Pacific Railway. The increased value of nickel, from its use in the manufacture of nickel steel, has so stimulated enterprise at the Sudbury mines that, in addition to the four companies operating there for some time, 20 others have been formed in the district. The value of the output of nickel for last year exceeded that of the year before by \$737,353.

Of the other valuable mineral products, copper has been found by employees of the Geological Survey and others over vast tracts of country in Nova Scotia, Quebec, New Brunswick, and British Columbia, but as yet the production of ore is not over 500 tons a day. Silver is found in considerable quantities near Lake Superior and elsewhere, but so far the mines have not been as productive as they might be made by additional capital and enterprise.

**Amber.**—A discovery of an extensive deposit of amber at Cedar Lake, Manitoba, has been reported by J. B. Tyrrell, of the Geological Survey. It occurs mixed with sand and fragments of partially decayed wood, on a low beach and along the face of a deep, wet spruce swamp. The pieces of amber were for the most part smaller than a pea, but somewhere found as large as a robin's egg. The amount of amber on this strip of beach has been estimated at 1,457,280 pounds, which at a minimum value of 25 cents a pound would represent a total of \$364,320. Amber has been found frequently in the coals and lignites of the Northwest.

Much of the capital invested in Canadian mines is owned by Americans, and the development of the mineral resources of the country, notably within recent years, is largely due to American enterprise.

**Political.**—The principal political events of the current year in Canada were the retiring of one Governor-General from office and the installation of his successor. Lord Stanley, of Preston, was appointed Governor-General, May 1, 1888, and administered the duties of this office till July 15, 1893, when Lieut.-Gen. Montgomery-Moore, commanding the British forces in Canada, was sworn in as administrator of the Government, until the arrival of the newly appointed Governor-General, the Earl of Aberdeen.

In closing the last session of Parliament the retiring Governor-General concluded his address as follows:

I feel with deep regret that the period of my official connection with the Dominion is drawing toward its close, and that in all probability I am taking leave of you for the last time. Lest this should be the case, I desire to avail myself of the present occasion to express my abiding interest in all that concerns the welfare of Canada, and my sincere affection to her people, who have never failed to testify their loyalty to the person and throne of our sovereign, and to show kindness and consideration to her representatives. It will ever be my sincere desire to be of service

to the Dominion, and I shall continue to cherish feelings of the warmest solicitude for the welfare and prosperity of those among whom I have been placed during the past five years. I pray that the blessing of Almighty God may at all times attend you.

Through the death, in the spring, of his brother, the Earl of Derby, Lord Stanley, of Preston, succeeded to that title. The new earl took his final leave of Canada on July 15.

The Right Hon. John Campbell Hamilton Gordon, seventh Earl of Aberdeen, was sworn in as Governor-General of Canada, on Sept. 18, in the Legislative Council Chamber in the Provincial Parliament building, Quebec.

His Excellency was afterward presented with an address, and his reply, indicating his policy and his views relative to the responsibilities and duties of his office, is of sufficient importance to warrant its reproduction in an abbreviated form.

It is surely appropriate that the first greetings of Her Majesty's Canadian subjects to a new Governor-General, and the first public utterance by the occupant of that position, should be upon this historic ground, and amid the inspiring traditions of this ancient and beautiful city. And your demonstration takes place in an eminently opportune manner immediately after I have been installed in the distinguished office to which I have been appointed. It is indeed an office of high honor, as well as of grave and serious responsibility. But, gentlemen, does the honor and dignity of the position exclude the holder of it from the common lot, the common heritage of service? Nay, it implies, it includes, it conveys this privilege, this grand principle and purpose of life. . . . To foster every influence that will sweeten and elevate public life, to make known the resources and development of the country, to vindicate, if required, the rights of the people and the ordinances of the Constitution, and, lastly, to promote by all means in his power, without reference to class or creed, every movement and every institution calculated to forward the social, moral, and religious welfare of the inhabitants of the Dominion. Such, gentlemen, I venture to assure you, is the aim and purpose which, in dependence on the one ever effectual source of health and strength, we desire to pursue. I say 'we,' for by your kindly and appreciative allusion to Lady Aberdeen you have shown that you understand why I contemplate these duties only in conjunction with my wife.

The new Governor-General was born in 1847; was educated at St. Andrew's and Oxford Universities, and graduated at the latter in 1871. In 1870 he succeeded to the earldom of Aberdeen on the death of his brother, and entered the House of Lords as a Conservative; but, disagreeing with the policy of Mr. Disraeli, he has since year after year identified himself more closely with the Liberal party. His brief *régime* as Lord Lieutenant of Ireland, secured him great popularity in that country—a popularity shared by the countess, who materially helped to make his tenure of office a success. The Lord of Aberdeen is no stranger in Canada. Not long ago he resided for some time in Hamilton, Ontario, and he has invested a considerable amount of capital in the country. He has brought with him to Canada a most enviable reputation for philanthropy, and the countess is well known for her active efforts in promoting the moral and physical improvement of girls and others requiring her sympathy and assistance. She instituted the Scottish Girls' Friendly Societies, which have been productive of great good; and much



wholesome advice and wise instruction for both old and young have been disseminated through the medium of two little magazines which she conducts. The efforts of the Countess of Aberdeen in connection with the Irish village at the Columbian Exposition, and her zeal in securing the best possible exhibit of Irish industries there, are well known.

**Political Parties.**—Though an early dissolution of Parliament was not anticipated, and a general election was still distant, considerable activity had been displayed in the sphere of party politics since the Canadian Parliament was prorogued in the spring. On June 21 a Liberal convention was held at Ottawa, which was productive of great enthusiasm, and though no important changes were made in the party platform, a better organization of the Liberal forces was effected than existed heretofore.

Though no material change in the Conservatives' policy of protection is expected, it is probable that a revision of the tariff will be attempted at the next session of the Canadian Parliament. At a Conservative demonstration held in honor of Sir John S. Thompson, Premier, in Montreal, Sept. 12, he announced that such a revision would be made, and that the Government would endeavor to serve the interests of all and favor no particular class. At a meeting held at Berlin, Ontario, Sept. 26, Sir John declared that the issue before the country was free trade or protection—a statement which is sufficient to indicate that whatever changes are contemplated respecting the tariff, they will not be such as to alter materially the policy of protection pursued by Canada since 1879. At the same time he made the announcement that an intimation had been conveyed to Washington of Canada's willingness to treat for freer trade relations with the United States.

Opposed generally to both Liberals and Conservatives, Hon. H. Mercier, late Premier of Quebec, delivered numerous addresses before his French Canadian countrymen in the New England States, in which he bitterly inveighed against both political parties in Canada, and recommended annexation as the panacea for all the ills afflicting their native country.

**Military.**—The militia of Canada, numbering about 50,000 men, has always been commanded by a British officer, the commander now being Major-Gen. Herbert. In the summer this officer prepared a scheme of changes in the militia, which was agreed to by the Minister of Militia and Defense, the most important being that the post of quartermaster-general, recently created, be bestowed upon an officer of the British army. The proposal was regarded with disfavor by militia officers generally, who thought that a Canadian should be appointed to the office. Notwithstanding their and other protests, Major P. H. Lake, of the East Lancashire regiment, was assigned to the post. Other changes proposed and made were the retiring of Lieut.-Col. Straubenzie, district adjutant general of the Ottawa and Kingston district, and Lieut.-Col. Villiers, of the Winnipeg district. A still more sweeping change was the transference of all the brigade majors excepting Major Roy, of Montreal.

A much more serious change, involving the

removal of the fortification walls of the city of Quebec, has also been under consideration by the Dominion Government, but has not yet been determined upon. These fortifications were constructed by the British Government early in the century, at a cost of \$25,000,000, on a general plan drawn up by the Duke of Wellington, and including the best features of the fortified towns of France and Spain. Though they are now regarded as practically useless and involving needless expenditure to the Dominion Government, besides being supposed to retard the progress of the city, the attempt to remove them would probably provoke more than a mere protest. They add much to the picturesqueness and attractiveness of Quebec, and the inhabitants and Canadians generally, as well as tourists, would regret the change.

The only garrison maintained now by the British Government in Canada is at Halifax, Nova Scotia, where usually 2,000 troops are stationed. Gen. Sir John Ross, who for several years commanded the British land forces in Canada, retired from the command in May, and was succeeded at Halifax by Lieut.-Gen. Montgomery Moore. There is also a naval station at Esquimalt, British Columbia, and the Dominion Government contributed \$105,000 at its last session as its share of the expenditure for the works and buildings being constructed there.

**Religions.**—Heretofore the metropolitan, usually the Bishop of Montreal, was the highest dignitary of the Church of England in Canada. Recently, however, two Canadian archbishops were appointed—Rev. Dr. Lewis, past bishop of the diocese of Ontario, and Rev. Dr. Machray, Past Bishop of Rupert's Land. The Church of England in the Dominion has now 2 archbishops, 19 bishops, about 1,000 clergymen, and 644,106 adherents.

The Roman Catholic Church is presided over by 1 cardinal, 5 archbishops, and 1,250 priests, and has a membership of 1,990,465. The Roman Catholic is a state church in the province of Quebec, and clergy tithes are a legal impost, collectable like the state tax. The Church owns much valuable property in Montreal and Quebec and throughout the province, and nearly all of it is exempt from taxation. There are 51 parishes in the province, in which the taxable property amounts to \$24,000,000, while the exemptions are valued at \$12,775,000, nearly all of the latter being on church property.

The Presbyterian Church of Canada has a membership of 754,142, 1,000 ministers, and 2,358 churches. At the General Assembly of this denomination, convened at Brantford, June 13, Prof. Campbell, of the Presbyterian College at Montreal, was tried for teaching views supposed to invalidate the authority of the Bible. The assembly referred the matter back to the Presbytery of Montreal, and the latter, by a vote of 21 to 13, found Prof. Campbell guilty.

Of the other churches, the Methodists have 1,712 clergymen and 847,469 adherents, and the Baptists 500 clergymen and 303,749 adherents.

**Educational.**—The Dominion census commissioner recently tabulated the educational statistics of the last census. Taking the adult population, 84·65 per cent. can read and 80·34 per cent. can write. Canada is below the

United Kingdom, France, Germany, Holland, Switzerland, and Scandinavia in the proportion of those who can read and write, but is about equal to the United States, and ranks higher than Belgium, Italy, Austria, Spain, and Russia.

According to provinces, Manitoba takes the lead in the Dominion for the largest proportionate number of adults able to write. New Brunswick does not make as favorable a showing as the other provinces. The adult population of the province is not as generally able to read or write as twenty years ago. All the other provinces have improved.

**Criminal Statistics.**—During the past year 5,924 persons were charged with indictable offenses in the courts of Canada—a decrease of 64, compared with similar returns for the year before. Of the entire number accused, 4,030, or 8·23 per 10,000 inhabitants, were convicted last year, against 3,964, or 8·20 per 10,000 the previous year. Of the whole number convicted last year, 289 were women, 714 were under sixteen years of age, 820 were unable to read or write, 2,996 had received an elementary education, 91 a superior education, 2,158 used liquor moderately, 1,740 used liquor to excess, 79·4 per cent. belonged to the cities, and 20·6 per cent. to the country districts.

The more important sentences passed were: 5 sentenced to death, 4 to penitentiary for life, 111 to imprisonment for five years or over, and 249 to imprisonment for two years and under five. The prerogative of mercy was exercised last year in 194 cases, including 5 death sentences commuted to imprisonment for life, against 120, including 1 death sentence, for the year before.

If to the number of convictions for indictable offenses the summary convictions by justices of the peace be added, the total is 34,415, or 2,418 fewer than for the preceding year.

Criminals, as represented by the convictions reported, have increased faster than the population in British Columbia, Quebec, New Brunswick, and Ontario; while the provinces of Manitoba, Nova Scotia, Prince Edward Island, and the territories show increases of population greater than the increase in criminal convic-

tions. Manitoba is remarkable for having an actual decrease of convicted criminals while increasing its population 131 per cent.

Summing up the results obtained from the study of the criminal statistics of Canada, we find that crime is on the decrease; that the number of convictions proportionate to indictments is larger than in most countries; that the female population of Canada supplies fewer criminals than that of other countries; that juvenile crime is on the increase among boys, while decreasing among girls; and that crime has slightly increased in the cities and decreased in the rural districts.

**Imperial Honors.**—A titled class has been steadily growing in Canada for some time, and though such dignities do not confer prestige and social position to the degree they do in Great Britain, they are, nevertheless, eagerly sought after by many of the official and other classes. There are now two Canadian peers—Sir George Stephen, created Lord Mount Stephen a little over a year ago for his connection with the Canadian Pacific Railway; and Charles Colmör Grant, Baron De Longueuil. This feudal barony originated in a patent of nobility signed by Louis XIV, granting the title to Charles Le Moyne for distinguished services, and is remarkable as creating not only a territorial barony, but as also conferring a title of honor upon himself and his descendants, whether male or female. The cession of Canada to Great Britain made no change in the legal right to hold honors, and since this period each successive head of the family has, by assumption of right, used the title, but it was not officially recognized by the British Government until 1880. There is also a Canadian peeress, the Baroness Earncliffe, who received that title after the death of her husband, Sir John A. Macdonald, in 1891.

Of Canadian baronets there are: Sir William George Johnson, fourth baronet, created in 1755; Sir James L. Robinson, second baronet, created in 1854; Sir Charles Stuart, second baronet, created in 1840; Sir William Rose, second baronet, created in 1872; and Sir Charles Tupper, first baronet, created in 1888. There are about 54 persons in Canada who hold the various grades of knighthood.

## E

**EAST AFRICA.** By the Anglo-German agreements of Nov. 1, 1886, and July 1, 1890, the British and German spheres in the coast and lake regions of Africa east of the territories of the Congo Free State are divided by a line starting at the north bank of the Umba or Wanga river, where it flows into the Indian Ocean, extending in a northwest direction, passing round the north side of Mount Kilimanjaro, so as to leave it within the German territory, then continuing northwestward till it strikes the shore of the Victoria Nyanza in 1° of south latitude, and following that parallel across the lake and to the westward till it reaches Mount Mfumbiro, passing to the southward of the mountain so as to leave it within the British sphere, and recurving to the northward till it

strikes the boundary of the Congo State in 30° of east longitude. By the Anglo-Italian agreement of March 24, 1891, the English and Italian spheres are divided by a line that ascends the channel of the Juba river to 6° of north latitude, follows that parallel westward to 35° of east longitude, and then that meridian northward to the Blue Nile. German East Africa, continuous on the west with the Congo Free State, the boundary line running for the greater part of its length through Lake Tanganyika, is on the south separated from the Portuguese East African possessions by the Rovuma river, and from British Nyassaland by Lake Nyassa and a line, defined in 1890, which runs to the northward of the Stevenson road, from the northern extremity of Lake Nyassa to the



southern extremity of Lake Tanganyika. Portuguese East Africa extends from the German boundary to Tongaland, and is bounded on the west by territories over which Great Britain assumed a protectorate and assigned to the British South Africa Company, and in the north by Nyassaland, which was proclaimed a protectorate of Great Britain on May 14, 1891.

**British East Africa.**—The British East Africa Company, chartered by the Crown on Sept. 3, 1888, with an authorized capital of £2,000,000, of which £1,000,000 were offered for the subscriptions of the public, leased from the Sultan of Zanzibar for fifty years the strip of coast 10 miles wide north of the German boundary, and in 1891 acquired all his sovereign and proprietary rights within the British sphere in consideration of a perpetual annuity of \$80,000. In the same year the ports north of Kismayu were retroceded to the Sultan in order that they might be transferred to Italy. The district of Witu, previously occupied by Germany, was ceded to the company in 1890. The area claimed as the British sphere embraces the region north of the agreed German boundary, west and south of the Italian boundary, and east of the treaty limits of the Congo State and the entire Nile basin as far as the frontier of Egypt. Treaties have been made by the chartered company with the King of Uganda, various native chiefs between the coast and Victoria Nyanza, some of the chiefs on the west side of the lake to a point beyond Semliki river, and some of the Somali coast tribes between the Juba and Tana rivers. The revenue of the East Africa Company is derived mainly from customs duties, which amounted to about \$100,000 in 1892. The principal exports are cloves, sesame, ivory, rubber, gum arabic, copra, coir, orchilla weed, and hides. The imports are cotton goods, beads, and iron and copper wire. The company employs an armed force of about 800 Soudanese and 200 Sikhs. The acting administrator at Mombasa, the chief port and seat of government, is J. R. W. Pigott.

The East Africa Company was unable to continue its operations, even after abandoning Uganda, without a subsidy from the Government, and unless this was forthcoming the directors proposed to turn the country over to Zanzibar on being reimbursed for the outlay. Of the £1,000,000 of stock offered to the public, £526,000 had been subscribed, and of this £372,000 had been paid up. The expenditure up to April, 1893, had amounted to £448,000, of which £225,000 represented the cost of exploration, the acquisition of territory, the making of treaties with native chiefs, and the maintenance of stations in the interior, including the expenses incurred in the occupation of Uganda. Pending the result of further efforts to obtain Government aid for the administration and military defense of the country or for the construction of a railroad to Lake Victoria or as far as Kikuyu, or of the alternative proposition to cede the territories back to the British protectorate of Zanzibar for a sum sufficient to wind up the company without loss to the stockholders, which the Sultan of Zanzibar could furnish by surrendering the 4,000,000 marks received from the Germans for their coast and other funds, the directors voted in May, 1893, to call on the share-

holders for a part of the 30 per cent. not yet paid up on their shares. The railroad route surveyed by Captain Macdonald to the northeast corner of the lake, in Kavirondo, is 657 miles. The estimated cost of building the line is £3,409 per mile, or £2,240,000 altogether. The company's main source of revenue was cut off by the extension, according to treaty, of the free-trade zone of the Congo basin to its coast on July 1, 1892. The duty of 5 per cent. authorized by the Brussels act of 1890 was still collected, but it could only be applied to the purposes specified, relating to the suppression of the slave trade. Commander F. G. Dundas, who had previously explored the Tana river and Mount Kenia, led an expedition up the Juba river which promised to open up that highway to Somaliland and afford commercial communication with the Gallas. But the result was the opposite of what was intended; for one of the officials of the company, by his high-handed and aggressive procedure, provoked the Somalis and involved the company in hostilities. The condition of Witu necessitated the continued military occupation of that sultanate by a considerable force of Indian troops, the cost of which was so great that the company contemplated abandoning that district as well as Uganda. The Somali outbreak was caused by the agent stationed by the company at Kismayu, one Todd, whom the Somalis threatened to kill. The police of the company fired on the natives, killing several, and the rest were dispersed by the guns of the British gunboat "Widgeon." The native quarter of the town was burned, and all the Somalis were chased into the interior, while the company's military force was re-enforced to guard against another attack. Those Somalis who signed papers declaring their submission to the company were afterward allowed to return. On Aug. 11, 1893, some of the native soldiers mutinied and joined the tribesmen, who attacked and killed the officer of the East Africa Company, Mr. Hamilton. On Aug. 18 they attacked Kismayu, but were repelled by the garrison under the command of Count Lovatelli, an Italian traveler. The fort of Turk's Hill and the English steamer "Kenia" were captured by them and 3 Englishmen taken prisoners. On Aug. 23 the British war vessel "Blanche" arrived and relieved the garrison at Kismayu. Guided by Count Lovatelli, Lieut. Lewes with 35 bluejackets recaptured the fort at Turk's Hill, then proceeded up Juba river, rescued the "Kenia" and the captive Englishmen, after engaging the mutineers and Somalis and killing a large number, and destroyed Magareda, Hajowen, and other villages.

Before this Rennell Rodd and Gen. Mathews had gone with the war vessels "Blanche," "Swallow," and "Sparrow," to re-establish British power and prestige in Witu, where the company's forces had been unable to cope with the Sultan, Fumo Omari. The negotiations opened with the latter by the acting consul-general proved unsatisfactory. On Aug. 7 the Zanzibar troops and British marines stormed the town of Witu and captured it after an obstinate resistance. The English losses were 2 men killed and 15 wounded, including Lieut. Fitzmaurice and Lieut. Gervis. The Sultan having retired to Jongeni, that town was also attacked and

taken by storm. The deposed Sultan then abandoned the struggle. A Soudanese garrison was left to defend Witu, where Mr. Thompson endeavored to restore order under British rule.

**Zanzibar.**—After the ports and territories of the Sultan of Zanzibar on the African mainland had been ceded, with the forts, buildings, harbors, and other improvements, to German and English companies, the protectorate over the islands of Zanzibar and Pemba, the remaining possessions of the Sultan, was conceded to Great Britain by the new Anglo-German agreement of 1890. The British protectorate was established in October, 1891, when executive officers were appointed by the British Crown to take charge of the different departments. The regular Government thus instituted consisted of Gen. Lloyd Mathews, who was made president of the Government and took charge of the interior department and the disbursements of the treasury; Hugh Robertson, who attended to the collection of the revenue; Capt. Hatch, commander of the military forces and the police; Capt. Hardinge, officer of the port and director of lighthouses; Bomanji, placed in charge of the public works; and Mohammed Ben Saif, treasurer. Mr. Robertson was succeeded as collector by Mr. Strickland in 1892. Zanzibar was declared a free port for all articles except arms, powder, spirits, and kerosene, on Feb. 1, 1892. Gradually the authority of the Sultan was entirely superseded and his officers and retainers dismissed. The property and revenues of the Seyyid or Sultan having been taken away from him, he was allowed a civil list sufficient to maintain his diminished establishment. On March 5, 1893, the Seyyid Ali ben Said, who had succeeded his brother Burgash on Feb. 13, 1890, died. This gave an opportunity to cut down the civil list by 200,000 rupees and appoint a successor who would be more completely under the control of the British consul-general, who already had power and authority to decide on all the acts and expenditures of the Zanzibar Government. The Sultan's son, Kali Burgash, claimed the succession, and relying on the rebellious spirit that had long been rife among the natives, gaining admittance to the palace, he proclaimed himself Seyyid. Capt. Campbell had landed 250 marines from the British cruiser "Philomel" and drawn them up in front of the building. This force at once, in anticipation of trouble, seized the palace and made Kali a prisoner before the native troops and civil population showed the first signs of revolting. The people were so thoroughly cowed that the acting consul-general, Rennell Rodd, was enabled to proclaim Hamid ben Thwain, a grandnephew of Ali ben Said, and install him as Sultan without exciting the least symptom of insubordination or insurrection. The arrangement whereby the ports of the Benadir coast were given up to Italy was carried out on July 16 in a proclamation of the new Sultan, granting the administration of the ports and territories to the Italian Government for the period of three years.

**Uganda.**—The Kingdom of Uganda, inhabited by an intelligent and progressive race, extremely susceptible to educational influences, has possessed an organized government in which the King is an absolute monarch, next to whom is

the Katikoro, who is chief judge and commander of the army, and acts as King during his absence. The country is divided into 10 administrative districts, each under a great chief, who is responsible to the King. Of equal rank with these chiefs are the Mijasi and the Kimbugwe, and under the 12 great chiefs are innumerable leaders of various grades. The King is Mwanga, son of Mtesa, whom he succeeded in 1884. Capt. F. D. Lugard arrived in Mengo, the capital, in December, 1890, with a force of soldiers in the pay of the British East Africa Company, built a fort at Kampala commanding the capital, and exacted a treaty, by which the King accepted the direction of the company in financial, military, and foreign affairs. The King had prayed for the assistance of the company in his war with the Mohammedan party, but at first refused to sign the treaty accepting the sovereignty of the East Africa Company. While his people stood outside threatening to shoot him if he signed, and Capt. Lugard's Soudanese guards were drawn up with fixed bayonets and Capt. Lugard threatened to set a Mohammedan king on the throne, Mwanga signed, but called out, "If another white man, greater than this one, shall come up afterward these words shall be wiped out, and we make another treaty." Uganda had been placed within the sphere of British influence by the international agreements with Germany and Italy, but in attempting to establish a protectorate the company acted on its own responsibility without the direct sanction of the British Government. Mwanga had been expelled a year or more before, and, after several changes of kings, the Mohammedans finally arose against the Christians and drove them from the country. The Catholic and Protestant Christians entered into a league to recover their country and reinstate Mwanga on the throne, and they had accomplished this shortly before the arrival of Lugard. The treaty and the presence of the company's garrison excited the jealousy of the Catholic party, the most numerous of the four groups who made their religious affiliations a stepping stone to honors and offices and had before rushed into internecine strife on that account. The Catholics, with the Kimbugwe at their head, prevailed in the King's council, though the Katikoro was the leader of the Protestants, and they kept him from hoisting the British flag in spite of the arguments and threats of the English officers, for the people looked upon the flag as a Protestant emblem and the Catholics knew that their supremacy was at an end if the King raised the flag and embraced the Protestant religion. The Catholic priests told them that the British East Africa Company was a trading concern that had no authority to declare British sovereignty and impose the Protestant religion on the country. While the Waganda were excited by partisan feeling on this question and the missionaries were encouraging the rival parties to stand firmly on their rights, Capt. Lugard with a large part of his force set out on an expedition to enlarge the company's territory, to which he added the district of Ankoli, southern Unyoro, and Toru, gaining access to the great ivory-producing district round Lake Albert Edward and acquiring an invaluable salt lake. The Soudanese soldiers who formerly



served in the Egyptian Equatorial Province, and after being abandoned by Stanley's Emin Pasha relief expedition had settled at Kavalli on the west side of Lake Albert Edward, were brought down with their families and slaves, numbering altogether 4,500 individuals, and were settled in the newly acquired territory, where they could defend the line of forts built in southern Unyoro against an incursion of Kaba Rega or could be enlisted in the company's service if the garrison in Kampala needed strengthening. He had left Uganda with only a small guard under Capt. W. H. Williams, in his eagerness to forestall and frustrate the German expedition to the lakes, and when he returned he found the factions on the point of breaking out into open hostilities, and the King and the Catholic party ready to defy his power. A Protestant chief, Mulondo, precipitated matters by suddenly leaving the capital with his retainers, on the plea that the Catholics intended to burn his shamba, or plantation. The King sent out a large force to capture or kill him, but recalled it at the solicitation of the English. The war spirit could not be quelled, however, though drums were beaten and armed men gathered repeatedly without actually coming to blows. At last a man was shot in a quarrel about the ownership of a gun, Jan. 20, 1892. The King tried the case and discharged the homicide. Capt. Lugard then demanded through a native messenger that the murderer should be punished and other grievances of the Protestants redressed; otherwise there would be war. The King said calmly that he would abide by his decision, and the Catholics standing by retorted that the English "might fight if they would, but if they did they would be killed and their property confiscated." The King wrote on the following day a letter in which he enumerated a list of Catholic grievances and demanded their rectification in uncompromising terms. The Catholic bishop, when appealed to by Capt. Lugard to avert war, replied that his flock had suffered so severely through the partiality of the British officers that they would rather die with guns in their hands than submit to constant injustice. Lugard thereupon distributed arms among the Protestant natives, 450 altogether, while he remained with his troops in the fort. A battle took place in the town, Jan. 24, 1892, and the Catholics were fired on from the fort with the Maxim guns. The Catholic mission and church were burned, and the King and his party were put to rout, taking refuge on an island. The English then attacked them with their Maxim guns on the island, and when they attempted to escape in canoes sank the boats, drowning the natives in immense numbers. The King and the remnant of his party escaped to the large island of Sese, and when he was dislodged from this by Capt. Williams, went over to the district of Budu with the Catholic bishop and missionaries. A treaty was then imposed upon the Catholic party which assigned to them the Budu province, which formerly was Protestant, and prohibited them from extending their possessions or propagating their religion outside of its limits or from leaving it with arms in their hands, and which stipulated that the British flag should be hoisted in Budu, and the company's officers have supervision over

it and be allowed to establish stations there. Some of the best provinces in the neighborhood of the capital had been destined for the Catholics, but Capt. Lugard suddenly changed his mind and assigned these to the Mohammedans after he got the King into his power. The British officers used every inducement to get the King to return to Mengo, and promised the Catholics an equal distribution of lands if they would send him back. The Catholic missionaries, relying on this promise, persuaded Mwanga to return, and he then identified himself with the British or Protestant party, who henceforth held all the offices as well as three fourths of the lands. The Catholics, overcrowded in the narrow province to which they were exiled, forming only one seventh of the area of the country, died from starvation and pestilence, and becoming more and more desperate and discontented at the failure of Capt. Lugard to fulfill his promises, sold their property in order to procure arms and ammunition, imported through German East Africa, for the purpose of avenging their wrongs. Capt. Williams and Capt. Macdonald used their influence in vain with the King and his Protestant counselors to induce them to grant the Catholics lands enough to support them and some share of the court offices, and thus avert a new war and the establishment by the Catholics of an independent kingdom with one of the princes, sons of Karema, whom they refused to deliver up to Mwanga, as their King. The Mohammedan population also, less numerous than the Protestants or the Catholics, were dissatisfied at the conditions resulting from the ascendancy of the Protestants brought about by the British protectorate, which was confirmed in perpetuity by a new treaty signed by Mwanga on April 5, 1892. The Mohammedans were also banished to a province selected for them, while the Protestants had appropriated for their own use the choicest lands in the country—four times more than they needed for their support. The former Mohammedan King, Mbogo, and his principal followers were kept as prisoners in quarters close to the fort of Kampala. This was the situation still when Sir Gerald Portal, who had filled the post of British consul-general at Zanzibar for three years, arrived at Kaviroondo on March 3, 1893, with 230 Zanzibari soldiers to take over provisionally the authority of the British East Africa Company in Uganda. The company, having failed to obtain an imperial subsidy, and being unwilling to continue the occupation at its own cost, was authorized to evacuate the country on March 1, 1893. Capt. Lugard had returned to England some months before, leaving Capt. Williams in command at Kampala. Capt. Macdonald departed before him, but returned on receiving instructions from the Government of Lord Salisbury to make a report on affairs in Uganda. The first directions sent to Captain Williams were to evacuate Uganda and its dependencies on Dec. 31, 1892, but a subsequent order postponed the operation for three months. The King and his officers had no more influence or power in the country, having been reduced to the position of mere puppets of the company. The Protestants, more ignorant and unruly than the Mohammedans or the Catholics, committed robberies and depredations

against the other Waganda and the Wasoga and other neighboring tribes. Capt. Williams decided to collect a regular tribute in Usoga, which was divided in equal shares by the company and the King. He acquired a large quantity of ivory for the company and imposed a tax of 10 per cent. on ivory brought down by traders. Negotiations were entered into with King Kaba Rega, of Unyoro, who was willing to purchase peace if he could make satisfactory terms with the company.

When the Conservative ministers decided to terminate the authority of the chartered company in Uganda and ordered it to withdraw its forces, their policy was to continue the occupation with imperial forces and to build a railroad from the coast to Victoria Nyanza. They were careful, however, not to commit the Government to either part of this scheme, and when they retired they left the Liberals to decide whether Uganda should be retained or abandoned. Sir Gerald Portal, as imperial commissioner for the sphere of British influence, was instructed to endeavor to make British influence felt by the natives, to maintain peace and order, to develop legitimate trade, to secure the safe circulation of traders, and generally, "without undue interference with tribal government and native habits and customs, to pave the way for conferring on the natives the benefits of civilization." On Dec. 10, 1892, he was instructed by Lord Rosebery to go to Uganda with an adequate armed force on a special mission of inquiry. The results of this mission would enable the Government to form an opinion as to whether and in what form the official action of England should be substituted for that of the private company, or whether all European authority should be withdrawn; but the ministers promised to take no decisive action without submitting the question to Parliament after receiving the commissioner's report "on the best means of dealing with the country, whether through Zanzibar or otherwise." Meanwhile Sir Gerald Portal had a free hand to make any temporary arrangements in Uganda that seemed best. He was empowered to take over the stores and establishments of the East Africa Company in that country; he might for the moment subsidize the King, and was enjoined to impress upon him the wisdom of following advice tendered to him and to meet "with firmness and caution" every occasion that might arise. Points to be borne in mind in communications with the King and his chiefs were "the prevention of broils stirred up under the name of religion, the promotion of peace, the encouragement of commerce, the security of missionary enterprise, and the suppression of the slave trade." Besides the treaty of perpetual friendship with Mwanga, to which the British Government was not a party, there were 83 others with native chiefs that had been approved by the Secretary of State, and it was feared that the evacuation of the country in the face of these engagements "might have a prejudicial effect on the British good name in those regions." Sir Gerald Portal was therefore desired to report on the course to adopt with reference to this difficulty.

Before the dispatch of this mission on the receipt of Capt. Macdonald's report, the French

Government, Aug. 30, 1892, laid before the British Foreign Office the complaints of the French missionaries against the chartered company. M. Ribot subsequently explained that there was no question of the French going to Uganda, which was beyond the sphere of French influence; all that the French Government desired was that due consideration, respect, and fair dealing should be shown to the French Catholic missionaries. On Oct. 21 M. Waddington, French ambassador in London, submitted the question whether the British Government admitted the principle of indemnity for losses and grievances of French missionaries. Lord Rosebery replied that he must consult with his colleagues before acceding to the wide and novel principle of making a government liable for the acts of officials of a chartered company.

The internal condition of Uganda improved after the arrival of Sir Gerald Portal at Mengo, March 17, 1893. On March 30 he sent Capt. Portal and Major Owen to Toru to carry out a plan for the disposal of the Egyptian soldiers who had been stationed in 7 forts in Toru, and being without European commanders or obligations to the company, had committed depredations on the neighboring tribes. The entire force of 450 soldiers were enlisted into the English service. The two most distant forts were abandoned, and their garrisons brought down to the nearer ones, which still covered a line of 100 miles. The English officers remained to organize and discipline the Soudanese, diminished by 100 men, who were brought down to take the place of the Soudanese that Capt. Williams took back with him to the coast when he left Kampala on April 3. The slaves and followers of the Soudanese drafted to Kampala were formed into a colony near the fort. There were thus left in Toru 3,500, as the family and slaves of each soldier numbered about 10 individuals. Capt. Macdonald was appointed resident at Kampala and commandant of the district.

Sir Gerald Portal next gave his attention to the representations of Mgr. Hirth, the French bishop, regarding the Catholics who, in spite of the promises of Capt. Lugard, though they were not responsible for the war and had been defeated by the troops of the company, after gaining a victory over the Protestants, were still confined as rebels in the district of Budu, where they were gradually perishing from plague and starvation. After a long controversy Mgr. Hirth and Bishop Tucker, of the English Church Mission, were induced by Sir Gerald Portal to sign an agreement, April 7, whereby the Catholics were readmitted to the councils of the King and obtained several important offices and an extension of territory nearly as large as Budu. Besides Budu, the Catholics received the province of Kaima, the island of Sese, the district of Lwekula, and the shambas, or plantations of Mwanika in Mugema. In return they delivered up the young princes, not to Mwanga, but to the British resident, who took them under his guardianship, to reside within the precincts of the fort. After the death of the Catholic Rubuga, the King's sister, her office becomes extinct. The office of Kimbugwe was abolished forthwith, and instead of a single Katikoro, or minister of justice, a single Gabunga, or com-



mander of canoes, and a single Miyai, or commander of troops, one was to be appointed for the Catholics and one for the Protestants, subject to the approval of the resident and the last-named under his orders. The missionaries, the British special commissioner, and the military men were at one in the opinion that the Protestants and Catholics in Uganda could not be allowed to intermingle again without a recurrence of disorders, and that spheres of missionary activity should be settled upon to prevent the occurrence of similar religious wars in the neighboring countries. The local heads of the missions had no authority to divide the field definitively, but they entered into a temporary verbal agreement to confine their labors, the Catholics to the north and west, the Protestants to the countries east of the Nile toward the Indian Ocean. Both were desirous of establishing missions near Mount Ruwenzori, and Bishop Tucker would not consent to abandon to the Catholics the country between the lakes, but he agreed to establish no stations in Toru for six months.

Capt. Lugard, when his position was precarious, went out of his way to conciliate the Mohammedans, who are the most intelligent and civilized, though the least numerous of the three religious factions of the Waganda, or four, counting the adherents of the old pagan religion of Lubare, a kind of Nature worship, who have so dwindled latterly as to be unable to take a part in the struggle for supremacy. The Mohammedans knew that they were doomed to extinction if the country was annexed to the British Empire, and as soon as they saw that Sir Gerald Portal's proceeding tended to no other result they decided to frustrate it if they could. In the middle of June Sir Gerald Portal departed for the coast, and immediately afterward the Mohammedan chiefs, acting under the advice of Selim Bey, a former lieutenant of Emin Pasha, begun to raise legal difficulties regarding the way that they had been treated. They made advances to the Catholic party to form an alliance for the purpose of sweeping the Protestants and the English out of the country and defending its independence. Capt. Macdonald, co-operating with the French priests, induced the Catholics to join with the Protestants, and Selim's own Nubian soldiers, having taken the pay of the English and eaten their salt, refused to rebel. The Mohammedan Waganda rose in rebellion, and were crushed by the united Protestants and Catholics and driven out of the country. Sir Gerald Portal, who had turned back on receiving a dispatch from Capt. Macdonald, conveyed Selim Bey and Mboko, the Mohammedan King, as prisoners of war on his return journey to the coast, which he reached about the end of September, Selim having died on the journey.

**German East Africa.**—The German possessions in East Africa, estimated to have an area of 380,000 square miles and 1,760,000 inhabitants, passed out of the control of the German East Africa Company after the suppression by the German imperial forces of the Arab revolt of 1889. The German Government appointed an imperial commissioner to administer the country, leaving the company its commercial development. The value of the imports for

1890 was \$2,654,919, and for 1891 it was \$2,820,264. The exports were valued at 5,015,915 rupees in 1890, and in 1891 at \$2,353,000. The export of ivory was valued at \$1,330,000, and of rubber at \$239,565. An antislavery committee undertook to discharge the German obligations regarding the suppression of the slave trade. Under official patronage it raised a capital of 2,100,000 marks by a lottery and private subscriptions. Of this, more than 1,500,000 marks had been expended before the spring of 1893, of which 660,000 marks went for the expedition of Capt. Wissmann, having for its object the establishment of stations on Lake Tanganyika and the placing of a steamer, the "Wissmann," on the lake. Owing to the disturbed condition of the interior, resulting from the operations of the Congo State against the Arab slave raiders, Capt. Wissmann was unable to establish himself on Tanganyika and attack the slave trade in its stronghold among the Yaos. He launched the steamer on Lake Nyassa instead, and built a station at the north end of that lake. This station and the steamer were transferred to the Imperial Government in July, 1893. Baron von Soden, who was made imperial commissioner after the pacification of the coast Arabs in 1890, returned to Germany in April, 1893, and was replaced by Freiherr von Schele. A company has been formed for the construction of a railroad from Tanga to Karagwe, to open up to commerce the rich Usambara district. A central railroad from Dar-es-Salam to the Victoria Nyanza or to Tabora is also contemplated. The boundary between the German and English possessions in the vicinity of Mount Kilimanjaro has been delimited by a joint commission consisting of Dr. Karl Peters and C. S. Smith, British consul at Zanzibar, and defined in an agreement signed at Berlin in July, 1893. Freiherr von Schele set out from the coast for Kilimanjaro on July 6 to re-establish in that district the authority of the German Government, which had been set at naught by Meli, the son and successor of the Sultan Mandara since his victory over the German troops in June, 1892. On Aug. 12 Meli's fortified camp was stormed by the Askari soldiers and taken after a sharp fight, in which a German lieutenant and 4 men were killed and 24 were wounded. Another expedition was sent out to punish and subjugate the Wahehes in Ugogo. The colonial troops stormed Kanjenje, the stronghold of the chief Sinjangaro, and captured it, with the loss of several men, including 1 lieutenant killed and 1 wounded.

**Nyassaland.**—The districts that were the scene of operations of Scotch missionaries and of the African Lakes Company, situated west of Lake Nyassa and south of it along the Shire river, were declared to be within the sphere of British influence in 1889, and were proclaimed a British protectorate on May 14, 1891. The population is about 2,000,000, of whom 900,000 are in 8 districts administered by British officials. The imperial commissioner is H. H. Johnston. A military force of 100 Sikhs and 150 Zanzibaris is maintained, and there are besides two gunboats on the lower Shire, an armed steamer on the upper Shire, and two gunboats on Lake Nyassa. The regions not occupied by British forces are

subject to murderous raids not only of Arab slave hunters, but of the Angoni, a branch of the Zulu race who live by pillage. The people of the settled districts are Christianized to some extent by the six missionary societies and have been taught to labor. The exports are ivory, hippopotamus hides and teeth, oil seeds, and tobacco. The revenue from customs and taxation is about £6,000.

**Portuguese East Africa.**—The Portuguese possessions on the eastern side of the African continent, restricted by the Anglo-Portuguese agreement of June, 1891, to the coast region and the banks of the Zambesi up as far as Zumbo, were constituted by the decree of Sept. 30, 1891, into the State of East Africa, divided into 2 provinces, Mozambique and Lourenço Marques, which are divided by the Zambesi river. The executive head of the whole state is a commissioner, appointed for three years, who resides alternately at the towns of Mozambique and Lourenço Marques. The imports for 1891 were valued at 3,771,855 milreis, and the exports, consisting principally of oil nuts, rubber, and ivory, at 1,416,397 milreis. Besides the Delagoa Bay line, 57 miles long, there are plans to construct 428 miles of railroad. The telegraphs have a length of 280 miles.

In the latter part of 1892 the negroes who formerly followed Manuel Antonio began to raid and plunder in the Zambesi district of the Portuguese dominion. The Portuguese officers west of Sena took refuge in that town. Col. Pavia d'Andrade took a considerable force up to Sena, and garrisoned the fort of Ignacerera, a few miles up the river, but did not venture to engage the enemy, who were well armed and numbered 3,000 or 4,000. The rebels were afraid to attack the fort, but they sacked the station of Chupanga, belonging to the Mozambique Company. Peace was finally restored, but not by the subjugation of the rebels. A new commercial corporation, the Nyassa Company, was chartered in March, 1893, with a nominal capital of 5,000,000 milreis, which has undertaken to build a railroad to Lake Nyassa.

**ECUADOR**, a republic in South America. The Congress, which meets annually on June 10, at Quito, consists of a Senate and a House of Representatives. The Senators are elected for four years, by provinces, 2 for each of the 16 provinces, and the Representatives for two years in the proportion of 1 to every 30,000 inhabitants, all by the direct suffrage of Roman Catholic citizens twenty-one years of age who can read and write. The President and the Vice-President are likewise elected by popular suffrage, each for four years, but not at the same election. The Vice-President is the chief of the Council of State. Luis Cordero was elected President on June 30, 1892. The Vice-President is Dr. P. Herrera. The Cabinet was composed of the following members in the beginning of 1893: Minister of the Interior and of Foreign Affairs, V. L. Salazar; Minister of the Treasury, A. de Icaza; Minister of Public Instruction, P. J. Cavallos Salvador; Minister of War and Marine, Gen. J. M. Savasti.

**Area and Population.**—Ecuador has an area of about 200,000 square miles, and 1,271,860 inhabitants, of whom about 100,000 are

whites, 300,000 mixed, and the rest Indians. Quito, the capital, has a population of about 50,000, and Guayaquil, the chief port, has 44,515.

**Finances.**—The budget for 1891 estimated the revenue at 10,334,536 sucres (1 sucre=62 cents), of which 4,090,387 sucres were derived from the national bank, 2,499,670 sucres from customs, 1,549,129 sucres from exchange, 361,226 sucres the surplus of 1889, 132,566 sucres from taxes, 166,337 sucres from stamps, 416,888 sucres from monopolies, 81,698 sucres from sales of lands, and 1,036,635 sucres from various other sources. The expenditure was estimated at 10,112,436 sucres, of which 5,022,165 sucres were for financial purposes, 1,535,864 sucres loss by exchange, 1,152,714 sucres for the army and marine, 638,005 sucres for public buildings, 491,493 sucres for public instruction, 206,335 sucres for posts and telegraphs, 1,906 sucres for the legislature, 20,944 sucres for the executive, and 1,042,810 sucres for various other purposes.

**Defense.**—The standing army consists of 3,341 officers and men, who are distributed among 1 brigade of fortress artillery, 1 brigade of field artillery, 4 battalions of infantry, 2 columns of light infantry, and 1 regiment of cavalry. The navy consists of a small cruiser, 2 small gunboats for river service, and 1 transport, manned by about 120 men.

**Commerce.**—The total imports in 1891 amounted to 7,241,095 sucres, compared with 10,016,352 sucres in 1890, and 9,681,450 sucres in 1889. The exports in 1891 were valued at 7,351,800 sucres, in 1890 at 9,761,634 sucres, and in 1889 at 7,910,205 sucres. The principal imports and their values in 1891 were: Cotton and other tissues, 2,074,510 sucres; provisions, 1,091,440 sucres. The principal articles of export in 1891 were: Cocoa, 4,544,398 sucres; coffee, 659,061 sucres; India rubber, 415,776 sucres; hides, 107,312 sucres; straw hats, 315,874 sucres; sugar, 154,531 sucres.

The following table shows the trade with the leading countries in 1891, in sucres:

COUNTRIES.	Imports from.	Exports to.
France.....	1,780,563	2,493,243
Great Britain.....	1,828,816	935,315
United States.....	1,496,062	999,410
Germany.....	1,042,359	1,091,575
Spain.....	180,519	599,349
Peru.....	512,016	159,046
Chili.....	246,045	411,488
Colombia.....	46,637	213,884

The exports of gold and silver in 1891 amounted to 532,536 sucres.

**Navigation.**—During 1891 there were 236 sailing vessels, of 26,682 tons, and 370 steamers, of 346,891 tons, entered at the ports of Ecuador, and 239 sailing vessels, of 26,755 tons, and 375 steamers, of 349,993 tons, cleared. Of the total number of vessels entered, 307, of 249,057 tons, were British; 176, of 8,394 tons, were Ecuadorian; and 123, of 116,122 tons, were of other nationalities.

**Communications.**—The only railroad open to traffic is the one running from Duran to Chimbo, 63 miles, but an extension to Sibambe is under construction. The length of telegraph wires is about 1,074 miles. The number of letters, postal cards, samples, and printed mat-



ter expedited by the post-office in 1891 was 3,024,034.

**Political Discontent.**—The advanced Liberals, who rose in rebellion in 1884 and attempted to start a revolution in 1886 in the hope of annulling the close union of church and state that was reaffirmed in the Constitution of 1883, have persistently opposed every administration that has been in power since the overthrow of the dictator Veintemilla. They complain of heavy taxes levied for the maintenance of the clergy, especially of a property tax of 3 per mille imposed for purely ecclesiastical purposes, and of interference by the clergy in affairs of state. The revolutionary spirit, damped for a time by the severe repression of the former outbreaks, has been rife since the election in an irregular manner of Señor Cordero, although he is a representative of the moderate section of the party in power. In February, 1893, there was an attempt to start an insurrection in the province of Esmeraldas, where a state of siege was proclaimed. A fight took place in the town of that name, in which the Government troops were victorious. The Government forbade the circulation of the Radical Spanish-American newspaper "El Progreso," published in New York, and endeavored to induce the United States postal authorities to refuse to forward copies destined for Ecuadorian subscribers, by representing that it was an immoral publication.

**EGYPT**, a principality in northern Africa, tributary to Turkey. The Government is an almost absolute monarchy, and the succession is direct from father to son. The ruling prince bears the title of Khedive, and, by a firman of the Sultan issued in 1873, has the right of maintaining an army and of concluding commercial treaties with foreign powers. The present Khedive is Abbas Pasha, born July 14, 1874, who succeeded to the throne upon the death of his father, Mohammed Tewfik, Jan. 7, 1892. The administration is by a ministry, subject to the ruling of the Khedive. Since the intervention of England to restore the authority of the Khedive, in 1882, the country has been occupied by a British army, and since January, 1883, the Khedive appoints an English financial adviser, who has a seat in the Council of Ministers. Without his advice no financial decision can be made. The Council of Ministers comprises the following six departments: Interior, in charge of the President of the Council; Finance, Justice, War, Public Works and Instruction, Foreign Affairs. There are also, under an organic law promulgated by the Khedive in 1883, a Legislative Council, a General Assembly, and provincial boards, all of which are elective. All legislation is submitted to the Legislative Council, but the Government is not bound by its advice. The General Assembly is summoned every two years, and no new direct personal or land tax can be imposed without its consent.

**Area and Population.**—Egypt proper extends from Wady Halfa, in 21° 40' of north latitude, to the Mediterranean, and has a total area of about 400,000 square miles; but the Nile valley and delta, which constitute the settled and cultivated area, cover only 12,906 square miles. The population of this settled portion of the country, according to the census of 1882, was as

follows: Egyptians, sedentary, 6,480,600; Egyptians, nomad, 245,779; foreigners, 90,886; total, 6,817,265. Of the total population, 3,401,498 were males and 3,415,769 females. The number of foreign residents has increased largely within recent years. Cairo, the chief city, had a population of 368,108, and Alexandria 208,755.

**Finances.**—The International Commission of Liquidation, appointed in 1880 to examine the financial situation of Egypt, estimated the annual revenue for and after 1882 at £ E. 8,411,622 (£ E. = \$5), £ E. 35,513,734 being assigned to the debt and £ E. 4,897,888 to the expenses of the Government. The budget for 1893 estimates the revenue at £ E. 10,010,000, of which £ E. 4,956,000 are derived from the land tax, date-tree tax, etc., £ E. 129,000 from urban taxes, etc., £ E. 1,410,000 from customs, £ E. 210,000 from *octroi* duties, £ E. 180,000 from salt and natron duties, £ E. 85,000 from fisheries, £ E. 79,000 from navigation dues, £ E. 1,600,000 from railways, £ E. 40,000 from telegraphs, £ E. 115,000 from the port of Alexandria, £ E. 222,000, from posts, £ E. 110,000 from light-houses, £ E. 370,000 from Ministry of Justice, £ E. 90,000 for exemption from military service, £ E. 86,000 from rents on Government property, £ E. 15,000 from governorship of Suakin, £ E. 154,000 from pension fund, and £ E. 254,000 from other sources. The total expenditure is estimated at £ E. 9,550,000, of which £ E. 4,004,000 are for the service of the debt, £ E. 665,041 are for tribute to Turkey, £ E. 114,127 for the Khedive's civil list, £ E. 114,127 for the civil lists of Ismail Pasha and his family, £ E. 54,934 for the Khedive's private cabinet, £ E. 460,949 for the Ministry of Public Works, £ E. 383,783 for the Ministry of Justice, £ E. 319,989 for the administration of the provinces, £ E. 110,294 for the Ministry of Finance, £ E. 117,151 for the Ministry of the Interior, £ E. 92,544 for the Ministry of Public Instruction, £ E. 115,554 for other ministries, £ E. 132,376 for administration of the customs, £ E. 40,311 for the collection of *octroi* duties, £ E. 46,896 for the collection of the salt and natron duties, £ E. 7,978 for the fisheries, £ E. 2,979 for navigation, £ E. 771,703 for railroads, £ E. 39,200 for telegraphs, £ E. 23,000 for the port of Alexandria, £ E. 203,221 for the postal service, £ E. 25,142 for lighthouses, £ E. 712,000 for public security, police, prisons, Ministry of War, and the British army of occupation, £ E. 119,360 for the administration of Suakin, £ E. 435,000 for pensions, £ E. 400,000 for the suppression of the *corvée*, and £ E. 50,556 for sundry other purposes.

The public debt at the end of 1892 amounted to £ E. 106,372,160, of which £ E. 8,936,800 represent the guaranteed loan at 3 per cent., £ E. 29,400,000 the privileged debt bearing interest at 3½ per cent., £ E. 55,986,580 the unified loan at 4 per cent., £ E. 7,223,020 the Daira Sanieh loan at 4 per cent., and £ E. 4,826,460 the Domains loan at 5 per cent.

**Military Forces.**—The Egyptian army has a total strength of 13,000. It has about 60 English officers, and is commanded by an English general officer, who bears the title of Sirdar. The present Sirdar is Brig.-Gen. Horatio Herbert Kitchener, who was formerly British governor-general of the Red Sea littoral and com-

mandant at Suakin. The British army of occupation numbered in December, 1891, 3,103 men, but was increased, after the ministerial crisis in January, 1893, to about 4,000, and is commanded by Maj.-Gen. Forestier Walker.

**Commerce and Production.**—The imports for 1891 amounted to £ E. 9,201,390, an increase of over £ E. 1,200,000 over the preceding year, while the exports for 1891 were £ E. 13,878,628, exceeding those of the preceding year by over £ E. 2,000,000. The imports of specie amounted to £ E. 2,824,861, and the exports to £ E. 1,523,950. Of the total imports, 37 per cent. came from Great Britain and her Mediterranean possessions, 18 per cent. from Turkey, 8 per cent. from the Eastern possessions of Great Britain, 9 per cent. from Austria-Hungary, 10 per cent. from France and Algeria, 1 per cent. from Greece, 3 per cent. from Italy, 4 per cent. from Russia, and 10 per cent. from other countries, including £ E. 21,439 from America. Of the exports, 47 per cent. went to Great Britain and her Mediterranean possessions, 2 per cent. to Turkey, 4 per cent. to Austria-Hungary, 6 per cent. to France and Algeria, 4 per cent. to Italy, 8 per cent. to Russia, and 29 per cent. to other countries, including £ E. 81,295 to America.

The chief imports in 1891 and their values were: Cotton goods, £ E. 1,943,892; silk, woolen, and linen goods, £ E. 1,187,331; coal, £ E. 473,845; hosiery and apparel, £ E. 349,985; timber, £ E. 426,552; coffee, £ E. 294,998; wine, beer, and spirits, £ E. 291,570; tobacco and cigars, £ E. 464,426; petroleum, £ E. 302,287; machinery, £ E. 161,497; iron and steel goods, £ E. 465,649; indigo, £ E. 173,680; fruits, £ E. 267,577; animals, £ E. 181,552; wheat and flour, £ E. 107,933; rice, £ E. 131,057; refined sugar, £ E. 56,393.

The chief exports and their values were: Cotton, £ E. 8,988,826; cotton seed, £ E. 1,544,963; sugar, £ E. 572,694; beans, £ E. 908,441; wheat, £ E. 531,264; rice, £ E. 125,654; maize, £ E. 434,146; hides and skins, £ E. 85,879; onions, £ E. 87,525; lentils, £ E. 80,100.

The agricultural population amounts to about 60 per cent. of the whole, and over 5,000,000 acres of land were under cultivation in 1891. There are three crop seasons. Winter crops, consisting of cereals, are sown in November and harvested in May and June; summer crops, such as cotton, sugar, and rice, are sown in March and harvested in October and November; and autumn crops—rice, sorghum, and vegetables—are sown in July and gathered in September and October. The most important crop is cotton, of which upward of 850,000 acres were planted in 1891, and the yield was about 550 pounds an acre. Cattle and farm animals, including horses and camels, numbered 1,668,860.

**Navigation.**—The number of vessels arriving at the port of Alexandria in 1891 was 2,163, of 1,807,717 tons, and the number cleared was 2,158, of 1,765,716 tons. The arrivals and clearances at the other ports numbered 6,456, of 8,605,236 tons. Of the vessels entered at Alexandria 647, of 858,437 tons, were British: 130, of 276,227 tons, were French; 932, of 231,018 tons, were Turkish; 106, of 154,568 tons, were Austrian; 72, of 107,970 tons, were Russian; 100, of 89,252 tons, were Italian; 94, of 24,279 tons, were Greek;

33, of 38,679 tons, were Swedish and Norwegian.

**Internal Communications.**—There were 1,158 miles of railroad in operation in 1891, and 88 miles under construction. The number of passengers carried in 1891 was 5,469,202, and the amount of freight, 2,308,463 tons. The gross earnings were £ E. 1,631,611, and the expenditure £ E. 706,602. The Government, at the beginning of 1892, had 3,168 miles of telegraph, with 5,430 miles of wire. The number of telegrams in 1891 was 1,303,537. The post-office handled 9,871,000 letters and cards, of which 3,250,000 were foreign; and 7,245,000 newspapers and packets, of which 2,343,000 were foreign.

**The Suez Canal.**—The number of vessels that passed through the canal in 1891 was 4,207, of 12,217,098 gross tons. Of these, 3,217, of 9,484,608 tons, were British; 171, of 616,964 tons, were French; 318, of 870,548 tons, were German; 116, of 275,861 tons, were Italian; 147, of 369,347 tons, were Dutch; 51, of 169,399 tons, were Austrian; 55, of 114,016 tons, were Norwegian; 28, of 98,627 tons, were Spanish; 21, of 64,554 tons, were Russian; 40, of 60,619 tons, were Turkish; 29, of 74,798 tons, were Portuguese; 6, of 12,794 tons, were Japanese; 5, of 4,571 tons, were Greek; 1, of 619 tons, was American; 1, of 963 tons, was Danish; and 1, of 294 tons, was Egyptian. The number of passengers carried through the canal in 1891 was 194,467. The total receipts for the year were £ E. 2,196,673, and the net profits 50,591,892 francs.

**Ministerial Crisis.**—A ministerial crisis, which partook of the nature of a *coup d'état* on the part of the young Khedive, occurred in January, 1893. Near the close of 1892 the Premier, Mustafa Fehmi Pasha, was very ill, and, as his death was expected, the matter of appointing his successors engaged the attention of the Khedive, and he had a conversation on the subject with Sir Edwin Palmer, Financial Adviser of the Government. On Jan. 1, Lord Cromer, the British consul-general and representative in Egypt, conferred with the Khedive, and was informed of his desire to appoint Tigrane Pasha. Tigrane is an Armenian and a Christian, and, as a member of the Mustafa Cabinet, had exhibited considerable ability; but Lord Cromer objected to his appointment, on the ground that under the existing circumstances the Premier should be a Mohammedan, and he suggested to the Khedive the appointment of Riaz Pasha. Meantime Mustafa Fehmi became convalescent, and it was agreed that, inasmuch as he would soon be able to resume his duties, there was no longer any question of naming another Prime Minister. But on Jan. 15, without further consultation with the representative of Great Britain, the Khedive, acting, as was believed, in resentment of the dictation of Lord Cromer and largely upon the advice of Roullier Bey, his former tutor and secretary, demanded the resignation of Mustafa Fehmi, and, upon its being refused, peremptorily dismissed him, as well as the Ministers of Finance and Justice, and named Fakhri Pasha as Prime Minister. Fakhri, who is a Turk, believed to entertain strong Turkish and French proclivities, had formerly been Minister of Justice, from which position he was dismissed on Lord Cromer's advice on account of his op-



position to judicial reform. Upon being notified of the Khedive's action Lord Cromer asked for an explanation of what he deemed a violation of the recent understanding between them. The Khedive based the change upon the ground that the state of Mustafa's health would not permit him to resume his work for a long time. The Khedive, at the urgent request of Lord Cromer, promised that he would stop the issue of any official notification of the change until the English representative could communicate with his Government. Meantime the British officials in Egypt did not recognize the Fakhri ministry, and two days later Lord Cromer communicated to the Khedive the reply of the British Government, to the effect that the Government expected to be consulted in so important a matter as a change of ministry; that no present change seemed necessary; and that the proposed nomination of Fakhri Pasha could not be sanctioned. Lord Cromer further informed the Khedive that in the event of the reinstatement of Mustafa Fehmi Pasha no objection would be made to the proposed changes in the Departments of Finance and Justice. On the following morning the Khedive expressed to Lord Cromer his regret at the occurrence of the recent incident, but said that it would humiliate him and make him lose all authority if he were obliged to reinstate Mustafa Fehmi, and he therefore requested that he might be permitted to name Riaz Pasha in the place of Fakhri. This was assented to by Lord Cromer, and the Khedive further expressed his earnest wish to entertain friendly relations with the British Government, and said that in future he would be willing to follow the advice of that Government in all important matters.

**The New Cabinet.**—The reconstructed Council of Ministers was constituted as follows: President of the Council and Minister of the Interior, Riaz Pasha; Minister of Finance, Butros Pasha; Minister of Justice, Mazlum Pasha; Minister of Public Works and Instruction, Zeki Pasha; Minister of Foreign Affairs, Tigrane Pasha; Minister of War, Jussef Chuhdi Pasha. Riaz Pasha, the new Premier, had held that office for a time during the reign of the father of the present Khedive, but received his dismissal in 1891 on account of his attempts to thwart English policy in Egypt. During his retirement, however, he showed himself more favorable to the existing condition of affairs, and approved most of the reforms introduced by the English. He has amassed great wealth, and his ability, knowledge of the country, and independence of character were generally conceded. The Ministers of Public Works, Foreign Affairs, and War were members of the old Cabinet. A formal protest was laid by France against the action taken by Lord Cromer with regard to the nomination of Fakhri Pasha, and the attitude of the British Government was also condemned in Russia; but in Germany and Austria it was commended. Notwithstanding the fact that the Khedive had yielded, apparently without reservation, to the demands of Great Britain, he allowed it to appear in the local press that he had gained a substantial victory, and virtually established the principle of independence in ministerial appointments. Large native deputa-

tions who came with congratulations were received by him, and the ultra-Mohammedan press became very violent against the English. The belief became quite general that the Khedive had determined to put to the test the whole question of British occupation and control, and a general feeling of public insecurity was prevalent in Cairo, and to a less extent elsewhere in Egypt. This condition of affairs led Lord Cromer, after conference with Gen. Walker, commanding the army of occupation, to request on Jan. 19 that his Government should permit him to make the announcement that the garrison would be increased. He received such authority on Jan. 23, and the announcement at once had a calming effect and was accepted as a decisive answer to the question of the continuance of English control in Egyptian affairs. Early in July the Khedive paid his first visit to his suzerain, the Sultan, at Constantinople. He was attended by Tigrane Pasha, Minister of Foreign Affairs, and a suite of nine important Egyptian officials, and as he was followed during the succeeding week by a considerable number of prominent members of the National party, the opinion prevailed quite generally that it was the Khedive's intention to make his visit the occasion for an appeal praying the Sultan to demand the evacuation of Egypt by the English. But if the young viceroy entertained such views, there was no evidence that they were encouraged by the Sultan; on the contrary, it was believed in diplomatic circles that the Khedive had been advised to modify his anti-English attitude.

**The Dervishes.**—On Dec. 31, 1892, two attacks were made by dervishes. One party of 400 camelmen made a raid on the village of Gamia, a few miles south of Wady Halfa, but were repelled by a detachment of Egyptian soldiers. Another party of 350 dervish camelmen arrived at Gamia the following day, expecting to join their comrades. They were vigorously attacked by the Egyptians, and retreated so hurriedly as to leave their dead and a considerable quantity of arms and provisions. They were pursued by a camel and cavalry corps and overtaken at Ambigol Wells, Jan. 2, and defeated with heavy losses on both sides, the dervishes again retreating southward. Osman Digna, at the head of a band of dervishes, made a raid in the vicinity of Tokar, on April 8, and captured a number of cattle. He was pursued by a detachment of mounted infantry, and the cattle were recaptured and 12 of the dervishes killed. On July 26 a body of dervishes 500 strong arrived at Bayress, in the Great Oasis, 130 miles from Ghirgeh, the Upper Egypt Railway terminus. Troops were sent out, but did not succeed in intercepting the band. Osman Digna was established in the hills at Amet, about 80 miles southwest of Suakin, from which stronghold his swift-moving parties were dispatched in all directions. His operations had stopped trade on the Suakin-Berber road.

**Courts and Police.**—The annual statistics issued by the native tribunals in April showed that no arrears existed on the criminal side, and none on the civil side except such as were caused by the parties themselves, and that the courts of summary jurisdiction, spread over the country, were doing the bulk of the work. The litigants

were mostly poor and the amounts involved small, and it was noted that there were but few appeals from the summary courts, and that the majority of appeals did not succeed. On the criminal side there was a diminution of the graver crimes, such as murder and brigandage, while an increased number of convictions for lesser offenses proved greater activity on the part of the tribunals and the police. The number of murders had decreased from 347 in 1891 to 289 in 1893. The activity and efficiency of the courts was attributed to the surveillance of the Judicial Committee of Inspection.

The mixed tribunals were instituted in 1876 as a substitute for consular jurisdiction, and have done good service. In February, 1894, these courts may, in accordance with the rules of their creation, either expire or be prolonged for another period of five years. Looking forward to that date, the Judiciary Adviser to the Khedive, Justice Scott, proposed that the jurisdiction of the mixed tribunals should be more strictly defined, in order to check a tendency to encroach on the native courts. His reforms proposed that it should be authoritatively settled that the mixed tribunals have no jurisdiction concerning land where only natives were affected; that the Land Registry Office should be placed under the control of the Minister of Justice, but be clerically administered by qualified Europeans; that a court of revision, composed partly of Europeans and partly of native lawyers, should be instituted with a view to the establishment of a system of jurisprudence on all purely land questions; that a *cour de conflit*, similarly constituted, should settle in final appeal all differences as to the due competency of the two systems; that the mixed tribunal at Mansura should be dissolved and replaced by four mixed courts of summary justice, with jurisdiction up to £ E. 100, to be located at Port Said, Mansura, Tanta, and Assint. The Council of Ministers threw out the propositions relating to the Land Registry Office and the Court of Revision as being against the interests of Egyptians, but agreed to submit the other three to the powers for their decision. The entire plan of Justice Scott had received the approval of the Mustafa Fehmi Cabinet.

On April 18 a circular was issued by Riaz Pasha, settling differences that had arisen between the ministry and the Inspector-General of Police. It recognized the Inspector-General as the head of the police, and declared him responsible to the Premier for the public security. It also provided that the provincial commandants should be responsible to the provincial governors, and that the latter should correspond on police matters with the Inspector-General. As the police is an entirely English department, this circular was regarded as showing a disposition to adopt English views, and to substitute a conciliatory for a hostile policy.

**ENGINEERING. Canals.**—The North-Sea-Baltic Canal has been carried forward with the slow carefulness characteristic of German engineering. Its completion for service is officially announced for 1894. The ship canals from the sea to Manchester, England, and across the peninsula at Corinth, Greece, have been opened to commerce, and the Chicago Drainage Works are

fast approaching completion. All these have been described in recent issues of the "Annual Cyclopædia."

**Water Supply.**—The city of Galveston, Texas, has acquired an apparently exhaustless supply of pure water by the operation—unprecedented, it is believed—of damming a subterranean river. It was known that such a river existed within a practicable distance, its bed being in a valley about 1,000 feet wide. The city engineer, after much opposition and derision, succeeded in getting an appropriation, and sank five trial wells to define the width of the stream. This done, he tunneled from well to well, making a continuous excavation, against the down-stream side of which he built a masonry dam, its foundation going below the bed of the stream, which was clearly defined. Water accumulated so fast that a central section had to be left open, and during the last days of active work a powerful steam pump was employed to keep the water down so that the workmen could finish. The trial wells still remain open, and although the city mains are full, water is constantly flowing over the top of the subterranean dam.

**Tunnels.**—The Continental Divide has been pierced by the engineers of the Colorado Midland Railroad, about 20 miles west of Leadville. The work is known as the Busk-Ivanhoe Tunnel, from the two stations at its respective ends. It is 9,394 feet long, 1,300 feet below the crest of the mountain range, and 10,800 feet above the sea level. Work was begun at both ends Oct. 8, 1890, and the divide was pierced 1,000 feet west of the middle point, on Oct. 17, 1893. As usual in such works, there was a race between the two gangs of workmen, but the eastern gang won, owing partly to troublesome inflows of water in the western half of the work. Mr. B. H. Bryant, chief engineer of the road, conceived the idea of this tunnel, which avoids 10 miles of heavy grade track, and will, it is estimated, save the railroad \$70,000 a year in running expenses. The total cost of the work was about \$1,000,000, which is very moderate, since this portion of the backbone of the continent is nearly all solid granite. Mr. W. H. Leffingwell was the engineer in charge of the work.

**Ferry Bridge.**—At Bilbao, Spain, a new type of bridge has been opened recently, which possesses merits that commend themselves for comparative cheapness and utility, where it is desirable to keep a water way open for the passage of large vessels and at the same time provide for the accommodation of shore-going traffic. A suspension bridge is first erected at such height above the water as is demanded by the local conditions. Upon this a truck is arranged to run back and forth, and from the truck a platform is suspended, by means of wire ropes, suitable for the use of passengers or vehicles. No costly approaches are necessary, since the roadway of the bridge is used only by the truck or traveler, and the suspended passenger platform is readily adjustable to its piers without reference to the rise and fall of tides. Don Alberto de Palacio is the inventor of this device. He is also the designer and architect of a superb combination of bridge and building in Bilbao, which rests upon arches over a river, permitting the passage of barges and the like, and rendering



available for public purposes a portion of the city heretofore unsightly and objectionable.

**Submarine Foundations.**—A new process of construction is described by F. Neukirch, of Bremen, in a paper published in the "Transactions of the American Society of Civil Engineers." It has been tested practically near Bremen, with the alleged result of producing monolithic submarine foundations. The conversion of sand and gravel *in situ* is effected by forcing commercial cement in the form of powder through a pipe to the desired depth. Air pressure is used, and cement is driven through several small holes with considerable force, causing a bubbling action in the wet sand, so that an intimate admixture is effected. Observation shows that a natural bed of sand, after having one fifth of its volume of cement injected into it, occupies less space than before. The space to be concreted is divided into small sections 8 to 12 inches square, and each of these is successively impregnated with cement, so as to secure uniformity. To suspend the operating tube a movable tripod is erected, and the air blast is carried through a flexible tube. The hardening process is slow but sure, and is comparatively inexpensive. It is also applicable to imbedding piles in cement, to inclosing sewers already in place, and to numerous other engineering operations of the greatest practical utility on land and sea.

**Dynamite Dredging.**—Off Brunswick, Ga., some interesting and successful experiments are reported. The harbor of this port is formed by St. Simon's Sound, opening into the Atlantic through a channel having a natural depth of about 17 feet at mean low water. This was closed by a wreck in 1890, and although the ebb and flow of the tides opened new channels, the practicable depth was reduced to about 11½ feet. Failing in an effort to secure a share of the river and harbor appropriation, Brunswick wisely determined to act for herself, and, failing again to procure a dredger, C. P. Goodyear, a lawyer, suggested experiments with dynamite. Work was begun July 8, 1891, and on Aug. 22 following a depth of 13.3 feet at mean low water was reported in a straight new channel. On the strength of this result authority was obtained from Congress to continue the work. At latest accounts about 60,000 pounds of dynamite had been exploded, at an expenditure of about \$30,000, and a uniform gain of 4 feet in depth is reported. Mr. Goodyear began with small charges of 15 pounds, but, learning from experience, increased them to 50, 100, and 200 pounds. No tendency to shoal has developed, and apparently the undertaking affords another example of successful engineering on the part of a layman.

**Electricity** is and must continue to be the absorbing subject of investigation for engineers of the younger school. No engineer, indeed, of whatever school, can afford to ignore its demands. Not only are such gigantic enterprises as the conversion of Niagara into light, heat, and power commanding the attention of the world, but everywhere the perennial forces of nature are harnessed for the service of man. The time is fast approaching when every considerable waterfall will have its value, and sooner or later the tremendous forces of ocean waves and tides will contribute to the same end. Thus is one great

obstacle to the use of electricity overcome—namely, the heavy expense of running electrical plants by artificial means, involving the consumption of costly fuel. Only a year or two ago the transmission of power from available waterfalls and rapids was limited to short distances, but now one can not read the news items of a daily paper without learning of fresh instances where enterprising towns draw light, heat, and power from streams 5 or 10 miles distant, whose only mission has heretofore been to furnish recreation for a few fishermen. It is often the case that where coal is dear, water power is cheap and near at hand, rendering it possible to light streets and houses better, and run machinery and cars at a comparatively inexpensive rate. In many States the legislatures have been so overwhelmed with petitions for charters for electric railways that they have been obliged to postpone action in individual cases until general laws could be framed in the interest of all concerned.

That the unsightly, inconvenient, and dangerous overhead trolley systems are destined to give way to conduit lines, and these eventually perhaps to storage batteries, must be evident to any one who watches the progress of electrical sciences; but whatever the ultimate outcome of invention, natural sources of power, whether of air or water, must retain a definite value.

**Electric Propulsion.**—The electric tramway, as used mainly for passenger traffic on short lines, is acquiring such importance that some brief account of its principles is desirable. At present, *power*, whether exerted by wind, water,

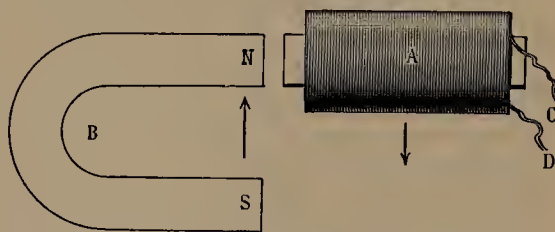


FIG. 1.—CONVERSION OF POWER INTO ELECTRICITY.

or steam, is essential to the production of electricity, which must in turn be converted back into power before it can do its work. The great advantage of this lies in the marvelous facility with which electricity can be sent along a wire, just as water can be carried along a flume. The conversion of original power into electricity is effected by means of a dynamo, which consists of a number of spools of soft iron wound with insulated copper wire. A, Fig. 1, shows such a spool in a simple form. Now suppose several such spools mounted upon a wheel so placed in relation to a powerful magnet that one end of the soft wire-wound iron will nearly touch the two poles of the magnet when the wheel revolves. Such is the mysterious and lightninglike action of electricity that its nature changes whenever it passes a pole of the magnet, and an electric current flashes not only through it, but through its surrounding wire, and may be transmitted thence to a fixed wire or rod leading anywhere, provided it comes back to its starting-point. From any part of the fixed wire electricity may be drawn merely by touching it with

a metal conductor, and if led to another dynamo will set it in motion in sympathy with the original. This second dynamo is called, to distinguish it from the original, a "motor," but it is practically identical in construction, and is con-

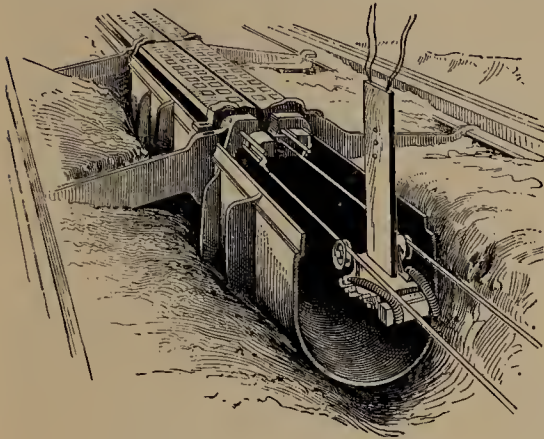


FIG. 2.—THE CONDUIT SYSTEM.

nected by the ordinary mechanical devices with the driving wheels of the car. Precisely *why* a wheel (dynamo) revolving at one end of a wire should drive another wheel (motor) at the other end, no one has yet found out. It simply does it, and we accept the service half incredulously as yet, but recognizing it as full of promise to the engineer. The connection between the fixed wire and the moving motor is usually effected by means of a grooved wheel fixed upon the end of a slender pole and pressed firmly against the wire by a spring at the foot of the pole. Metallic connection is formed through the pole leading down to the motor under the car, whence, after doing its work, it is allowed to return to the power house by way of the rails and a protected auxiliary conductor of copper which takes up the current when the rails fail to act. Such is the trolley system now in use.

In the conduit system, which bids fair to be the next step in advance in electric railway engineering, the fixed wire is carried under ground as in Fig. 2, which represents the Love conduit

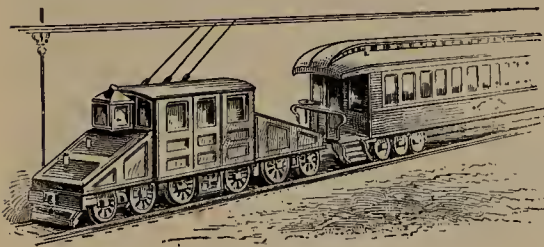


FIG. 3.—PROPULSION OF HEAVY TRAINS.

system, now in use on a section of road in Washington. The feeder and the return wire run side by side in a cement conduit about 16 inches deep by 12 inches wide. A "hanger" provided with grooved wheels rests on the wire and forms the connection, precisely as in the case of the overhead trolley. A chief difficulty with the conduit system is the danger from an always possi-

ble rush of water too great in volume to be instantly carried off. Should the water rise to the circuit wires the line would forthwith be paralyzed. There is small doubt, however, that these difficulties will eventually be overcome, and the subways at present used for cable cars may become available as electric conduits.

Fig. 3 shows the probable beginnings of heavy traffic traction with overhead wires.

**Electric Locomotive.**—As a pioneer in its class, the electric locomotive sent to the Columbian Exhibition by the General Electric Company of Lynn, Mass., was highly interesting. It would perhaps be unsafe to predict that it will ever be to the electric locomotive of the future what the early steam locomotives are to the mighty engines of the present day, for, in proportion, far more mechanical science has gone into its construction. It is, however, strictly a pioneer, intended for the comparatively light work of elevated roads and branch lines. Its weight is 30 tons, nominal speed 30 miles an hour, draw-bar pull 12,000 pounds. It is 16.5 feet long, 11.5 feet high, 8.33 feet wide, and rests on four 44-inch wheels. The power is furnished by 2 motors, acting directly, without gearing, and supported on spiral springs resting upon the truck frames, permitting automatic adjustment to irregularities of the roadbed. The armatures are mounted upon hollow iron cylinders surrounding the axles. In a trial "tug of war" with a steam locomotive intended for similar work, electricity was easily vanquished, but the absence of smoke, cinders, and noise, and the presence of general handiness, cleanliness, and adaptability went far to square the account and serve as a foretaste of what may come with the advance of electrical science.

The Intramural Railway at Chicago suggests possibilities not heretofore realized in regard to rapid transit for large cities. The cars were 47 feet long, with transverse seats for 96 passengers. The obvious advantage of this arrangement is the ease of entrance or exit, even when the car is crowded. At the worst, a passenger has only to crowd past five seatmates, instead of 25 feet of passage and platform packed with standing humanity. Sliding gates were provided at each seat, all controlled by a lever within reach of the motorman, and with the peculiarity of closing only to within about 6 inches of one another, so that there was no danger to the limbs of heedless passengers, while the reckless were effectually held in check. In external appearance the motors were hardly to be distinguished from the passenger cars, but each had 4 axles, with a dynamo on each, aggregating 532 horse power—considerably more than twice as much as the steam engines used on the New York elevated roads. These motors could start their train of 4 cars each and attain a speed of 10 miles within twice the train length. The electric current was supplied by an iron rail laid outside of the track rails, and the current was taken up by a copper shoe. There were many other interesting features in the equipment and construction of the road, and the service that it rendered during the crowded months of the exhibition certifies to its efficiency, notwithstanding it was confessedly designed to make money, not to demonstrate a principle.

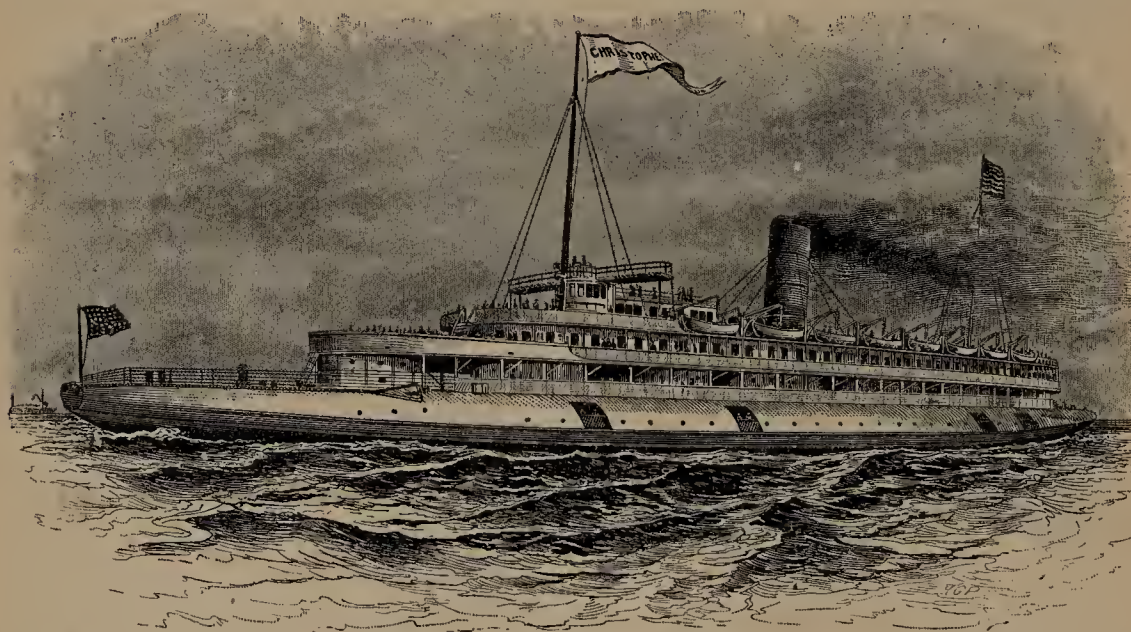


**Electric Launches.**—One of the conspicuous electrical successes of the year was the use of electric launches at the World's Fair. The consent of the management to their introduction was looked upon as a questionable experiment, but a pretty fleet of fifty launches was ready at an early date, and served without a serious break during the entire exhibition. About 1,000,000 passengers were carried, and the launches averaged something more than 3,000 miles each, at an average cost per mile for running expenses of  $5\frac{1}{4}$  cents. The total average cost per day for each launch was \$1.48 $\frac{1}{2}$ .

The launches were provided and operated by the Electric Launch and Navigation Company of New York. Each boat was 35 feet 10 inches over all, 31 feet 6 inches on the water line, 6 feet  $2\frac{1}{2}$  inches beam, and 27 inches draught. The storage batteries used were of the Consolidated Electric Storage Company's type, with 66 cells for each boat. These cells were stowed under the seats, quite out of sight, and were charged at night, so that the whole fleet was ready for duty early in the morning. None of the steersmen had ever handled electric launches before, though they were all experienced watermen. The current is controlled by a small lever switch beside the steering wheel, adjusted for four rates of speed forward and two backward. The nominal speed is 6 to 7 miles an hour, but they have a reserve speed of 8 to 10 miles. On Chicago day the boats averaged 40 to 50 miles each, without exhausting their supply of electricity. Upon the whole, the supposed doubtful experiment resulted most favorably, and is rich with promise for the future of the storage battery.

**Whaleback Steamers.**—Seagoing craft approximately cylindrical in shape, and intended

was intended to shorten the transatlantic passage. She was a total failure. In 1878 a craft somewhat similar in design was built to bring the great Egyptian obelisk known as Cleopatra's Needle from Alexandria to London. It had no motive power of its own, making the trip in tow of a steamer. It was abandoned during a gale in the Bay of Biscay, but remained afloat nevertheless, and was eventually picked up by a passing steamer and towed into port. It was a comparatively small craft, but its seaworthiness was unquestionable. It remained for Alexander McDougall, a shipmaster of the Great Lakes, to reduce the principle to practice. In 1888 he designed and built the first whaleback barge, of 437 tons registry and 1,400 tons capacity. She was an object of ridicule to all lake navigators, but her cost was only \$45,000, and within two years she had netted her owners nearly twice that amount. That settled the question of whalebacks. Sailormen still call them "pigs," but the epithet is no longer applied in derision. The American Steel Barge Company have turned out an enormous fleet of these eminently useful craft, large self-propelling steamers, as well as vessels for towage only. A "whaleback" crossed the Atlantic in 1890, and provoked much curious and largely adverse criticism among British naval architects. The influence of the type is visible, however, in the "Turret Cargo Steamer" (Doxford's patent), which may or may not turn out to be an improvement. The success of whalebacks as carriers at once suggested their adaptability for passenger traffic, but the inventor's designs in this direction were not realized until the Columbian Exhibition afforded the desired opportunity. The "Christopher Columbus" was finished and on duty throughout the



A WHALEBACK STEAMER.

to live with the waves sweeping over them from stem to stern, are no new invention. Such a one was built for Mr. Winans, of Baltimore, about 1860. She was cigar-shaped in model, and

season, carrying many thousand passengers between the city and the fair; her full capacity was 5,000. In all essentials she is a "whaleback," 302 feet long, with 7 elliptical turrets rising from



her deck. These contain all the deck machinery, windlasses, winches, etc., and some of them inclose the stairways leading up to the passenger quarters above, or down to the less exposed between-deck salons below. That the whaleback principle, modified by experience, is destined to play a prominent part in the seagoing traffic of the future is confidently predicted by those who have the most familiar knowledge of its capacities.

**The Naval Ram.**—The destruction of a ship when economically effected is as legitimate a feat of engineering as her construction. Nearly all modern war vessels are designed upon occasion to serve as rams. Their tremendous efficiency in this respect was demonstrated by the sinking of the British battle ship "Victoria" by her sister ship the "Camperdown" while manœuvring in the Mediterranean, June 23, 1893. The efficiency of the blow was in this instance largely diminished by the fact that at the moment of collision both vessels were doing their utmost to avert the disaster that followed. In an actual encounter between two hostile ships

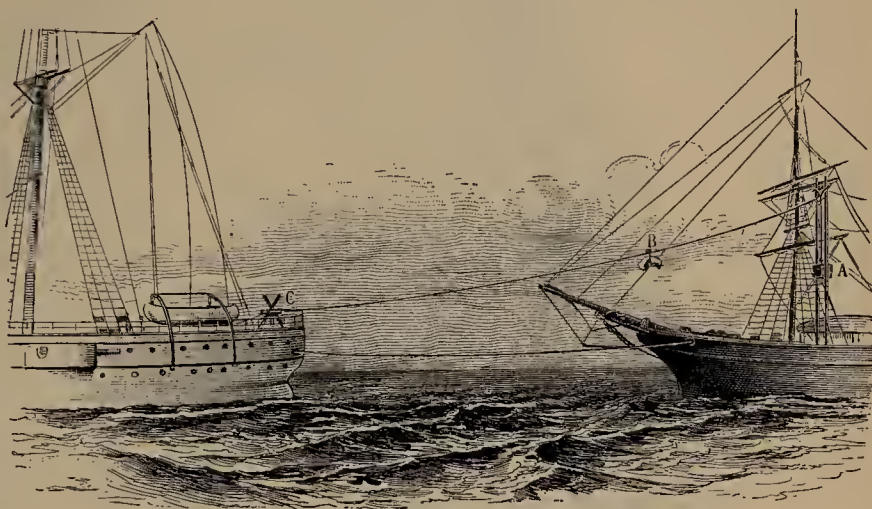
one at least would usually be struck while seeking to avoid the full force of impact. It is believed that the United States armored cruiser "San Francisco" is the first war ship that has ventured to use her ram under favorable conditions. The "San Francisco" is a protected cruiser 310 feet long, of 4,000 tons displacement, and 10,000 horse power. Under command of Admiral Benham she was cruising for dangerous derelicts off the Carolina coast, and in October found a lumber-laden schooner, water-logged and dismantled. She was a stanch new craft, and after vainly attempting first to tow her into port and secondly to blow her to pieces, the admiral decided to ram her. A private letter from an officer, published in "Harper's Weekly" of Nov. 25, thus describes the result:

"The first time we went at her slowly, and did not do much harm. Then the captain backed off to a good distance, sounded the siren to close all water-tight doors, and went at her full speed. I do not think you ever saw such a manifestation of power and force as I had the good fortune to see from a favorable position forward. The ship weighs 4,000 tons, as much as 64,000 men, and we went at that wreck at the speed of a charge of cavalry. We cut it right in two. One part went one way and one the other, and the lumber floated out and covered acres of the sea; and yet the parts of the wreck floated defiantly, so I had to go out again and blow up the two parts."

So far as is of record this exploit is unique.

The risk of seriously damaging his own ship was no doubt duly considered by the commanding officer of the "San Francisco," and since she not only accomplished her purpose but came out of the encounter uninjured, he escaped censure from the department. It should be noted in this connection that in a ramming encounter it is expected that the attacking vessel will suffer some injury. The "Camperdown," for instance, had to undergo extensive repairs after sinking the "Victoria."

A simple device for coaling vessels at sea is shown in the illustration.



COALING AT SEA.

**Naval Architecture.**—The arctic polar expedition under Dr. Fridtjof Nansen, the Norwegian explorer, brought about the construction of the first vessel especially designed for work of this character. The vessels heretofore used in such expeditions were adaptations. The "Fram" ("Advance") is built to order. From keel to truck she is planned for battling with the ice, and enabling her crew of 12 men to survive the several winters that they expect to pass in the arctic ice cap, drifting, as they hope, across or near the North Pole itself. The "Fram" is capable of steaming about 7 knots an hour, expending  $3\frac{1}{4}$  tons of coal a day. Her total coal capacity is 350 tons, with which she can steam continuously about two hundred days at 4 to 5 knots an hour. While this represents her nominal minimum of steam efficiency, her possible radius is largely increased by the adaptation of her furnaces for petroleum, blubber, or wood. Her immense strength of frame will enable her, it is hoped, to resist crushing pressure to the point of lifting rather than collapsing under all save the most adverse conditions. Heavy ice-sheathing protects her to a considerable height above the load-water line. Electric lights are provided throughout, with a reserve supply of ordinary lamps in case of accident. The dynamo, however, can be worked either by steam, wind, or hand power, so that electricity will probably be the main reliance. It is intended, indeed, when other resources fail, to require all hands to take turns at working a deck winch for exercise. The





THE FERRIS WHEEL.

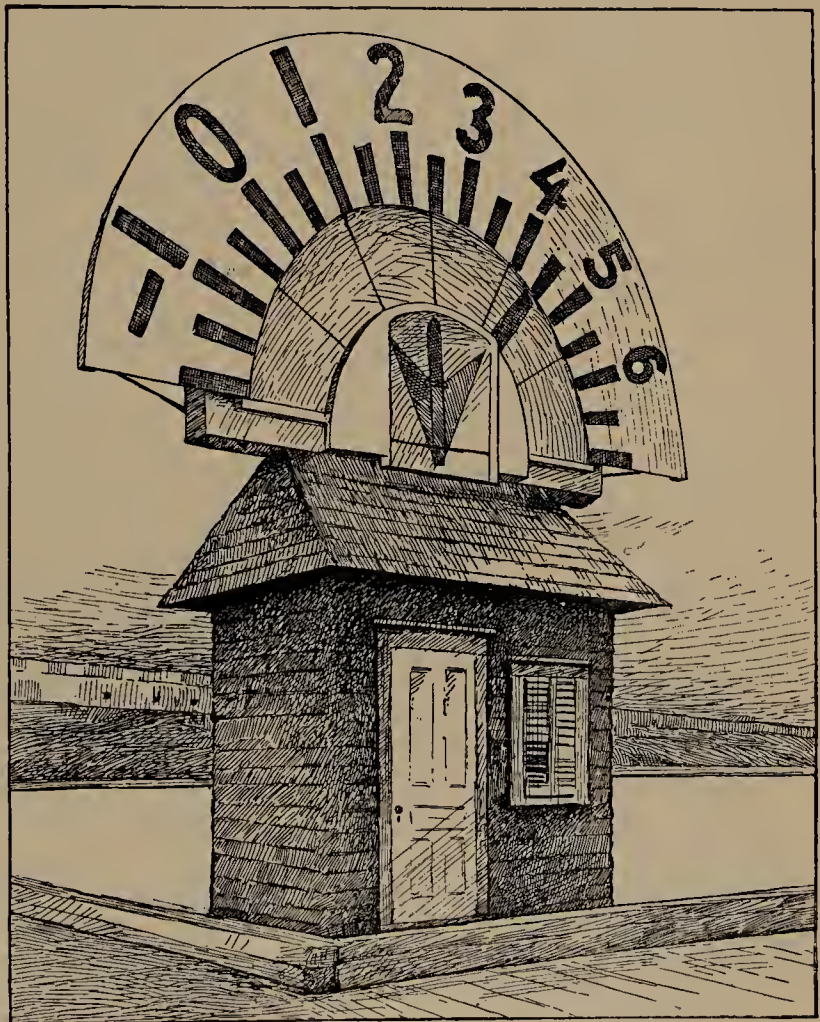


"Fram" was loaded to excess when she sailed from Christiania, every available foot of space being necessarily packed with the stores required for her long absence from any possible base of supplies. Seven large boats are carried, including a naphtha launch, and there is an abundant supply of sledges and "Ski," or Norwegian snow-shoes, such as proved so highly efficient in the Peary expedition.

**The Ferris Wheel.**—Paris, in 1889, saw the loftiest structure ever reared by mortal hands—the Eiffel tower—which still remains a monument of lightness and strength (see "Annual Cyclopædia" for 1888). Chicago, in turn, might have built a still loftier tower, but she wisely decided in favor of originality, and the largest piece of mechanism in existence was the result. The general plan of the wheel is evident from the illustration. Its diameter was 250 feet; circumference, 825 feet; width, 30 feet. The axle was of steel, 32 inches in diameter and 45 feet long. Its ends rested upon two skeleton iron towers of pyramidal design, properly supported upon concrete foundations. The two wheels that in combination formed the great revolving structure depended for strength upon the familiar bicycle-wheel principle, iron rods  $2\frac{1}{2}$  inches in diameter being substituted for wires. But this spoke-rod system reached only to an inner crown, or tire, 40 feet within the extreme periphery. The outermost tire consisted of a curved hollow iron beam  $25\frac{1}{2} \times 19$  inches. The outer and inner tires were held together by truss-work, and the 2 twin wheels were united by similar connections. Each wheel had a huge iron hub to which the adjustable spoke rods were made fast. The carriages, 36 in number, with a seating capacity for 40 passengers each, were hung at regular intervals to the outer tire. The total weight of the wheel with its full complement of passengers was 1,200 tons; and the fact that it did the work expected of it without a hint of failure certifies to the accuracy with which all the structural calculations must have been made. The driving power was applied through sprocket wheels and driving chains to cogs on the outer tires, and a system of clutch brakes kept the whole machine under perfect control. To George W. G. Ferris,

of Pittsburg, Pa., is due the credit of the design. Mr. L. V. Rice superintended the construction. It is understood that the wheel is destined to find a permanent home in New York.

**Tide Indicator.**—In July there was erected on the Government wharf at Fort Hamilton, New York harbor, a tide indicator of novel construction, as shown in the engraving. The disk is 20 feet in diameter, and the index numerals are large enough to be read with the naked eye at a distance of a mile or two. The indicator is in 3 sections: 1. The scale, 0 indicating mean low water, and the other numerals marking feet. 2. The pointer, which sweeps back and forth in the semicircular space immediately below the scale. 3. The arrowhead, which, by pointing up or

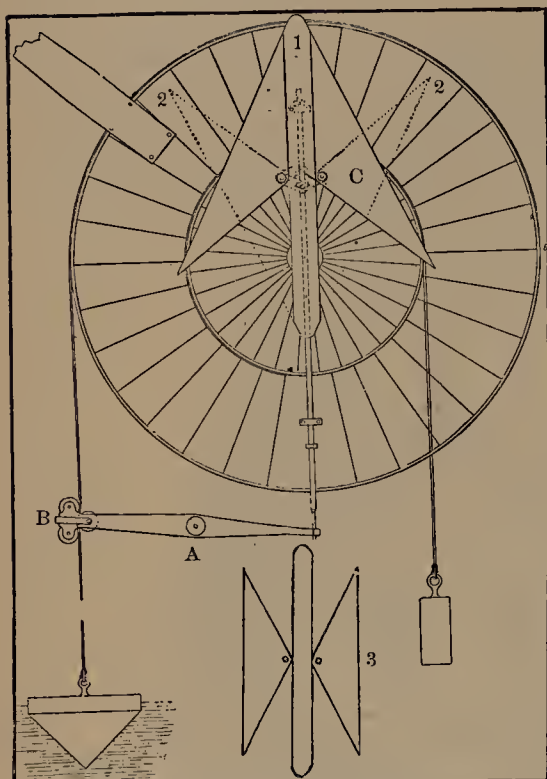


TIDE INDICATOR.

down, tells whether the tide is rising or falling. There are many tide indicators in use, but they are mainly for scientific observers. This is for mariners, showing at a glance from a distance just what every skipper wants to know. The mechanism is simple, an adaptation of float and counterpoise attached to a wheel that operates the pointer. The device deserving especial mention is the arrowhead, which is reversed by the tilting of its barbs, pivoted at their inner angles.



The action of the float and counterpoise are evident from the drawing. The arrow is reversed by the action of the lever A, which bears up or down according to the pull of the line attached to the float, which renders through a group of 3 friction pulleys marked B. A simple system



TIDE INDICATOR—MECHANISM.

of levers at C actuates the pivoted wings so that the arrow assumes the different aspects shown in 1, 2, and 3, which respectively indicate rising, falling, and slack water. This device is the invention of E. G. Fischer, of the United States Coast Survey. The indicator was set up in July, 1893, and survived the two hurricanes that shortly followed. It is now regarded as having passed the experimental stage. Such indicators, set at suitable points along the coast, would prove of great advantage to navigators, giving them information that they can usually obtain only by communicating with the shore.

**Railway Speed.**—It has fallen to the lot of engine "No. 999" of the New York Central Railroad to outstrip all rivals in the matter of speed. On May 9, 1893, this engine ran 1 mile in thirty-five seconds. On the next day, May 10, a more extended speed test was made over a straight reach of track. After passing Batavia, at 60 miles an hour, the speed was increased until the record of the preceding day was beaten, and a mile was accomplished in thirty-two seconds. In actual service, drawing a train, she has run  $112\frac{1}{2}$  miles in an hour, and the railroad officials hope that she will accomplish her mile in thirty seconds when she is fairly in running order. This triumph of American mechanical skill was exhibited at Chicago, and experts were much interested in comparing her with an Eng-

lish passenger locomotive of the best and newest design. While steam is thus approximating its limit, electricians are planning trains capable of running 120 miles an hour.

**EVENTS OF 1893.** The year was not conspicuous for great events of a sensational order. The Columbian Exhibition at Chicago was perhaps the most sensational, and certainly attracted world-wide attention. Probably the financial crisis in Australia, India, Italy, and America may have a far-reaching influence in the adjustment of international relations. The Hawaiian incident, begun in 1893 and extending over into 1894, may prove of consequence before it is finally settled. There have been no great wars, although the insurrectionary movement in Brazil has at times seemed threatening. There has been more or less fighting between native tribes and the European occupants of Africa, north and south, between the French and natives in Siam, and between the English and the hill tribes in India. The year opened in the United States with promise of great commercial prosperity, and closed with the country in a state of financial distress almost unprecedented.

**January 1.** Mexico: Battle between Government troops and revolutionists.

2. Netherlands: Troops called out to suppress riots among unemployed workmen, 3 killed, many wounded.

3. Legislatures convene in many States. (See State articles.) Spain: A large *aérolite* falls in the province of Valladolid. The Duke of Almodovar del Valley appointed minister to Washington.

4. North Carolina: Attempted lynching at Bakersville; a desperate fight follows, 11 men of the sheriff's posse killed, as many more of the lynchers. The President issues a proclamation of amnesty to Mormons liable to prosecution for polygamy. Germany: A riot among miners in the Saar district.

5. Pennsylvania: Thirteen members of the Amalgamated Association placed on trial for acts during the strike at the Carnegie Steel Works. Egypt: Fighting with the dervishes; the Government troops repulsed with heavy loss.

6. Completion of the extension of the Great Northern Railroad to the Pacific coast, the fifth transcontinental line. Paris: Large anti-Hebrew meeting; riot occurs in consequence of a speech by the Marquis de Mores; danger of further riots because of the Panama scandal.

9. German miners' strike, anarchist bomb explodes.

10. Indiana: A local feud known as the Lawson-Swinford vendetta culminates in a fight; several killed and wounded on each side. Pennsylvania: Twelve of the 13 Pittsburg strikers found guilty of riot. Roumania: Marriage of the Princess Marie of Edinburgh and Prince Ferdinand, Crown Prince of Roumania, at Sigmaringen. India: An English officer and 5 Sepoys killed by a hostile tribe at Sima. Belgium: Catholic clubhouse at Searing blown up with dynamite. France: The Rebot ministry takes office.

11. Kansas: Republican and Populist factions claim control of the Legislature, but agree to a truce pending settlement of the differences in court.

12. Kansas: Governor Llewellyn recognizes the Populist House. Philadelphia: The American Academy of Political and Social Science; annual meeting.

13. Four Russian nihilists expelled from France.

14. Appointment by the Pope of Monsignor Satolli as permanent apostolic legate to the United States. Paris: Full confessions made by many persons prominently connected with the Panama scandal.

16. Washington: Twenty-fifth convention of the National Women's Suffrage Association. Rome: Fourteen new cardinals created by the Pope. Hawaii: The reigning queen dethroned by revolutionists; a

provisional government established; all foreign powers, save England, recognize the new Government.

17. Pennsylvania: United States Senator Quay re-elected by the Legislature. Egypt: The Khedive appoints a new ministry.

18. New York: Edward Murphy, Jr., elected to the United States Senate. Egypt: The Khedive yields to the demands of the English and dismisses his new ministry. Germany: Socialists hold disorderly meetings in Berlin.

19. Judge R. R. Nelson declares that the Chinese exclusion act is unconstitutional. England: The French ambassador protests against British interference in Egypt. Belgium: A large body of riotous workmen dispersed by troops.

20. Pennsylvania: Hugh F. Dempsey, master workman of the Knights of Labor, found guilty in the Homestead poisoning case. Washington: Annual session of the National Board of Trade. Holland: Riotous proceedings in Amsterdam.

22. Rome: Attempts made by supposed anarchists to blow up a hotel. Several large banking houses seriously embarrassed.

24. Re-enforcements of British troops sent to Egypt.

25. Kansas: Populists and Democrats combine to elect John Martin United States Senator. Lord Dufferin reassures the French Government in regard to British occupation of Egypt. Germany: Marriage at Berlin of Princess Margaret, sister of the Emperor, and Prince Frederick Charles of Hesse.

26. Boston: The National Divorce Reform League in session. Italy: The bank scandals involve many prominent names.

27. Wisconsin: Congressman Mitchell elected United States Senator. Paris: Bills of accusation in the Panama matter returned against 14 prominent men.

30. Washington: The British minister protests against the action of the United States in Hawaii.

31. Meeting of the British Parliament; Mr. Gladstone takes the oath as Prime Minister.

**February 1.** Hawaii: Mr. Stevens, the American minister, assumes a temporary protectorate on the part of the United States pending the result of negotiations at Washington.

2. Michigan: Both branches of the Legislature pass an act repealing the Miner election law. Illinois: An act passed repealing the compulsory school law.

3. Arrival of the Hawaiian commissioners in Washington. Dartmouth College: Rev. Dr. W. J. Tucker elected president.

4. Pine Ridge Agency: Encounter between Indians and cowboys, 4 cowboys killed. United States of Colombia: Riots at Bogotá result in the death of something like 100 persons, 500 wounded.

8. Washington: The electoral vote counted in the House of Representatives; Grover Cleveland declared President. Texas: An alleged murderer lynched near Hickory creek.

9. Paris: Ferdinand and Charles de Lesseps and others, including Eiffel, sentenced to imprisonment and fine for their connection with the Panama scandal.

10. Mississippi: Two negro boys hanged by a mob in Amite County.

11. Washington: The Hawaiian commissioners call officially upon the President. England: The Queen's speech read officially in the House of Commons.

17. Kansas: The rival Houses of the Legislature reach a peaceful settlement, leaving the Republicans in possession.

18. Alabama: Both branches of the Legislature adopt an Australian ballot system. Wyoming: Adjournment of the State Legislature. Homestead, Pa.: The jury in the case of Hugh O'Donnell, a strike leader charged with murder, find him Not guilty.

19. Rome: Sixty thousand people gather in St. Peter's to attend the Pope's jubilee mass.

20. North Dakota: W. N. Roach chosen United States Senator.

21. Rome: A director in the National Bank makes a statement implicating many prominent statesmen in the existing scandals.

22. New York: The President and other Government officials take part in the ceremony of hoisting the American flag on the steamer City of New York.

23. Washington: Meeting of the American Bimc-tallic League. Paris: First meeting of the Bering Sea Commission, adjourned to March 23.

25. The President issues a call for an extra session of the Senate on March 4. Kansas: The State Supreme Court decides that the Republican House is the legally constituted body.

27. Rome: Twenty-six anarchists arrested while at work in a bomb factory.

28. Philadelphia: Launch of the United States battle ship Indiana.

**March 1.** Arrival in New York of the Princess Kaiulani, of Hawaii, to present her claims before the President. The President receives Gen. Canvaro, the new Peruvian minister; also Mr. Haenpjets, the new minister from Hayti.

2. Washington: Arrival of President-elect Cleveland and his party. Ireland: A large Orange or anti-Nationalist meeting held in Belfast. Rome: Celebration of the Pope's eighty-third birthday.

3. Washington: President-elect Cleveland and Mrs. Cleveland dine at the White House, according to custom. Homestead, Pa.: The two men charged with conspiracy to poison nonunion workmen plead guilty to the indictment.

4. Grover Cleveland inaugurated President of the United States. Homestead, Pa.: The indicted poisoners sentenced to seven years in the Penitentiary. England: Celebration of the arrival of the American line steamer New York at Southampton.

6. Zanzibar: An attempted seizure of the throne defeated by the British.

7. Washington: Most of the members of the new Cabinet take the oath of office.

9. The President recalls the Hawaiian annexation treaty submitted by his official predecessor.

11. New Jersey: The State Legislature adjourns *sine die* after passing a bill prohibiting horse racing in the winter months. Washington (State): The Governor appoints Mr. Allen United States Senator.

13. Washington: The Hawaiian princess received unofficially at the White House by the President and Mrs. Cleveland.

14. East Africa: Fighting between the German and native tribes. India: British troops along the northern frontier have subjugated a number of the most warlike hill tribes and strengthened their approaches against Russian encroachments; the British lost 23 killed and 20 wounded.

16. London: The Russo-Jewish committee has sent an appeal throughout Europe to Hebrew financiers to refuse all Russian loans.

17. A dynamite bomb explodes in the official residence of the United States minister at Rome.

18. Rome: A lighted dynamite bomb found on the steps of the Palazzo Alfieri. It is extinguished before explosion. Tennessee: A desperado and murderer taken from the jail in Jacksborough and hanged by a mob.

20. Special Representative Blount sails from San Francisco for Honolulu. United States Minister Bayard appointed ambassador to the Court of St. James.

21. Rhode Island: The Republicans nominate D. Russell Brown for Governor; the Democrats nominate David S. Baker. Paris: The Panama trials end with the conviction of Charles de Lesseps, M. Baihaut, and M. Blondin; the other defendants are acquitted. Dynamite outrages continue in Rome. Havana: The two Columbus caravels arrive from Spain. Russia: Assassination of the Mayor of Moscow.

22. England: University boat race; Oxford wins.

23. Paris: M. Schallemel-Lacour elected to the French Academy in place of Ernest Renan.

24. It is officially announced that the British representative in the United States is to be raised to the rank of ambassador (this announcement was followed within a few days by similar action on the part of



most of the European powers). A resolution passed in the British Parliament providing for the payment of members.

25. New Orleans, La. : Judge Billings decides that the ordering of a great strike in that city was unlawful. New York : A general strike begun among the clothing cutters. Hayti : A decisive battle reported between the Government and the insurgents, the latter being victorious. Rome : King Humbert narrowly escapes injury by a religious fanatic.

26. Oregon : 67 Chinese illegally landed at Portland.

28. New York : Dr. Joseph A. Senner appointed Commissioner of Immigration. Indian Territory : Fighting between the hostile factions of the Choctaw nation, 20 men reported killed. France : A German correspondent who has been expelled by order of the Government is mobbed on his way to the station.

29. Nebraska : Impeachment proceedings begun against 3 State officials for irregularities connected with the Board of Public Lands and Buildings.

April 3. Washington : The Hon. Thomas S. Bayard, first ambassador of the United States to Great Britain, takes the oath of office.

4. Chicago : Carter Harrison elected mayor by a majority of 19,000. Paris : Case opens before the Bering Sea Court of Arbitration. Ireland : A great anti-home-rule demonstration held at Belfast.

5. The Colombian Government grants an extension of twenty months to the Panama Canal Company.

6. Utah : Dedication of the great Mormon temple at Salt Lake City. Rhode Island : State election, both Democratic congressmen chosen.

7. England : Riotous proceedings in Hull by striking dock laborers.

8. The President issues a proclamation prohibiting the taking of seals in Alaska or the Bering Sea during the present season. England : Troops called out to restrain the dock laborers. Spain : A band of anarchists captured at Xeres. Riotous proceedings in Trafalgar Square, London.

9. England : The Hull strikers attack the military escort of crews on their way to the wharves. Norway : The viking ship sails from Christiania, bound for Chicago and the World's Fair. Cuba : The third of the Columbus caravels reaches Havana.

10. Chicago : Four thousand workers on the Fair buildings go on strike, but a settlement is effected. Hungary : An attempt made to assassinate the Cardinal Primate of Hungary. Egypt : A raid led by Osman Digna, the dervish, repulsed by the Egyptians. Peru : The Government has taken steps to comply with the demands of the United States for reparation for the outrage committed on the consular agency at Molendo.

11. Sir Julian Pauncefote becomes dean of the diplomatic corps in Washington, since he is senior among the ambassadors. Belgium : Workmen go on strike at Brussels because the Chamber of Deputies votes against universal suffrage. Japan seizes the Pellew Islands.

12. New York city : The two hundredth anniversary of the introduction of printing celebrated by the allied trades. Chicago : The American Railway Union organizes, comprising all railway employees. Belgium : Rioting in consequence of the antisuffrage action of the Chamber of Deputies is spreading with dangerous rapidity. Australia : One of the great chartered banks fails, with liabilities estimated at \$30,000,000. Arabia : A complete Syrian text of the four gospels, discovered by Mrs. Lewis at Mount Sinai.

13. Hawaii : The United States flag hauled down by order of United States Commissioner Blount. Rioting continues in Belgium with serious results.

14. Ohio : The city of Toledo begins a suit for damages against the Standard Oil Company on the ground of conspiracy. Georgia : A negro murderer lynched near Fort James. Servia : Alexander, the young King, establishes his authority by a *coup d'état*.

15. Arrival in New York of the Duke of Veragua

and his party. Belgium : Encounters between the strikers and the military.

16. Belgium : The Mayor of Brussels attacked and beaten by strikers.

17. Celebration of Emancipation Day by a parade of the colored inhabitants of the District of Columbia. The United States cruiser Detroit makes a record of more than 18 knots an hour, showing herself the speediest vessel of her class. England : A bill providing for the arbitration of labor disputes passes a first reading in the House of Commons.

18. Washington : Annual meeting of the National Academy of Sciences. Belgium : The Chamber of Deputies passes a vote adopting universal suffrage, and the leaders of the revolutionary movement immediately advise the abandonment of the general strike; rioting, however, still continues in the principal cities. England : The Dowager Duchess of Sutherland sentenced to 6 weeks' imprisonment for contempt of court.

19. Arkansas : Twenty-five masked men break into the jail at Morrilton and hang a negro murderer.

20. Australia : Failure of Joint-Stock Bank; liabilities are \$65,000,000. Bulgaria : Marriage of the Princess Maria Louise and Prince Ferdinand. Mexico : A band of rebels captures three towns, and routs a body of Government troops with considerable loss in killed and wounded.

21. Ratification of extradition treaty between the United States and Russia. Belgium : Action of the Chamber of Deputies in regard to the suffrage confirmed by the Senate.

22. Naval representatives of all powers gather at Hampton Roads preparatory to the review in New York harbor.

24. The naval squadrons sail from Hampton Roads for New York. Washington : The Duke of Veragua and his party received by the President and entertained at a ball. The Trans-Mississippi Congress meets at Ogden. Chicago : Strike among the Columbian guards at the World's Fair; subsequently adjusted. Norway : The Congress has suspended its sittings in defiance of the King. Ireland : Riots between Orangemen and Catholics in the ship-yards of Belfast.

25. American and foreign naval vessels arrive in the lower bay of New York.

26. The naval squadrons steam to their anchorage in the Hudson river. The Ericsson statue unveiled in Battery Park.

27. The President reviews the naval squadrons in the Hudson river.

28. Four thousand marines and sailors land from the naval squadron and march down Fifth Avenue and Broadway in New York, where they are reviewed by the Governor and the Mayor.

29. The Liberty Bell is received at Chicago with suitable honors. Dedication of the Woman's Building at the Chicago Fair grounds. A hostile outbreak takes place among the Navahoe Indians, but it is believed to have been effectually checked.

30. Failure of the National Bank of Australasia, with liabilities of \$37,500,000.

May 1. Chicago : Formal opening of the World's Fair. Ohio : Twenty thousand coal miners go on strike. France : Disorderly proceedings on the part of socialists; a number of arrests made. Scotland : Ten thousand mill hands go on strike at Dundee.

2. Nineteen thousand jute workers join the strike at Dundee.

3. Paris : Mr. Coudert presents the American case before the Bering Sea Tribunal of Arbitration.

4. Massachusetts : Dean William Lawrence chosen bishop to succeed the late Phillips Brooks. A deputatation of foreign naval officers leaves New York on a special train to visit the World's Fair. Kentucky : A horse thief hanged by a mob at Sherman.

6. Minnesota : A suspected criminal captured and hanged by a mob at Duluth. South Carolina : A negro, an escaped convict, lynched near Columbia. Germany : The Army bill rejected by a vote of 210

to 162; the Emperor immediately dissolves the Reichstag. Paris: United States Ambassador Eustis presents his credentials to President Caruot.

7. The President announces that hereafter the White House will be closed to office seekers. England: Great demonstration in favor of the eight-hour working day held in Hyde Park; similar meetings in other large cities of Great Britain. Bomb explosion in Four Courts, Dublin. Detroit: Eighth annual convention of the National League of Musicians. Massachusetts: Opening of the Borden trial.

9. The President appoints James H. Blount, of Georgia, to succeed John L. Stevens as the representative of the United States at Hawaii. Medical Inspector J. R. Tryon appointed surgeon general of the United States navy. Three colored men lynched in Arkansas. Australia: The Bank of Victoria, at Melbourne, suspends, with liabilities of \$11,000,000.

10. Louisville, Ky.: Meeting of the National League of Republican Clubs. Paris: Sir Charles Russell begins the presentation of the British case before the Bering Sea Tribunal. London: Queen Victoria opens the British Imperial Institute; it is announced as her last public appearance.

11. Nicaragua: A revolution is said to have been practically successful. Canada: The Earl of Aberdeen becomes Governor-General. New York: Engine No. 999 runs at the rate of 112½ miles an hour on the Central Railroad.

12. A large number of Western banks suspend, following the failure of the Columbia National Bank at Chicago. Controversy begins regarding Sunday opening of the Fair grounds. The new steamship *Campagna* reaches Queenstown in 5 days, 17 hours, and 27 minutes from New York, breaking the record for the eastward passage.

15. The Supreme Court of the United States affirms the constitutionality of the Chinese exclusion act. Chicago: Opening of the Women's Congress.

16. Another lynching near North Indianapolis. Failure of the City of Melbourne Bank, Australia.

17. Australia: The Royal Bank, Queensland, fails.

18. Washington: The one hundred and third General Assembly of the Presbyterian Church. Georgia: Meeting of the Southern Presbyterian General Assembly at Macon. The General Government purchases the Cherokee strip lying between Kansas and Oklahoma for \$8,500,000. Germany: The Emperor William unveils a monument to his grandfather. A treaty of commerce concluded between Spain and Germany.

19. Washington: The President and Mrs. Cleveland give a reception to Presbyterian delegates. New York: The Spanish Infanta Eulalie received in New York. England: The dock laborers' strike has been settled. Italy: Resignation of the Cabinet. Russia: A new order issued expelling Hebrews from the Asiatic provinces.

20. Washington: The Infanta Eulalie received by the President and Mrs. Cleveland.

22. Trial trip of the United States cruiser *New York*. A speed of 21.09 knots developed, winning for her builders a large premium. Italy: The Cabinet reconstructed, with Signor Gioletti as President of the Council. England: Enormous demonstration in favor of the Irish Nationalists in Hyde Park.

23. Washington: The Spanish Infanta entertained at the White House at a state dinner. Michigan: A supposed murderer taken from jail at Corunna and lynched. Paris: Acrimonious discussions between the English and American representatives before the Bering Sea Tribunal.

24. Georgia: A monument to the memory of Alexander H. Stephens unveiled at Liberty Hall.

25. The Spanish Infanta returns to New York. England: The Royal Thames Yacht Club Regatta won by Britannia. Poland: A great Nihilist plot discovered at Warsaw; more than 100 arrests made. Italy: several anarchists arrested in Naples.

26. Texas: Masked robbers hold up a train at

Coleman and rob the express car. New York: A ball given in honor of the Spanish Infanta.

27. New Orleans: The body of Jefferson Davis disinterred preparatory to its transfer to Richmond.

28. Australia: The prime ministers of the different colonies recommend the adoption of uniform banking laws, in view of the recent financial disasters.

29. The trial of Prof. Briggs for heresy begins before the Presbyterian General Assembly. Graduation week at the United States Naval Academy.

30. Washington (State): Steamer *Haitian* Republic seized for smuggling opium at Seattle.

31. Prof. Briggs convicted of heresy by the Presbyterian General Assembly; vote, 383 to 116. Richmond, Va.: the remains of Jefferson Davis buried in Hollywood Cemetery. Nicaragua: A treaty of peace signed with the revolutionists, and a provisional government formed.

June 1. Washington: The Presbyterian General Assembly suspends Dr. Briggs from the ministry. New Castle, Pa.: Meeting of the sixty-fourth annual Synod of the Reformed Presbyterian Church of North America. Rhode Island: The Senate refuses to meet with the House of Representatives, and adjourns till January. Hawaii: L. A. Thurston appointed minister to the United States by the Provisional Government.

2. Rhode Island: The Governor prorogues the session of the Legislature in consequence of the action of the Senate. Annapolis, Md.: The graduating cadets of the Naval Academy receive their diplomas.

3. Illinois: A negro taken from the jail at Decatur and lynched. Tennessee: The impeachment trial of Judge Dubose, of Memphis, results in his conviction.

4. The Duke of Edinburgh has been made admiral of the British fleet.

5. New York city: Charles W. Drayton appointed postmaster. Kentucky: The office of a local-option temperance paper in Cattslettsburg blown up with dynamite. Chicago: Opening of the Temperance Congress; Convention of the Anti-Trust Society, representing 24 States.

6. Chicago: Runs on several of the city savings banks. Many failures of banks reported from various parts of the country. The Spanish Infanta reached Chicago and was suitably received. Washington: Official promulgation of the Russian extradition treaty. Arkansas: A band of 6 men, heavily armed, rob the People's Bank at Little Rock; six men wounded in the fight that follows.

7. Ohio: Opening of the Republican State Convention at Columbus. Minnesota: Convention of the International Reciprocity League at St. Paul.

8. Chicago: The Princess Eulalie visits the World's Fair. Annual meeting of the National Printing Association. Ohio: Gov. McKinley and the present State officers unanimously renominated.

9. Washington, D. C.: The new Hawaiian minister, Mr. Thurston, is presented to the President. Chicago: Strike and riot on the works of the drainage canal; several men killed and many hurt.

10. Chief-Justice Fuller issues a stay of proceedings in the World's Fair Sunday-closing case.

11. Indiana: A desperado named Hawkins, with 30 followers, attacks Shelbyville, and a bloody fight ensues.

12. Chicago: Forty-first Annual Convention of the International Typographical Union; Meeting of the International Union of Charities, Correction, and Philanthropy. Antwerp: The residence of the public prosecutor damaged by a dynamite explosion of supposed anarchist origin.

13. Kernstown, Va.: A negro man lynched.

14. Washington: Baron Fava, minister from Italy, presented to the President in his new rank of ambassador.

15. Chicago: German day at the Fair; dedication of the national building. Germany: Election for the Reichstag (see article on GERMANY).

16. Chicago: Congress of the American Sons of the



Revolution. England: The House of Commons passes a resolution favoring arbitration for the settlement of international controversies.

17. In the Federal Court of Appeals, Justice Fuller delivers the opinion that the World's Fair corporation may lawfully keep the gates open on Sunday. Massachusetts Day and the anniversary of Bunker Hill commemorated at the World's Fair. New York: arrival of the Norwegian viking ship.

20. New Bedford, Mass.: The Borden trial ends with a verdict of Not guilty. Newport: Arrival of the Spanish Infanta. Prussia: Riotous demonstrations in Breslau suppressed by the military, many rioters wounded. Spain: A large dynamite bomb exploded, probably by anarchists, near the house of a prominent official.

21. Chicago: The Ferris wheel set in motion.

22. California: A financial crisis in San Francisco. England: Mr. Bayard presents his credentials to the Queen as ambassador from the United States. Austria: A socialist mob loots the town of Andrichow; several people killed by the police.

23. Philadelphia: The Duke and Duchess of Veragua entertained at a reception by Mr. and Mrs. George W. Childs. Several bank suspensions.

24. Mississippi: An assassination by White Caps in Marion County in revenge for testimony as a witness.

25. Chicago: Statue of Gladstone unveiled, and religious services held on the Exposition grounds. A granite monument unveiled to the memory of the anarchists executed 1888.

26. Illinois: Gov. Altgeld pardons the anarchists who were imprisoned for the Haymarket riot. Germany: Second ballots for the Reichstag have caused riots. England: A court-martial has been ordered to try Rear-Admiral Marquand, who commanded the Camperdown when she sank the Victoria. India: The Council passes an act closing the mints of the country to the free coinage of silver.

27. Boston: Annual meeting of the Association of the Army of the Potomac. Gen. Nelson H. Miles chosen president.

28. The Western railroads agree to a one-fare-one-trip rate to Chicago. Boston: The Farragut statue unveiled. California: A number of convicts try to break jail at Folsom, 3 are killed and 2 hurt. The attempt defeated.

29. Cleveland, Ohio: First international conference of the Epworth League. Portland, Ore.: Seizure of the steamer Haitian Republic with 500 contraband Chinese. New York: The Clearing House banks prevent a money panic by advancing a loan of \$6,000,000.

30. The President issues a call for an extra session of Congress on Aug. 7. New London, Conn.: Annual boat race between Yale and Harvard; Yale wins.

**July 1.** Chicago: Dominion day at the World's Fair. Mayor Harrison is hissed for speaking in favor of annexation. Harvard wins the decisive game from Yale in the contest for the intercollegiate baseball championship. New York: The Duke of Veragua and party sail for home. South Carolina: The Evans Liquor law goes into effect.

2. Gettysburg, Pa.: Nearly 7,000 New York veterans assemble for the dedication of the State monument. Lieut. Peary's expedition sails for the arctic regions. Chicago: Eighth annual convention of the Socialist Labor party.

3. Chicago: The World's Congress of Musicians opens in the Art Palace. Paris: Students' riot in consequence of recent action of the Chamber of Deputies. Malta: A court-martial ordered to inquire into the loss of the Victoria.

4. Chicago: Large attendance at the Fourth of July exercises at the Fair grounds; dedication of the new Liberty Bell. Newburyport, Mass.: A bronze statue unveiled in memory of William Lloyd Garrison.

5. Germany: Opening of the new Reichstag by the Emperor. New Mexico: Convention held at Silver City to advocate the repeal of the Sherman act and

in favor of free coinage of silver. Paris: Almost the whole city under guard, in consequence of the riots by students and their sympathizers.

6. It is announced that more than 300 silver mines in the United States have shut down since the action of the Government of India. London: Marriage of the Duke of York and the Princess May of Teck. Montreal: Christian Endeavor Congress opens.

7. Chicago: Arrival of the Spanish caravels. Paris: Renewed rioting and threats of general strike. Germany: Introduction of the amended Army bill in the Reichstag.

8. Italy: Great excitement in the Chamber of Deputies over alleged implications of members in the bank scandals. England: Bimetallists in Parliament protest against the closing of the Indian mints. Montreal: A mob of Catholics attacks the tent where the Christian Endeavor meeting is held, and are dispersed by the police.

9. Kentucky: A riot at Woodbine, 4 killed, including the city marshal, and 4 wounded. Montreal: More than 50 arrests for the attack upon the Christian Endeavor Society.

10. Michigan: A desperate attempt to break jail at Ionia, several convicts killed, and others hurt.

11. England: An exciting scene in the House of Commons during the debate on the Home-Rule bill; the amendment rejected by a vote of 251 to 219.

12. Colorado: The State Silver Convention issues an appeal in favor of bimetallism. Chicago: Arrival of the viking ship, which is received with much pomp and ceremony. Italy: Over 200 Senators and Deputies charged with complicity in the bank scandals.

13. Utah: Great mass meeting in the silver interest held at Salt Lake. Chicago: Sessions of the Society of Librarians and Congress of Authors; meeting of the American Philological Association, the Folklore Congress, and the Historical Congress. Indianapolis: International Convention of the Baptist Young People's Union, several thousand delegates. Samoa: Hostilities have broken out between the rival claimants of the throne. Siam: Hostilities between the French and natives.

14. Suspension of about 2,500 pensions under Secretary Smith's order. New York: The French societies celebrate the one hundred and fourth anniversary of the fall of the Bastille. Seizure of the steamship Red Sea, with 794 immigrants, by the immigration authorities.

15. Germany: The Army bill passes the Reichstag by a vote of 201 to 185. Nicaragua: Another revolution breaks out.

17. Chicago: Opening of the Educational Congress; numerous failures announced. California: Discovery of a comet by the Lick Observatory. Siam: The French capture a number of native ports.

18. Denver, Col.: Four banks close their doors, and there are runs on other financial institutions. Lynchings reported in Georgia and Arkansas.

19. More banks close their doors. Chicago: Dedication of the Brazilian building at the Fair.

20. Kansas: Fight between strikers and nonunion miners at Weir City; a number hurt on both sides.

21. New York: Arrival of an East Indian prince, with a large retinue of servants, to visit Chicago. Siam: The French forces have been victorious, and have offered terms of submission to the Siamese.

22. Two bank failures in Milwaukee, and runs on banks in many other places. Massachusetts: Annual cruise of the State Naval Brigade.

23. Scranton, Pa.: Race war between Hungarians and Poles. A negro lynched at Memphis, Tenn.

24. More bank failures in the West.

26. New York: Two Stock Exchange firms fail.

27. Ten banks suspend, most of them Northwestern. Other business failures reported. England: Exciting scene in the House of Commons over the enforcement of closure in the Home-Rule bill; the trouble terminated in what was little better than a free fight.

28. New York: Appointment of James T. Kilbreth as collector of the port. More failures and suspen-

sions, including 9 banks in the West and 1 in Kentucky.

29. Siam accepts the terms of the French ultimatum.

**August 1.** Collapse of the Chicago provision deal; many failures of commission houses; great excitement in the Board of Trade. The Siamese Government gives the guarantees demanded by France.

6. Switzerland: Meeting of the International Socialist Congress at Zurich.

7. Washington: The Fifty-third Congress meets in extra session.

8. New York: The Chemical Bank, one of the strongest in the country, is unable to fill its weekly orders for currency in small denominations.

9. New York: Madison Square Bank suspends.

10. Ohio: Lawrence T. Neal nominated for Governor by the Democrats. Cuba: General E. Calleja appointed Governor-General.

12. Launch of the United States cruiser Minneapolis at Cramp's shipyard, Philadelphia. Rhode Island: The Supreme Court decides in favor of the Republicans in the legislative controversy.

13. Riots in Bombay, India; all available troops called out to suppress the disturbance.

14. Pittsburg, Pa.: Several large steel and iron mills resume work.

15. San Francisco: Arrival of United States Minister Blount on his return to Washington. Receivers appointed for the Northern Pacific Railroad. Paris: Announcement of the finding of the Bering Sea Tribunal (see *BERING SEA ARBITRATION*). Argentina, South America: Martial law proclaimed in consequence of revolution.

17. New York: Much excitement among Hebrew laborers on the east side of the city. Police reserves called out. France: Fatal encounter between French and Italian workmen in Aigues-Mortes.

18. Chicago: Celebration of Austria's day.

20. New Jersey: Interdenominational Bible Congress at Asbury Park.

22. New York: An encounter between anarchists and socialists averted by the police. Chicago: Convention of French Canadians.

23. New York: Meeting of anarchists broken up by the police. South Carolina: The first liquor dispensary opens at Charleston under the new law. England: Lord Dunraven's yacht Valkyrie sails for New York to compete for the America's cup.

24. New York: Mass meeting in favor of silver and against the repeal of the Sherman act.

25. Chicago: The colored people celebrate their special day at the Exposition. Italy: Fighting between strikers and troops in Naples.

28. Repeal of the purchasing clause of the Sherman law.

29. Spain: Fatal riots in San Sebastian. Denmark: The King receives a visit from the Russian Czar. Africa: A native fort captured by German troops with considerable sacrifice of life.

30. St. Louis: Seventh annual convention of the International Sunday-School Union. Nicaragua: A receiver appointed for the canal company. Wisconsin: Sixteenth annual meeting of the American Bar Association at Milwaukee. Kansas: Coal-miners' strike ends with nothing gained.

31. Chicago: After numerous contradictory findings and orders, it is decided that the Fair shall be open on Sunday. England: End of the great coal strike.

**September 1.** England: The Home-Rule bill passes the House of Commons, 301 to 267; read in the House of Lords. Prussia: Meeting of the Emperor of Germany and the Crown Prince of Italy at Coblenz. Indianapolis: Annual meeting of the Grand Army of the Republic; about 25,000 men present. Kansas: Express train robbed near Mound Valley.

3. Washington: The President asked to arbitrate between the Argentine Republic and Brazil.

4. General observation of Labor Day. Pittsburg, Pa.: General resumption of work by the Carnegie Steel Mills. Washington: Meeting of the Pan-

American Medical Congress. The German and Chinese ambassadors present their credentials. Ireland: Congress of trades unions in session at Belfast.

5. Indianapolis: Grand parade of veterans at the national encampment. Arrival announced of the Peary expedition in Greenland on Aug. 3. Russia: About 100 suspected Nihilists arrested in Moscow. Washington: The President opens the Pan-American Medical Congress.

7. Brazil: General revolt of the navy under the lead of Admiral Mello. Germany: The Emperor abolishes the exceptional laws heretofore enforced in Alsace-Lorraine. Spain: Dynamite bombs thrown by rioters in the streets of Villa Nueva. England: The House of Lords rejects the Home-Rule bill; vote, 419 to 41. The Campagna lowers the ocean record from Sandy Hook to Queenstown by nearly three hours. Brazil: Bombardment of Rio threatened by the navy.

8. England: The House of Lords rejects the Home-Rule bill.

9. Washington, D. C.: A daughter born to the President and Mrs. Cleveland in the White House.

11. Chicago: Opening of the Parliament of Religions.

12. Masked robbers hold up a train on the Lake Shore road in Indiana; the engineer shot and dynamite used to blow up the express car. New York: A convention called by the Board of Trade passes resolutions approving the President's message and urging the unconditional repeal of the Sherman law.

13. Indiana: Several arrests made in connection with the recent train robbery. Montreal: The Presbytery has found Prof. Campbell guilty of heresy.

14. Chicago: Celebration of Ohio day at the World's Fair. Washington: A convention of colored Baptists from all parts of the country. Detroit, Mich.: Annual convention of the St. Andrew's Brotherhood. Brazil: Bombardment of the forts at Rio by the Revolutionists.

15. Michigan: Train robbers hold up a train on the Mineral Range Railroad.

16. Opening of the Cherokee strip to settlers; about 100,000 persons compete for land claims; many are hurt, some killed. Chicago: Celebration of New Mexico and Texas day.

17. Louisiana: Four negroes lynched. Dubuque: Investiture of the Roman Catholic Archbishop Hennesy, Monsignor Satolli being present.

18. Brazil: Renewal of the bombardment of Rio. Washington: Anniversary of the foundation of the Capital.

19. Chicago: Opening of the Congress of Evangelical Associations. Philadelphia: Arrest of Henry S. Cochran for robbing the United States mint. New Mexico: Meeting of the Southwest Silver Convention at Albuquerque. New York: Second annual conference of Christian Prohibitionists.

20. Virginia: A mob attacks the jail at Roanoke, and is repulsed, with a loss of 7 killed and several wounded.

21. Virginia: Second and successful attack upon the jail at Roanoke; the negro who caused the riot taken out and hanged. Illinois: A train held up by robbers on the Central road; 1 robber and 3 trainmen shot; no booty secured. Chicago: Organization of the Brotherhood of Christian Unity as a result of the Parliament of Religions. Cleveland, Ohio: Twenty-fourth annual reunion of the Army of the Cumberland.

22. England: Adjournment of Parliament.

23. Washington: The Attorney-General announces that the Treasury Department will pay expenses for deporting the Chinese.

24. Vienna: Arrest of 14 anarchists and discovery of many dynamite bombs. Spain: During a military review at Barcelona anarchists throw bombs at the commanding officers; 1 soldier killed and others wounded; the offenders arrested.

25. Missouri: A gang of robbers hold up a train near St. Joseph; 2 of them killed and 4 captured.

26. Hartford, Conn.: Thirtieth annual convention



of the order of Good Templars. Philadelphia: Eighteenth annual convention of the Knights of St. John of Malta. Chicago: Odd-Fellows' day at the Fair.

27. Pennsylvania: Meeting of the State League of Republican Clubs at Reading. Chicago: Indiana day at the World's Fair; ex-President Harrison delivers an address.

28. Chicago: Opening of a convention of Spiritualists. Congresses of several religious denominations.

29. Spain: Discovery of an anarchist bomb factory in Barcelona.

30. Labor riot at Auburn, Me.

**October 1.** Final settlement announced of the Siamese difficulty.

2. Spain: More attempts to explode dynamite bombs at Barcelona.

3. St. Louis: Meeting of the Pan-American Bi-metallic Convention. Morocco: The Spanish garrison at Melilla attacked by a large force of Moors, 18 Spaniards killed and 35 wounded. The Moors repulsed. England: Opening of the English congress at Birmingham. Belgium: Spread of the strike among coal miners. Alabama: Troops called out by the Governor to quell riots of railroad strikers. Brooklyn, N. Y.: A bronze statue of Alexander Hamilton unveiled. Morocco: Strong Spanish reinforcements sent to the garrison at Melilla. South Africa: A warlike native tribe, the Matabeles, attack the British outposts.

5. Massachusetts: The Rev. Dr. William Lawrence consecrated Episcopal Bishop of the State. Indiana: Twenty-fourth Convention of the Evangelical Lutheran Church opened at Fort Wayne. Buffalo, N. Y.: Meeting of the Society of the Free Baptist Church. Brazil: Bombardment of Rio continues. Belgium: Collapse of the coal miners' strike.

6. Spain: Execution of an anarchist at Barcelona.

7. Chicago: Celebration of Poland's day at the World's Fair. India: Seven native mutineers blown from the cannon's mouth in Cabul.

9. Washington: Meeting of the Supreme Court. Chicago day at the World's Fair, more than 700,000 people present. Bohemia: Attempt on the part of anarchists to blow up a railroad train.

10. California: Meeting of the Irrigation Congress at Los Angeles. New York: Meeting of the annual convention of the Commercial Travelers' Association of Syracuse. Massachusetts: Eighty-fourth annual meeting of the American Board of Commissioners for Foreign Missions at Worcester. Centennial of Williams College. Chicago: North Dakota day at the World's Fair; Public Health Congress in the Art Building. Brazil: Bombardment of Rio continues.

11. New York: Annual Indian Congress at Lake Mohonk. Chicago: Connecticut day at the Fair.

12. New York: Celebration of the fiftieth anniversary of the Jewish order of B'nai B'rith. England: British miners lately on strike return to work at the old wages, having essentially gained their point against the owners. The International Peace League urges Mr. Gladstone to introduce a bill in Parliament favoring a permanent international court of arbitration. South Africa: Sharp fighting has taken place between the British and the Matabeles.

13. The Union Pacific Railway passes into the hands of receivers. New York: The American yacht Vigilant wins the third of the series of races for the America's cup off Sandy Hook, thus defeating the Valkyrie and retaining the cup for the New York Yacht Club. Ohio: Trial of the Rev. Dr. H. P. Smith, of Lane Theological Seminary, for heresy. France: Enthusiastic reception of Russian war ships at Toulon. Guatemala: The President dissolves Congress and assumes dictatorship.

14. Washington: Meeting of the National Association of Local Preachers of the Methodist Episcopal Church.

16. Chicago: Second biennial convention of the World's Women's Christian Temperance Union.

17. National encampment of the Medal of Honor Legion in New York. Paris: Reception of the Rus-

sian naval officers. Rome: A mob of anarchists breaks up a political meeting and burns the theater in which it was held.

18. Chicago: Meeting of the Supreme Council of Masons. Twentieth annual convention of the National Women's Christian Temperance Union. Baltimore: Celebration of the twenty-fifth anniversary of Cardinal Gibbons's elevation to the episcopate.

19. Trenton, N. J.: Unveiling of the battle monument with appropriate ceremonies. Chicago: Congress of Agriculture, Fisheries, Forestry, and Good Roads in session. Baltimore, Md.: Celebration by the Societies of Colonial Dames and the Sons of the American Revolution.

20. The Cunard steamers Campagna and Lucania respectively, break the westward and eastward records for quick voyages. South Africa: Continued fighting between the British and Matabeles. Morocco: About 12,000 Spanish troops are now available for the reduction of the Moors.

23. Chicago: Opening of the Missionary Council of the Protestant Episcopal Church; Congress of Real-Estate Men. Washington: The United States Supreme Court decides that the State of South Carolina has a right to the word "Palmetto" as a trade-mark under the new liquor law.

24. Michigan: The Supreme Court decides that the recent law permitting women to vote at municipal elections is unconstitutional. Illinois: Forty-seventh annual meeting of the American Missionary Association at Elgin. Paris: The visiting Russian naval officers depart for Lyons.

25. Acting Rear-Admiral Stanton recalled from the command of the South American squadron for saluting the flag of the Brazilian insurgents.

26. Launch of the United States battle ship Oregon at San Francisco. Germany: Mr. Runyon presents his credentials to the Emperor as ambassador for the United States.

27. Boston: Session of the Brotherhood of Railroad trainmen.

28. Chicago: Assassination of Mayor Carter Harrison at his home. Morocco: Engagement between the Spanish and Moorish forces; heavy loss of the Spaniards. Palestine: Fatal riot in the Church of the Nativity, Bethlehem.

30. Chicago: Close of the World's Fair, the intended ceremonies being much curtailed because of Mayor Harrison's assassination. Russia: The formation is ordered of 15 new reserve brigades, adding 150,000 men to the army. Switzerland: A general election results in defeat for the socialists.

**November 1.** South Africa: The British have gained decided advantages over the Matabeles, capturing their principal town. Morocco: Continued fighting between the Spaniards and tribesmen.

2. England: Reassembling of Parliament.

3. England: Mr. Gladstone announces that he will favor a bill providing a board of arbitration in the matter of strikes.

4. Chicago: Members of the City Council almost come to blows over the election of a successor for Mayor Harrison.

6. Washington: Appointment of Brigadier-General George B. Ruggles to be Adjutant-General, *vice* Adjutant-General Williams, retired. France: A riot at Marseilles by striking tramway men.

7. Mississippi: Indicted members of the White Cap Association burn the courthouse and all the county records.

8. Montreal: The chiefs of several Indian tribes meet to form a confederacy of North American Indians independent of the United States and Canadian governments. Spain: Anarchist outrage at Barcelona, 30 killed, 80 hurt, in a theatre.

9. An extradition treaty ratified between the United States and Norway. Spain: Further anarchist outrages in Barcelona, 50 arrests made. South Africa: Desperate engagement between the British and Matabeles; the British use their repeating guns, and about 2,000 natives are killed; slight British loss.

10. Secretary Gresham reports in favor of restoring the monarchy in Hawaii.

11. Kentucky: Robbers hold up a train on the Illinois Central Railroad.

12. Chicago: Anarchists are permitted to commemorate the executions following the Haymarket riots of six years ago. New York: Congress of the Salvation Army in session.

14. Georgia: Opening of the Exposition in Augusta. Trial trip of the new United States cruiser Columbia, off Marblehead; she proves to be the fastest war vessel afloat. Illinois: A train robbery attempted near Lincoln.

15. New York: Annual session of the National Grange Patrons of Husbandry (Grangers). London: The Bank of England a large loser through one of its trusted officials.

16. Philadelphia: General Assembly of the Knights of Labor in session.

19. Strike of trainmen, Lehigh Valley railroad.

20. Washington: Correspondence relating to Hawaiian affairs made public. The Supreme Court decides that the Great Lakes are included under the term "high seas." New York: The Brazilian dynamite cruiser Nietheroy sails for her destination.

21. Washington: Permanent headquarters established for the Republican National Committee. Iowa: A criminal taken from the courtroom at Ottumwa and lynched by a mob.

25. Washington: Further publications of the Hawaiian correspondence. New York: The Brazilian war ship America sails for the South. The Nathan Hale monument unveiled. Yale defeats Harvard at football, Springfield, Mass.

26. Philadelphia: Resignation of Master-Workman Powderly of the Knights of Labor. He is succeeded by J. T. Sovereign, of Iowa.

27. Scotland: The strike of the coal miners has raised the price of coal 25 per cent., and threatens all branches of trade.

28. South Carolina: Meeting of the Legislature. England: Memorial to James Russell Lowell unveiled in Westminster Abbey.

30. New York city: Princeton defeats Yale at football. Cambridge: Harvard defeats the University of Pennsylvania. Russia: Troops are sent to close a Catholic church at Krosche; a riot ensues, 20 are killed, 100 wounded.

December 1. Brazil: Admiral Mello leaves Rio harbor with his flagship.

2. Annapolis Naval Academy: The West Point football eleven defeated by the naval cadets.

3. London: Anarchist meeting dispersed by the police in Trafalgar Square.

4. The Supreme Court decides that the alien contract-labor law is constitutional. Scotland: More than 100,000 miners on strike.

9. Paris: An anarchist attempts to blow up the Chamber of Deputies while the House was in session; no fatal results, but many injured; the perpetrator is arrested.

12. Savannah, Ga.: Session of the National Farmers' Congress, 20 States represented. England: Another meeting of the unemployed dispersed in London.

13. Chicago: The American Federation of Labor adopts resolutions approving the anarchists.

14. Announcement of the arrival of the Brazilian cruiser Nietheroy at Brazil.

15. Mr. Thurston, the Hawaiian minister, sails for home from San Francisco, probably anticipating trouble in consequence of the recently announced Administration policy. Washington, D. C.: J. S. Morton, Secretary of Agriculture in President Cleveland's Cabinet, has been elected President of the American Forestry Association.

17. Paris: A number of dynamite cartridges discovered.

18. The President sends to Congress a message on the Hawaiian business. Texas: Four train robbers confess their crime and are each sentenced to thirty-five years' imprisonment. Italy: An antitax riot in Palermo.

26. Christmas: Commemorative services held throughout Christendom. Riot between Austrians and Magyars at Berringer, Pa.; attempt to blow up with dynamite a house where a wedding ceremony was in progress; a fight ensues, many severely injured. Spain: Further arrests of anarchists in Barcelona. Italy: Antitax riots in Sicily, Palermo, and elsewhere; 6 killed, 24 wounded, military reserves called out.

26. The United States cruiser New York sails for Rio de Janeiro, Brazil. Alleged negro riot at Wildwood, Fla.

27. Spain: Panic in the opera house at Madrid; cause, the alleged attempt of a dynamiter to throw a bomb. New York city: Dr. Parkhurst appears in court as a witness to prove negligence on the part of the police.

28. Africa: A large number of hostile tribesmen surrender to the Spanish authorities.

30. France and Spain sign a commercial convention.

## F

**FARMERS' CONGRESS.** The thirteenth annual session of the Farmers' Congress of the United States met at Savannah, Ga., Dec. 12, 1893. The representation is the same as that of the Congress of the United States, with the addition of a representative from each State agricultural society and each agricultural college, all appointed and commissioned by the governors of the various States. The session was called to order at the Guards' Armory by Vice-President Hon. D. G. Purce, and welcomed to Georgia by Major P. M. Weldrem, whose speech was responded to by Judge C. B. Rounds, of Maine. J. T. Wade and Mayor McDonough gave the congress a hearty welcome in behalf of the Georgia State Agricultural Society and the city of Savannah, and were responded to by Colonel Needham, of Massachusetts, and by Secretary Clayton, of Iowa. The roll-call showed the presence of representatives from 30 States.

The hospitalities of the city were extended to the body, and invitations were received and accepted to visit the Telfair Art Gallery, Georgia Historical Society, Savannah Board of Trade, Guards and Oglethorpe clubrooms, and other places of interest.

The second day the congress accepted an invitation to board the steamship "City of Macon," and was taken down Savannah river and out on the Atlantic Ocean. Returning, they were banqueted on board ship, and received at the wharfage of the city by a display of flags and the blowing of whistles from vessels representing nearly all nations.

The following subjects were discussed during the three-days' session: "Interstate Dependence of Business Relations," by Mr. Needham, of Massachusetts; "Agriculture South and West," by Mr. Burkitt, of Mississippi; "Organized Cooperation," by Mr. Slaughter, of Tennessee; "Our



National Wealth," by Mr. Stahl, of Illinois; "Business Methods in Farming," by Mr. Warren, of Georgia; "Thorough Agriculture," by Mr. Rankin, of Tennessee; "The Oyster as Human Food," by Dr. A. Oemler, of Georgia; "Profitable Stock on the Farm," by Mrs. A. E. Edwards, of Nebraska; "Farming in the West," by Mr. Hefelbower, of Kansas. These subjects, as well as the report of the Committee on Resolutions, were debated at length.

The following officers were elected to serve for two years: President, B. F. Clayton, Indianola, Iowa; Vice-President, Major G. M. Ryals, Savannah, Ga.; Treasurer, Henry Haden, Indianola, Iowa; Secretary in Chief, J. M. Stahl, Chicago, Ill.; First Assistant, W. J. Whidby, Atlanta, Ga.; Second Assistant, T. J. Appleyard, Sanford, Fla.

Parkersburg, W. Va., was selected as the place for the next meeting, which is to be held in October, 1894.

The following resolutions were adopted:

*Whereas*, Among many farmers of the various States of the Union certain prejudices exist as to railroads, or what some are pleased to call railroad monopolies, when in reality there is no just cause for such prejudices; and

*Whereas*, These prejudices are often induced and intensified by the speeches or arguments of persons seeking official positions, mainly for the purpose of influencing the favor and votes of farmers and others in aid of their desires for office; and

*Whereas*, Under such circumstances men are sometimes elected as members of legislative bodies, pledged to inaugurate and support, in the supposed interests of farmers, such unnecessary and radical measures as would interfere with the just rights and privileges of railroads, when there was no proper cause for such interference or need of the measures named: Therefore, be it

*Resolved*, By the Farmers' National Congress of the United States now assembled:

1. That we regard such prejudices on the part of farmers as unjust, as a general rule, and would herein condemn any action on the part of office-seeking politicians that is calculated to induce or intensify such prejudices as wrong, and which are often detrimental to the true interests of those whom they are seeking to represent.

2. That in many respects we regard the interests of farmers and railroads as being identical; that the general prosperity of one often depends mainly upon the prosperity of the other; and that for the true interests of both there should exist, as far as possible, proper harmony and friendship between them.

3. That while we would favor, and even recommend, such just and proper State and national legislation as would guard and fully protect farmers and other classes from unjust discrimination or wrongful imposition of any kind on the part of railroad companies or other corporations or combinations of capital, we are opposed to, and would herein condemn, as contrary to all principles of right and justice, any such unjust and radical legislative enactments as would seriously hamper or interfere in any manner with the proper constitutional and vested rights or interests of the railroad system of our country, unless some just and rational cause for the same is known to exist and is fully understood, before action is taken in the matter.

4. That members of our legislative assemblies, both State and national, be, and are hereby, requested to give due consideration to the subject contained in the foregoing resolutions; trusting that their actions as regards the matter may be controlled by such wisdom and forethought as the true principles of right and justice would demand.

*Resolved*, By the Farmers' Congress of the United

States, that the legislature of each State in the Union should enact such measures as will render more effective the work of the department of agriculture and of the experimental station, and that the results of their labor may be more widely disseminated.

*Resolved, further*, That statistical information is of great importance to agriculturists and the advancement of the interests of the farmer, and we urge that means should be adopted in all States to secure more extended and trustworthy data in that line.

*Resolved*, That we are in favor of the economical improvement of our water-ways and harbors, by liberal appropriations systematically expended in conformity with comprehensive plans and specifications prepared by a board of competent engineers; and

*Resolved*, That we commend especially to the favorable consideration of the Congress of the United States the connection of the Mississippi and Great Lakes by means of a ship canal, and the substantial improvement of the Mississippi and its tributaries, as well as the important harbors on the Gulf and Atlantic coasts.

*Whereas*, It has been proved by actual test that free mail delivery can be extended to villages and the more thickly settled farming communities with but little, if any increase, in the net expense of the Post-Office Department; therefore

*Resolved*, That we are heartily in favor of rural free mail delivery; and we hereby call upon the Congress of the United States and upon the Post-Office Department to extend the free delivery of mail into the country as fast as the same can be done without an onerous increase in the expense of the same; and

*Resolved*, That there should not be any lowering of the present rate of letter postage until mail is delivered at least 3 times each week throughout all townships having a population of ten or more to each square mile.

*Resolved*, In view of the great benefit not only to agricultural interests but to all others accruing from a well-conducted system of improved highways, we urge upon the governors of the several States of the Union to specifically call the attention of their State legislatures to the importance of action in devising such a system of highway improvements.

*Resolved*, That we urge upon all who are interested in the business of agriculture, and on those who are interested in pursuits on which agriculturists depend for supplies, to associate together in business organizations for the protection of crops and supplies, and for the transportation and marketing of the same.

*Resolved*, That the Farmers' Congress of the United States, by virtue of its constitution and organization, is not a political organization, but was founded for the purpose of benefiting the agricultural and other productive interests of the country, and to elevate and enlighten these great industrial interests.

**FINANCIAL REVIEW OF 1893.** The event of paramount importance this year was the repeal, after one of the most disastrous panics of the century, of the act of July 14, 1890, which required the Secretary of the Treasury to purchase monthly 4,500,000 ounces of silver bullion. Soon after the opening of the year there was a partial recovery from the feeling of depression which marked the close of 1892, encouraged by the hope that Congress would promptly act upon the measure introduced in the Senate in December for the repeal of the silver-purchase law; but when it was seen that there was a disposition to delay action, hope was almost abandoned, and public attention was directed to the efforts of the Treasury Department to postpone that crisis which, it was evident, would ere long be precipitated. Gold continued to move to Europe, and by the end of February \$6,775,000

had been sent to Germany and \$15,900,000 to France for the account of the bankers who were under engagement to supply Austro-Hungary. The net gold in the Treasury was then \$103,284,218, against \$108,181,714, Feb. 1, and \$121,266,662, Jan. 1. Manifestly, if gold shipments continued, and if the reserve in the Treasury was not augmented, there would very soon be a reduction in the net gold below the sum of \$100,000,000 which the unwritten law of the department had held to be a reserve exclusively for the redemption of United States notes. Upon the advent of the new Administration efforts were made to increase the gold reserve by exchanging legal tenders for the coin in the banks, but these efforts resulted in only a slight gain, for on April 1 the net gold was \$106,692,224. Gold shipments were than actively resumed, and by April 18 the reserve was reduced to \$1,040,000. Then followed the first stage of the panic caused by the expectation that redemption of Treasury notes of 1890 in gold would be immediately suspended, thus bringing about that which had long been predicted, the sudden change of the currency from a gold to a silver basis. But the prompt declaration of the President of a determination to exercise every power to preserve the parity between gold and silver restored confidence, and although the net gold in the Treasury was subsequently reduced much below the \$100,000,000 limit, falling to \$81,551,385 on Oct. 19, the redemption of all Treasury notes in gold served to dispel fears of a renewal of the crisis, at least from this cause. The gradual reduction of the gold reserve of the department caused withdrawals by interior banks of their deposits in the New York institutions, and brought about a general hoarding of gold all over the country in anticipation of the approach of the period when, unless relief were afforded, Treasury payments in gold would have to be suspended. The rapid depletion of New York bank reserves, these being drawn down to \$5,481,975, June 24, from \$25,439,925, May 27, and the absence of the least indication of anything more than temporary relief, laid the foundation for the acute stage of the panic, which was reached June 27, when the cable announced that the Indian Government had suspended the public coinage of silver. The tension relaxed, however, on the 30th, on news of the calling by the President of a special session of Congress for Aug. 7, to take action upon the silver-purchase law, and the panicky feeling partially subsided. But during the greater part of July the entire country felt the effect of the absence of confidence; the distress among banks, merchants, manufacturers, and all classes of the people was very severe; failures were frequent, large in number, and important; values of all share property shrank regardless of intrinsic merit, and the situation was deplorable. One encouraging fact, however, was developed, and that was that the trials and suffering of the masses of the people served to intensify the feeling that the silver-purchase law was the root of the existing trouble; and as this conviction grew, there arose a demand, which soon became almost universal, for the prompt repeal of this measure. This popular demonstration had its effect upon the direct representatives of the people in Congress,

and, soon after that body assembled in special session, Aug. 7, measures were formulated for the immediate and effective consideration of a repeal bill. The opposition were given every opportunity for the expression of their views not only upon free coinage at the various ratios from 1 to 16 to 1 to 20, but upon the question of the re-enactment of the act of 1878. Voting began upon the ratio amendments Aug. 28. That of 1 to 16 was defeated by 103 majority; 1 to 17 by 140; 1 to 18 by 135; 1 to 19 by 134; and 1 to 20 by 101. The majority for unconditional repeal was 129. This result was hailed with general satisfaction, and recovery from the depression was rapid, materially aided by large imports of gold and by easier money, until it was checked by the delay of the Senate in acting upon its repeal bill; but there was no recurrence of panic, and on the final passage of the Senate bill confidence in the stability of the currency was restored, and the question whether the obligations of the United States will be paid in coin current in all the markets of the world was settled probably for all time. Business recuperation was somewhat retarded by the agitation of measures for tariff reform; and, moreover, the delay of the Senate on the repeal measure had prevented merchants from taking advantage of the trade of the season, and it was not until late in November that there was much revival in business. Soon after Congress reassembled, in December, the majority of the Subcommittee of Ways and Means presented a detailed statement of the changes in the tariff which had been decided upon, and this report had a depressing effect upon many manufacturing enterprises, the opinion prevailing that there would be great delay in passing the tariff bill by reason of conflicting views of members. Woolen and iron manufacturing establishments closed down, thereby greatly increasing the number of the unemployed, and adding to the distress of the poor. Customs receipts fell to unprecedentedly low figures for December, contributing to a reduction in the Treasury cash to \$88,989,887, including \$81,475,335 net gold, by the end of the year. Secretary Carlisle recommended, in his annual report, an amendment to the resumption act of 1875, authorizing the department to issue \$200,000,000 3-per-cent. five-year bonds with the object of relieving the Treasury, and for other purposes. Realizing and speculative sales of stocks, encouraged by the financial embarrassments of the Atchison, Topeka and Santa Fé, which was placed in receiver's hands on the 23d, turned the market downward, and the feeling at the close of the year was gloomy.

Events abroad were more or less exciting at intervals during the year. The political tension in France resulting from the investigation into the Panama Canal scandal, which was severe at the end of 1892, was relaxed at the beginning of this year, and there was nothing of a disturbing character in that country until March 30, when the Ribot Cabinet resigned in consequence of a disagreement between the Chamber and the Government regarding the liquor amendment to the budget. A new Cabinet was promptly formed, to be again changed in April, and again early in December. In May there was a feeling of financial distrust, which was reflected by a fall in



rentes, and deposits were largely withdrawn from the savings banks. In July and August the demands of France upon Siam for reparation for violations of treaty stipulations attracted the attention of the English Government; but the compliance of Siam with the French demands prevented English interference and probably averted a crisis. In April there were very important failures of Australian banks, brought about by the fall in silver, the low prices for wool, and the collapse of land speculations. These failures had a decided influence in London, and before the troubles ended 13 Australian banks had failed, with liabilities aggregating about \$450,000,000. One event in April was a *coup d'état* by the young King of Servia, who dismissed his regents and assumed control of the Government. On June 26 the announcement was made in the British Parliament that the Government of India had decided to suspend the public coinage of silver. Thereupon there was an unsettling fall in the price of bar silver in London from 38½ pence per ounce early in the month to 30½ pence on the 30th, and a derangement of Eastern exchange was prevented only by the Indian Government fixing the price of the rupee at 1 shilling 4 pence. With the exception of silver stocks the general market in London was not greatly affected. In August large withdrawals of gold from London for shipment to New York led to an advance in the bank of England rate of discount to 5 per cent. The great lockout of coal miners, who had resisted an attempt to reduce wages, began in August, and about 350,000 men were out of work until the middle of November, when the differences were compromised through the intervention of the Government, and the men resumed work at the old scale of wages. It is estimated that the lockout involved seven of the railroad lines of Great Britain in a loss of about \$9,000,000, and a loss to important industries of \$150,000,000. Toward the end of August an insurrection in Brazil, led by Admiral Mello, caused a fall in the bonds of that country, and the tension of political and financial affairs in Italy and Spain affected Internationals in all the European markets. In October the visit of the Russian fleet to Toulon and the extravagant demonstrations of welcome to the visitors by the French officials and people attracted the attention of the other powers, and gave color to reports that an alliance had been formed between the two nations in opposition to the *Dreibund*. Early in November there was a panic on the Italian bourses, caused by the financial embarrassments of the

16th of the affairs of Overend, Gurney & Co., who failed May 10, 1866, for \$55,000,000, involving six banks with an aggregate capital of \$150,000,000. The ultimate loss to stockholders was \$15,000,000. Another feature was the retirement of Mr. Frank May, who for twenty years had been cashier of the Bank of England, in consequence of indiscretions connected with the house of Coleman & May, which resulted in a loss to the bank of about £25,000. On Nov. 25 there was a Cabinet crisis in Italy, caused by dislosures in connection with the affairs of the Bank of Rome; a similar crisis in France, growing out of differences between President Carnot and M. Dupuy, Prime Minister; and also a confession by the Premier of Greece of the insolvency of that country. On Dec. 9 the explosion of a bomb, thrown upon the floor of the French Chamber of Deputies by an anarchist named Vaillant, had a startling effect in all the European capitals, and at once led to the adoption of vigorous repressive measures against anarchists, particularly by the French Government; the Italian Cabinet was reorganized by Signor Crispi; there were indications of a revolutionary movement in Sicily, and although the political tension in Europe was somewhat relaxed, there was more or less anxiety at the close of the year. The following tabular survey of the economical conditions and results of 1893, contrasted with those of the preceding year, is from the "Commercial and Financial Chronicle":

ECONOMICAL CONDITIONS AND RESULTS.	1892.	1893.
Coin and currency in the United States, Dec. 31.....	\$1,764,935,923	\$1,846,161,808
Bank clearings in the United States .....	\$62,109,062,074	\$54,330,808,322
Business failures.....	\$114,044,167	\$346,779,889
Imports of merchandise (year).....	\$840,930,955	\$776,745,681
Exports of merchandise (year).....	\$938,420,660	\$876,148,023
Gross earnings 124 roads (year).....	\$564,054,439	\$552,822,299
Railroad construction, miles... ..	4,648	2,630
Wheat raised, bushels.....	515,949,000	396,131,725
Corn raised, bushels.....	1,628,464,000	1,619,495,181
Cotton raised, bales.....	6,717,142	7,275,000
Pig iron produced (tons of 2,240 pounds).....	9,157,000	7,124,502
Steel rails, Bessemer (tons of 2,240 pounds).....	1,458,732	1,036,467
Anthracite coal (tons of 2,240 pounds).....	41,989,884	43,018,526
Petroleum (runs) production, barrels.....	32,761,466	30,457,172
Immigration into the United States (year).....	543,487	488,775

The prices of leading staples on or about the 1st of January, 1894, compared with prices at the same date in 1893 and 1892, were as follow:

STAPLES.	1892.	1893.	1894.
Cotton, middling uplands, per pound.....	7½	9½	8
Standard sheetings, per square yard.....	6½	6½	6½
Wool, Ohio XX, per pound.....	30 to 31	28 to 29	24
Iron, American pig No. 1, per ton.....	\$16 to \$17	\$15 to \$15 50	\$14
Steel rails at mills, per ton.....	\$30 00	\$29	\$24
Wheat, No. 2 red winter, per bushel.....	\$1 04½	79½	65½
Corn, Western mixed No. 2, per bushel.....	52½	49½	43
Pork, mess, per barrel.....	\$10 00	\$16 25	\$14 to \$14 25

Government, which somewhat affected Berlin; and there was also an uneasy feeling at Vienna growing out of a rise in the gold premium and a break in Government securities. One feature in London was the final settlement on the

**The Crops.**—The yield of wheat, corn, and oats was small in 1893, while that of cotton was better than during the previous year, and, compared with the heavy cereal crops of 1891, the returns of this year seemed to be failures, and

particularly so as regards corn, which was affected by the drought in the summer. The wheat crop of 1893 was estimated at only 396,131,725 bushels, the smallest since 1885. Corn was estimated at 1,619,495,131 bushels, only a little larger than in 1890, although early in the season the indications pointed to a much more abundant yield. The oat crop was estimated at 638,854,850 bushels. The inclination to plant cotton was encouraged by a better range of prices. There were large stocks of wheat in nearly all the countries of the world, and notwithstanding the decrease in the crop in the United States, the visible supply was large and prices were very low in the fall months. The depression in the cotton trade operated against the price of the staple, and as the year closed it was selling about two cents below the figures at the end of the previous year. The agricultural bureau in November reported average prices by farmers and planters of the various staples as follow: Wheat, 52·1 cents per bushel against 62·4 in 1892; rye, 51·8 against 54·8; oats, 2·88 against 31·7; barley, 40·6 against 47·2; corn, 37 against 39·4; and cotton, 6·99 cents per pound against 8·04 cents.

Taking prices in New York, Jan. 1, if the whole of the crops could have been laid down at that point on that date, the values would have been as follow:

PRODUCTS.	CROP OF 1892.			CROP OF 1893.		
	Yield.	Price, Jan. 1, 1893.	Value.	Yield.	Price, Jan. 2, 1894.	Value.
Wheat, bushels.....	515,949,000	\$0 79½	\$411,169,327	396,131,725	\$0 65½	\$259,466,279
Corn, bushels.....	1,628,464,000	49½	802,018,520	1,619,495,131	43	696,382,906
Cotton, bales.....	6,575,000	9½	339,453,125	7,275,000	8	291,000,000
Total values.....			\$1,552,640,972			\$1,246,849,185

**Stocks.**—The unsettled feeling which prevailed at the end of last year continued to grow more intense during the first half of 1893, when the panic occurred, and it was not until the passage by the House of Representatives of the Wilson bill, repealing the silver-purchase law of 1890, that there was any substantial recovery in the stock market, and then the improvement was checked by the delay of the Senate in acting upon the Voorhees measure. After this passed the market was irregular, growing more active and stronger until toward the end of the year, when prices fell off, and the tone was unsettled by the Atchison and the New York and New England receiverships, and the market closed generally lower.

The feature of the market early in January was selling of Reading, based upon evidence of the embarrassed condition of the company, which compelled the borrowing of \$6,000,000 on collateral trust bonds for the purpose of meeting the floating debt and to provide for payments of interest obligations, net earnings having been diverted to other purposes. The stock was also affected by the severance of the Central New Jersey from the Reading system, in compliance with the order of the Chancellor of New Jersey. Toward the middle of the month there was a recovery in this stock and a reaction in the whole market, due to rebuying to close out short contracts, and the most important advances were in

New England, Manhattan, Whisky, and Sugar, and the tone was more or less favorably influenced by the temporary suspension of gold exports and by an improvement in the condition of the banks. Gradually the whole list advanced, and the tendency was generally upward until near the end of the month, when a bearish demonstration upon Whisky, Manhattan, and Consolidated Gas had an unsettling effect upon the market; and the tone was heavy at the close, when it was to some extent influenced by an unexpected renewal of gold exports. Selling of Whisky by members of a disrupted pool had a disturbing effect upon the general market early in February, but soon after there was a recovery, led by Manhattan, Cordage, New England, and the Grangers, and a better feeling due to the news that a few of the banks would exchange their gold for legal tenders at the Sub-Treasury. Before the middle of the month, however, the market again fell off, influenced by continued shipments of gold to Europe, by the partial abandonment of the efforts of the banks to relieve the Treasury, and by the increasing gravity of the currency situation. Western railroads were more or less affected by the threatening attitude of some of the employees, who were disposed to take advantage of the necessities of the roads and demand increased wages; and severe storms in the

West promised materially to reduce railroad net earnings. During the third week in the month the feature was liquidation by the pool in Sugar, which directly influenced the other industrial stocks, and there was free selling of Reading, the Grangers, Manhattan, New England, General Electric, and Chicago Gas, and at times the market was panicky. On the 25th the Philadelphia and Reading road was placed in the hands of receivers for the third time in its history, thus confirming the rumors of financial embarrassment which had been current since December. The receivership was precipitated by the inability of the company to pay a demand loan for \$200,000, and by the suspension of payments of interest on the third preference incomes. The announcement of the appointment of receivers was followed by liberal selling of Reading, New England, all the coal shares, and almost everything on the list, and the business of the 25th was unprecedentedly large, amounting to 1,476,283 shares, of which 963,030 were Reading. The market was quite feverish for the remainder of the month, although there was a feeble reaction in stocks other than the coal shares at the end, due to news of the practical defeat of the anti-option bill and also by easy money. In March the market opened excited and lower, with Reading, New England, Northern Pacific preferred, Sugar and Cordage weakest, the first-named property being affected by reports that the floating debt was \$17,000,000;



New England by a statement that Mr. McLeod had control, and the general market by the reduction in the Treasury gold reserve, through shipments to Europe, and by the demand by banks in the interior for part of their New York balances, indicating a disturbed feeling, particularly at the West regarding the currency situation. The unsettled movement in the stock market increased during the second week in consequence of a manipulated advance in the rate for money, and the most important declines were in the Industrial stocks and in General Electric. There was a partial recovery in the third week, due more to rebuying to close short contracts than to any improvement in the situation, although exchange was below the gold-exporting point, but this was because of activity in money. In the closing days of the month the Treasury showed an accumulation of gold, the result of the check to the European drain, and this in part aided in a recovery in stocks, and in some of the specialties the upward reaction was quite decided, the demand for rebuying developing a scarcity of stock. The action of the managers of the Toledo, Ann Arbor and North Michigan in appealing to the United States Court for relief from the striking engineers and switchmen had a good effect upon the market for Western stocks, because it seemed to prepare the way for a resort to the courts by corporations who might be embarrassed by the aggressive course of dissatisfied employees. Although irregular, the market was generally stronger for the remainder of the month. The leading features in April were a fall on the 3d of 10 points in Manhattan, due to a decision by the Rapid-Transit Commission to consider plans for an underground road; the resignation on the 5th of Mr. McLeod as President of the Reading; and a recovery in Manhattan on the 12th because of the abandonment by the Rapid-Transit Commission of the underground scheme. The tone of the market was generally strong until the middle of the month, when there was a panicky fall, caused by the rumor that gold payments of Treasury notes would be suspended; but when this was denied the excitement subsided, and the stock market reacted. Prominent features in the last week in the month were a fall of 17 points in Toledo, Ann Arbor and North Michigan, followed by the appointment of a receiver; a decline in Whisky on the passing of the dividend; and an advance in Reading on the report of a reorganization scheme. The market was irregular and generally lower at the close of the month, and it was unsettled and weak during the greater part of May. One feature was the placing of the National Cordage Company in the hands of a receiver. The stock fell sharply on the news that the company would issue \$2,500,000 preferred stock for the purpose of carrying on the operations of the concern. The selling of Cordage stock caused the failure of several brokerage firms, and precipitated a receivership. There was free selling of General Electric on news of the sale by the company of its holdings of Edison Illuminating stock, and the fall in this property and in Cordage more or less affected the other Industrials. Richmond Terminal and Reading securities fell off on news of the failure of the reorganization schemes.

There was a gradual decline in nearly all the active stocks, due to the deranged financial situation, as shown by the failure of the Chemical and Columbia Banks in Chicago; the suspension of several institutions in Illinois, Indiana, Ohio, and Michigan, which were organized on an insecure basis; the inability of merchants freely to borrow even at comparatively high rates; and there was a feeling that the situation would not be relieved while the silver-purchase act of 1890 remained in force. The unsettled movement in stocks continued until the third week of the month, when rebuying to cover short contracts and a manipulated advance in some of the specialties brought about an irregular recovery, but in the closing days large shipments of gold and mercantile failures throughout the country induced a renewal of the selling movement, and the tendency was generally downward to the end of the month, with the most important declines in General Electric, Cordage, Sugar, the Grangers, Reading, the other coal shares, and New England. One feature was a fall in some of the leading investment properties, which had a disturbing effect upon the whole market. Although the short interest was large at the beginning of June, the bears did not hesitate to attack prices, and one feature was a sharp fall in Whisky, followed by General Electric. The whole market was influenced by a large movement of gold to Europe, caused by the Australian crisis, and although there were occasional reactions the tendency was downward during the entire month. One minor disturbing factor was news of a defalcation in the Irving Savings Bank. The growing stringency in money was another factor, and even the decision of the New York Clearing House to issue loan certificates for the purpose of relieving the situation as far as possible was regarded as indicating a strained condition of some of the banks. Everybody was looking for some action by the President; and when, on the 26th, it was semiofficially stated that no extra session of Congress would be called before September, there was a panicky plunge downward in stocks and still greater activity in money, which induced the Clearing House Loan Committee to take out for their respective banks \$6,300,000 certificates, which action temporarily averted a crisis. On the following day, however, news that the Indian Government had suspended public coinage of silver brought about the acute stage of the panic; the fall in some of the specialties was rapid, and the excitement was intense, with an urgent demand for money at 72 per cent. as one feature. Silver certificates representing bullion sold at 62. The panicky feeling was increased by the extreme urgency in the inquiry for money from all quarters, more particularly from the main distributing points, and also by news of a decline in wheat at Chicago to 61½ cents. On the following day the market feverishly rallied on a rumor, later confirmed, that a special session of Congress had been called for Aug. 7. Activity in money, failures of Colorado banks, unfounded rumors of trouble in New York institutions, which were solely based upon applications for Clearing House loan certificates, and free selling of stocks by the arbitrage houses for European account caused the market to grow

feverish and lower in July, and during the first week the bears took advantage of the fact that the issue of \$21,665,000 Clearing House loan certificates thus far exceeded by \$5,020,000 the amount of those issued in the Baring panic of 1890, and it was represented that this indicated that the situation was very grave. Early in the second week of the month the news of the failure of the London branch of a large Australian house, and a vigorous raid upon General Electric and demonstrations upon all the leading stocks, kept the market in a demoralized condition until near the close, when there was a rally. In the third week the suspension of the Schlessinger ore syndicate directly affected Chicago and Northwestern, and during the entire week there was quite general liquidation of all leading speculative stocks, and more or less free selling of many of the first-class investment properties, the market experiencing a still panic with a gradual shrinkage of values regardless of intrinsic merit. The special influences operating were runs upon banks in the Northwest and the placing of the Erie in the hands of receivers. In the last week of the month the tendency continued downward, affected by activity in money, vigorous bearish demonstrations, the failure of two stock houses in New York, of the Mitchell Bank at Milwaukee, and of institutions at Indianapolis, Louisville, and other parts of the country, and the market was weak until the closing days of the month, when there was a partial rally, caused by news of the shipment of \$1,500,000 gold from London to New York. The most important declines for the month were: 20½ per cent. in Sugar, common, 14½ in the preferred; 10 in Atchison; 16½ in Central New Jersey; 30½ in Chicago Gas; from 11½ to 17½ in the Grangers; 21½ in Manhattan; 31½ in General Electric; 14½ in Louisville and Nashville; 13½ in Northern Pacific preferred; and 9½ in Western Union. There was almost a complete revolution in the market during August. It was influenced in the first week by the shipment of large amounts of gold from London for New York, by a sharp fall in wheat in Chicago, and the collapse of the pork and lard deals at that center which promised liberal exports of those staples. These events brought about a covering of short contracts in leading properties and buying for the long account. Congress assembled in extraordinary session on the 7th. The message of the President, setting forth that the object of assembling Congress was to secure the prompt repeal of the act of July 14, 1890, which required the purchase of silver bullion, was promptly followed by the preparation of a bill for that object by the House Finance Committee and the agreement by the Democratic caucus upon a plan for the consideration of the measure. Although the movement in stocks was irregular, due to the renewal of raids by the bears and to more or less important failures throughout the country, the tone was generally strong during the second week, and the favorable influences were comparatively easy rates for money on call, receipts of over \$14,000,000 gold from Europe, and an important increase in national bank circulation. In the third week the tone was irregular and lower, caused by the unfavorable condition of the banks, as shown by the statement, indicating that the gold which came

from Europe had gone into the savings banks and trust companies instead of into the deposit banks. One feature was a fall in the Northern Pacifics caused by the placing of the road in the hands of receivers. There were vigorous attacks upon General Electric, the Grangers, Sugar, and Chicago Gas. After the 16th there was a partial recovery due to rebuying to close short contracts, and the improvement in the general market was gradual, although there were occasional periods of depression, until toward the close of the month, when there was a very decided advance caused by indications that the Wilson repeal bill would pass the House. News of the majorities against free coinage at the various ratios of from 1 to 16 up to 1 to 20 had a stimulating effect upon the whole list, and the market was buoyant on the 28th, when the Wilson bill passed by a decided majority. Thereafter to the close of the month the market was strong. There was a further marked improvement in the general situation during the first half of September, which was reflected in an advance in the stock market. Failures were less frequent, some of the banks which had suspended resumed business, cotton and iron mills started up, the premium on gold and currency disappeared, exchange was restored to a normal condition, and confidence began to grow in the belief that the Senate would speedily act upon the repeal bill. The outlook was encouraging, and the market was quite strong until the 13th, when there were indications of a withdrawal of support by bull combinations who had marketed their lines of stock, and then came bearish demonstrations and free selling of Union Pacific, General Electric, and Chicago, Burlington and Quincy, on reports that the holdings of Mr. Frederick L. Ames, who had died suddenly, would be thrown upon the market. This was followed by an upward reaction in these properties, but the movement was irregular and lower after the 15th, and it felt the effect of the delay of the Senate in acting upon the repeal bill. In the last week the market was irregular and generally heavy, influenced by a rise in exchange to near the gold-exporting point, by the obstructive tactics resorted to in the Senate to prevent action upon the repeal bill, and by more or less vigorous bearish demonstrations. The tone was irregular at the close of the month. The movement was dull and almost featureless during the first few days of October, and about the only really active stock was Lackawanna, which advanced 10 points on a manipulation of the short interest in it. Thereafter until the middle of the month the speculation was more active and prices lower, and there was free selling of Union Pacific in anticipation of the appointment of receivers, and on the 13th this event occurred. About the only strong stock was Hocking Valley, which advanced on the news of the decision of the Burke suit in favor of the company. Influenced by the prospects for a speedy ending of the debate upon the silver repeal bill in the Senate, the market improved in tone after the 16th, and the feature on the 23d was a rapid advance in Lackawanna on the announcement that 40,000 shares of the stock had been transferred to Mr. W. K. Vanderbilt. It was at first supposed that this was part of a plan for a new coal combination, but later it appeared that control



of the Lackawanna was sought in the interest of the Vanderbilt trunk lines, and then Lake Shore, New York, Chicago and St. Louis, and Michigan Central sharply advanced, stimulating an improvement in the whole list. The tendency of the market was very decidedly upward until the 30th, when realizing sales, bearish pressure, and European selling brought about a decline, and the market was irregular at the close of the month, although the repeal bill passed the Senate on the evening of the 30th, and it was concurred in by the House on Nov. 1, when it was signed by the President. The failure of the London market to respond to the news of the passage of the bill encouraged bearish demonstrations upon some of the specialties, notably Louisville and Nashville and Chicago Gas, and the tendency was downward until the 8th, when there was a sharp recovery, stimulated to some extent by news of the elections, and it was claimed that the decided Republican gains in Ohio, Pennsylvania, and Massachusetts indicated a popular feeling against tariff revision. When the short interest in the market was closed out prices fell off, and then the bears operated against the stocks of Western roads on the theory that, the World's Fair having been closed on Oct. 31, the railroads would show a decided falling off in revenue for the succeeding months. The tendency was irregularly downward, with General Electric, Reading, Sugar, and Louisville and Nashville weakest, until the 20th, when there came a recovery. The coal shares were favorably affected by a strike of employees on the Lehigh Valley, on the theory that this would restrict the output of coal; the Grangers were influenced by a smaller decrease in earnings than was expected; Sugar, Chicago Gas, and Western Union improved in consequence of manipulation; and General Electric was about the only really weak stock. The bullish feeling was encouraged by indications of an improvement in general trade reflected in an important auction sale of domestic dry goods, and also by the extremely easy market for money, which induced investment purchases. On the 27th the news of an agreement by the Democratic members of a subcommittee of the Ways and Means Committee of the House of Representatives upon a tariff bill had a specially disturbing effect upon Sugar and the other industrial stocks, the bill providing for a reduction of one half in the tax upon refined sugar, the gradual abolition of the bounty upon raw sugar, and important changes in the tax upon lead and cordage. But the market soon reacted under the lead of the Grangers and other railroad properties, and the tone was generally strong at the close of the month, and one feature was a good demand for railroad mortgages and dividend-paying stocks for investment. The tendency was irregularly downward early in December, influenced by realizing and speculative sales, disappointing traffic returns of important railroad lines, and evidence of an increase in business depression. There were rumors from London that the Atchison, Topeka and Sante Fé would be placed in the hands of receivers, and until this story was officially denied the stock and bonds were freely sold. But on the 23d receivers were appointed. The catastrophe was precipitated by the

death on the 20th, of Mr. George C. Magoun, of Baring, Magoun & Co., the fiscal agents. The suspension of the St. Nicholas Bank, on the 20th, had a disturbing effect, encouraging vigorous demonstrations by the bears, and during the closing days of the year the whole market was weak. The New York and New England was placed in receivers' hands on the 27th, and this stock and Atchison fell to the lowest prices on the 30th.

Total sales of stocks at the New York Stock Exchange for 1893 were 80,977,839 shares, against 85,875,092 in 1892; 69,031,689 in 1891; 71,282,-885 in 1890, and 72,014,600 in 1889.

The following table shows prices of leading stocks at the beginning of the years 1892, 1893, and 1894:

STOCKS.	1892.	1893.	1894.
New York Central.....	116½	109½	98½
Erie.....	84½	24	14½
Lake Shore.....	123½	128½	120
Michigan Central.....	106	104½	95½
Rock Island.....	89½	82½	63
Northwest, common.....	116½	112	98½
St. Paul, common.....	82½	73½	56½
Dela., Lackawanna and Western.	139	154	161½
Central New Jersey.....	113	126	112

The following shows the highest prices of a few of the speculative stocks in 1892, and the highest and lowest in 1893:

STOCKS.	1892.	1893.	
	Highest.	Highest.	Lowest.
American Sugar Refining Co...	115½	134½	61½
Atchison, Topeka and Sante Fé..	46½	36½	9½
Central New Jersey .....	145	132½	84
Chicago, Burlington and Quincy.	110½	103½	69½
Chicago Gas Trust.....	99½	94½	39
Delaware and Hudson .....	149½	139	102½
Dela., Lackawanna and Western.	167½	175	127
Distillers' and C. F. Co.....	72½	66½	12
Erie .....	34½	26½	7½
Lake Shore .....	140½	134½	104
Louisville and Nashville .....	84½	77½	39½
Manhattan Elevated Consol....	156½	174½	100
Mission Pacific .....	65½	60	13½
National Cordage Co.....	142½	147	7
National Cordage Co., preferred..	123½	118½	22
National Lead .....	51½	52½	18½
National Lead, preferred .....	99½	96	48
New York Central .....	119½	111½	92
New York and New England ...	59	52½	9½
Northwestern .....	121½	110½	84½
Northern Pacific .....	26½	18½	3½
Northern Pacific, preferred .....	72½	50½	15½
Omaha.....	54½	58½	24
Omaha, preferred.....	123½	121	94
N. Y., Ontario and Western.....	23½	19½	11
Pacific Mail .....	40½	27½	8½
Reading .....	65	53½	12
Rock Island .....	94½	89½	51½
St. Paul.....	84½	83½	46½
Union Pacific .....	50½	42½	15½
Western Union.....	100½	101	67½

**Foreign Exchange.**—The imports of merchandise for the year ending Dec. 31, 1893, were \$64,185,274 below those for 1892, and the exports of domestic and foreign merchandise were \$62,272,637 less. The excess of merchandise exports over imports for the year was \$99,402,342, against \$97,489,705 for 1892. The excess of exports over imports of merchandise, coin, and bullion for 1893 was \$134,362,942, against \$170,-820,397 for 1892. Gold exports were \$7,001,965 in excess of the imports in 1893, against \$59,081,-110 in 1892.

Foreign exchange opened in January at \$4.86 for sixty-day, and \$4.88½ for sight. There was an advance to \$4.87 for the former and \$4.89 for the latter by the middle of the month, when the demand was good for long sterling, in consequence of easier discounts in London. The tone was easier at the close, because of offerings of bills drawn against purchases of securities for European account. Exports of gold during the month amounted to \$8,925,000. The defeat in the House of Representatives of the measure known as the Andrews-Cate bill, having for its object the repeal of the silver-purchase law, and the refusal of the Senate to consider a resolution having a similar object, had an unfavorable effect upon exchange early in February, and after opening at \$4.86 to \$4.86½ for sixty-day and \$4.88 to \$4.88½ for sight, it advanced to \$4.87½ for the former and \$4.89½ for the latter, and it continued strong until toward the close, when the market was affected by dearer money, but it subsequently reacted, and at the end of the month rates were \$4.86½ to \$4.87 for sixty-day and \$4.88½ to \$4.89 for sight. The shipments of gold amounted to \$13,750,000. In March the opening rates were \$4.86½ for long and \$4.88½ for short. There was an advance on the 3d to \$4.87 for the former and \$4.89 for the latter, but on the 6th the market was unsettled by active money, and on the following day there was a fall to \$4.85 for sixty-day and \$4.87 for sight, rates subsequently reacting 1½ cent per pound sterling for both. On the 13th and 14th the market was again unsettled by active money and by liberal offerings of loan bills, but when money grew easier and the supply of drafts was absorbed there was a recovery, and the market closed at \$4.87 for sixty-day and \$4.89 for sight. Gold shipments were \$3,300,000. In April the market was strong throughout the entire month. The opening rates were \$4.87 for sixty-day and \$4.89 for sight, and they remained unchanged until the 17th, when there was an advance of half a cent per pound sterling, and on the 20th there came a further rise to \$4.88½ for long and \$4.90½ for short, caused by reports that the Secretary of the Treasury would refuse to redeem Treasury notes of 1890 with gold. This caused an urgent demand for exchange, and much excitement prevailed until the uncertainty regarding the policy of the Secretary was set at rest by the semiofficial declaration by the President that the parity between gold and silver obligations of the Treasury would be maintained, whereupon there was a sharp fall in exchange to \$4.86 for sixty-day and \$4.89½ for sight, and the rates at the close of the month were \$4.86 to \$4.87½ for the former and \$4.89 to \$4.89½ for the latter. Gold shipments for the month amounted to £17,290,000. In May liberal offerings of bills against outgoing securities brought about a fall, on the 3d, from \$4.86½ for long and \$4.89½ for short at the opening to \$4.85½ for the former and \$4.88½ for the latter, but these drafts were promptly absorbed, and then came a gradual advance to \$4.87 for sixty-day and \$4.90½ for sight by the close of the month. Gold shipments to Europe were \$13,250,000. Early in June the market was quiet at \$4.87 to \$4.87½ for sixty-day and \$4.90 to \$4.90½ for sight until the 9th, when it was unsettled by easier discounts in London

and dearer money in New York, and there was a decline to \$4.86 for long and \$4.88 for short. On the 16th offerings of loan bills brought about a fall to \$4.84½ for sixty-day and \$4.88½ for sight, and on the 21st the market was demoralized by stringency in money, and liberal offerings of loan bills and rates fell to \$4.82½ for long and \$4.84½ for short, the lowest since Dec. 28, 1891. It was then announced that \$500,000 gold had been bought in London for shipment to New York, and on the following day rates sharply reacted to \$4.84 for long and \$4.86 for short. There was another unsettling fall on the 28th and 29th in consequence of active money, and the rates at the close of the month were \$4.83 for sixty-day and \$4.84 to \$4.85 for sight. Exports of gold to Europe were \$9,000,000, but none was sent after the 7th. The arrivals of gold from Europe were \$500,000 on the 30th. In July exchange was firm early in the month at \$4.83½ to \$4.84 for long and \$4.85½ to \$4.86 for short in consequence of a demand to remit for July interest and dividends, but the tone grew easier when this inquiry was satisfied, and rates gradually fell to \$4.83 to \$4.83½ for sixty-day and \$4.85 to \$4.85½ for sight, so remaining until the 26th, when a pressure of security bills and active money forced rates to \$4.81 for long and \$4.82 for short, although some bankers posted at the same time \$4.83 for the former and \$4.84 for the latter. Rates at the close were \$4.81 to \$4.81½ for long and \$4.84½ to \$4.85 for short. The arrivals of gold from Europe during the month were \$2,285,500. In August exchange opened at the rates ruling at the close of July, and the market was in an abnormal condition during the entire month, affected by the premium in currency upon gold in transit and to arrive, and rates moved between \$4.81 and \$4.84½ for long and \$4.85 and \$4.89½ for short. The premium for gold enabled bankers to buy the metal in London, remitting exchange therefor, and sell it while in transit or on arrival, and make a profit on the transaction. In this way gold to the amount of \$40,921,665 was imported during the month from Europe. With the close of August the premium on gold disappeared, and at the opening of September exchange resumed a normal condition, but the delay in action upon the silver repeal bill in the Senate prevented the market from feeling the full effect of the improved foreign trade conditions. The movement of cotton, which had been delayed by a late season and by financial stringency, was moderately free, but the derangement in the currency situation prevented bankers from dealing extensively in futures, and consequently the market was dependent upon offerings of bills against actual shipments of the staple. Operators in grain in Liverpool, after obtaining pretty full supplies, traded in the markets in such a way as to limit exports, buying grain for shipment and selling it before it reached the seaboard, repeating the operation as long as it could be made profitable. The uncertainty regarding the outcome of the silver repeal bill in the Senate kept Europeans out of the market for American securities, and the mercantile demand for remittance and settlement of credits and the bankers' inquiry for bills to cover those previously sold, in the expectation of being



covered by the shipment of staples, tended to absorb offerings as fast as they were made, and thus the market for exchange was kept generally firm. The opening rates were \$4.83 to \$4.83½ for sixty-day and \$4.86½ to \$4.87½ for sight, and there was no particular change until the third week, when in consequence of a demand for mercantile settlements there was an advance to \$4.87 for the former and \$4.89 for the latter, but by the end of the month rates declined to \$4.84½ to \$4.85 for sixty-day and \$4.87½ to \$4.88 for sight. The Bank of England rate of discount was reduced during the month from 5 to 3½ per cent. Gold to the amount of \$3,712,449 came from Europe, chiefly in the first week. The market was lower in October, influenced by a liberal supply of cotton bills, and by a lighter demand for remittance. The rates at the opening were \$4.86 for sixty-day and \$4.88 for sight. There was a decline to \$4.83½ for the former and \$4.85½ for the latter by the 10th, when there came a reaction due to the delay of the Senate in acting upon the repeal bill, but soon after rates declined, and by the 27th \$4.81 for long and \$4.84 for short were recorded, and then \$500,000 gold was ordered out from London, followed by the engagement of \$1,000,000 more. An advance in open market discount rates in London and selling of stock for European account caused a reaction in the rates to \$4.82 for sixty-day and \$4.85 for sight by the close of the month. In November the market gradually grew stronger, influenced by very cheap money in New York, which induced purchases of long sterling for investment, and bankers refrained from drawing except for current needs. The export movement of cotton was comparatively light, and consequently the market was kept bare of bills and exceedingly narrow and sensitive. Toward the end of the month a demand for mercantile remittances and for bankers' settlements carried rates up to \$4.84½ for sixty-day and \$4.87½ for sight. Gold arrivals were \$3,400,000, but these came early in the month. Influenced by a demand for investment, induced by the extremely low rates for money, and also by purchases to anticipate maturing settlements, the market grew stronger early in December, and sterling advanced to \$4.86 for sixty-day, and \$4.88½ for sight. As rates for the latter showed a slight profit for exports of gold, foreign bankers shipped \$2,200,000 of the metal to Germany, where discounts were high, but this movement ceased after the middle of the month. When the inquiry for remittance for January interest was satisfied, the exchange market grew easier, and rates closed at \$4.85 to \$4.85½ for sixty-day and \$4.87½ to \$4.88 for sight.

**Manufacturing Industries.**—The consumption of cotton in the United States for the year ending Aug. 31 was estimated by the "Chronicle" at 2,683,701 bales, against 2,706,471 for the previous year. Cotton spinning was mainly affected by the financial depression during the last half of the year. The Fall River companies, on a capital of \$21,458,000, paid average dividends of 7.95 per cent. for the calendar year 1893, against 7.52 per cent. in 1892, but in the last six months of 1893 many mills were closed for part of the time and dividends were probably not paid from earnings. The wool and woolen trade gave

promise of good business at the beginning of the year, but the financial crisis had a depressing effect, and in the summer many mills were shut down, while in the fall proposed tariff changes had an unsettling influence, and the trade in goods and raw material was discouraging and prices were near the lowest point. Production of iron in the first six months of 1893 was very near the large total of 1892, and the output of pig iron for the first half of the year was 5,110,468 net tons, against 5,342,045 in the same period of 1892. But in the remaining six months the iron industry suffered extraordinary depression, the number of furnaces in blast decreasing from 251, May 1, with a weekly capacity of 181,551 tons, to 114, Oct. 1, with a capacity of 73,895 tons. After this date there was some improvement, and on Dec. 1 the active furnaces increased to 120, with a weekly capacity of 99,379 tons. There was a good business in anthracite coal, but the petroleum product decreased.

The record of business failures shows that the year 1893 was the most disastrous ever experienced, especially to the industries of the country. The total does not include bank or railroad failures, embracing only mercantile suspensions. These were 16,115, involving \$346,779,889 liabilities, against 10,344, involving \$114,044,167, in 1892. The average of losses was \$23,320, against \$22,369 in 1878, when the 10,478 failures involved an aggregate of \$234,383,132. Even in the first quarter of the year the liabilities and the average exceeded the figures for every quarter of 1892, and the second quarter of 1893 was the most disastrous. The number of national, State, and savings banks and private bankers failed was 613, and the Comptroller of the Currency reports that 158 national banks suspended, of which, however, 86 subsequently resumed. Of the 200 State banks which failed, only 48 resumed; and of 202 private bankers who suspended, only 30 had resumed at the end of the year.

**Money.**—The extremes for money on call at the New York Stock Exchange during 1893 were 72 and ¾ of 1 per cent. The highest rate was recorded June 27, partly the result of manipulation aided by the strained financial situation. Concurrently with the action of the New York savings banks in requiring notice from depositors of an intention to withdraw their deposits, there arose a premium upon all kinds of currency, gold and silver as well as paper, which amounted for a short time to as much as 2 per cent. The premium on gold in currency greatly facilitated the import of the metal from Europe during August, and the bankers were aided by the issue of Clearing House loan certificates by the associated banks, securities being deposited by the bankers with their respective banks, which took out certificates against the collateral and loaned the money for a fixed period at an agreed-upon rate. On the arrival of the gold the loans were repaid. The first issue of these Clearing House loan certificates was made June 17, when \$2,550,000 were issued. The largest amount issued was \$41,490,000, and the greatest outstanding at any time was \$38,280,000, Aug. 29. After Sept. 6 there came a gradual reduction to \$24,745,000 by Sept. 30, and cancellations grew rapid during October. The last certificate

was canceled Nov. 1. The Boston, Pittsburg, Philadelphia, and some Southern clearing houses also issued certificates in moderate amounts, but though the Chicago banks drew heavily upon New York, the Clearing House of that city persistently refused to issue certificates. The surplus reserve of the New York banks, Jan. 7, was \$8,942,450, and on the 28th it was \$23,143,300. Then there was a gradual fall to \$4,643,275, March 1, followed by a rise to \$25,439,925, May 27. From that point the fall was comparatively rapid to \$16,545,375 deficiency, Aug. 12, making a loss of \$41,985,300 in eleven weeks. By Sept. 9 the surplus was \$2,966,375, influenced by a return flow of currency from the interior and by imports of gold from Europe, and on Oct. 21 the surplus was \$42,640,775, a gain of \$59,186,150 in reserve compared with the low point on Aug. 12, a period of ten weeks, and this was mainly the result of receipts of currency from the interior and of large payments in gold by the Sub-Treasury of debit balances at the Clearing House, which together increased the cash holdings of the banks by \$71,557,000, while the deposits were augmented during this period only \$49,465,400, but loans were reduced from \$411,795,700, Aug. 12, to \$392,145,600, Sept. 23, and it was not until the retirement of loan certificates became rapid that loans were increased. The surplus reserve of the banks was steadily augmented during the last quarter of the year, and at the close it was \$80,815,150.

In January money on call opened at 7 per cent., gradually falling to 2 by the 21st, and it closed at 2½. Time money was in fair demand at 5 per cent. early in the month, but it was freely offered at 4 for thirty to sixty days by the 15th. Indorsed commercial paper ruled at 5½ to 5¾ per cent. at the beginning and at 4¾ to 5 at the end of January. Early in February the New York and Boston banks made liberal exchanges of gold at the sub-treasuries in those cities for legal-tender notes, the object being to enable the Treasury to meet the drain of gold to Europe without encroaching upon the \$100,000,000 of reserve, and about \$8,000,000 gold was turned over to the Treasury by the New York banks alone. Money on call at the Stock Exchange loaned at 2 per cent. early in the month, irregularly advancing to 12 by the 20th in consequence of apprehensions of trouble arising from the refusal of the Treasury Department to issue bonds with which to procure gold for the reserve fund, but by the end of the month the rate fell to 3. Time money on stock collateral advanced from 3½ to 4 per cent. for thirty to sixty days to 6 for all dates by the close, and lenders discriminated against industrial securities. The city banks were out of the market for commercial paper during nearly the entire month, and rates were 5 to 5½ per cent. for indorsed names. In March money on call was active, loaning at 12 per cent. on the 3d and at 60 on the 13th, in consequence of a demand for currency from the interior banks, who were fortifying themselves against a possible crisis. Then came a supply from the proceeds of exchange loan bills, and a return of some money from the West and from parties who had locked it up for speculative purposes, and on the 21st loans were made as low as 1½ per cent. There was a more confident feeling resulting

from an advance in the Treasury net gold from \$100,982,410 on the 9th to \$107,109,963 by the 20th. On the 30th there was a rise in call money to 25 per cent., due to calling of loans preparatory to the April settlements. After the middle of the month time loans were 6 per cent. for all dates, and indorsed commercial paper was nominally 6 per cent., with little doing. There was a very close approach to a currency crisis in April. Gold moved to Europe in moderately large amounts, reducing the net gold in the Treasury, and on the 17th it was announced that this balance was \$100,040,000. On the afternoon of that day there was a rumor that the Secretary of the Treasury had decided to regard the reserve of \$100,000,000 as exclusively for the redemption of legal tenders, and that when this reserve was encroached upon the option under the law of July 14, 1890, of paying silver for Treasury notes issued by virtue of that act, would be exercised. The Secretary had on the 15th directed the suspension of the issue of gold certificates, and foreign bankers who were under engagement to ship gold were apprehensive that when they wanted the metal it would be refused unless they presented gold notes or legal tenders. Exchange at once advanced to above the normal gold-exporting point, and bankers arranged to ship gold on the 24th and 25th, and Canadian bankers began to withdraw their balances. All the markets were excited until, on presentation by a foreign banker of Treasury notes of 1890 and his receipt of gold therefor, it was shown that there had been no change in the department's policy, and it was asserted that no change would be made. This was confirmed on the 24th by a statement by the President that the parity between gold and silver obligations would be maintained as contemplated by the act of July 14, 1890. The excitement then subsided, and confidence was fully restored on the following day. The rate for money on call was easy, at an average of 4 per cent. in April until the 21st, when there was an advance to 15 because of withdrawals of gold for export, but it fell to 5 on the 22d, reacting to 12 on the 24th, and closing at 3. Quotations for time loans were 5½ to 6 per cent. for all dates, and commercial paper was nominally 6 per cent., and there was little disposition to buy, Eastern banks being affected by failures in Minnesota and at Nashville. Early in May money on call was active, and on the 4th it was bid up to 20 per cent., falling immediately to 6. On the 5th there was an advance to 40, the movement being affected by the disturbed condition of the stock market, due to shifting of loans and discrimination against certain collateral. Toward the middle of the month call money grew easier, because of a lighter demand, resulting from the large short interest in stocks and liquidations by commission houses, and the rate fell to 1 per cent. on the 11th. There was no special feature in this branch of the market for the remainder of the month, although failures of banks and mercantile houses throughout the country were frequent and important. Time contracts on stock collateral were in good demand at 6 per cent., and in many cases repayment in gold was stipulated. The business in commercial paper was almost stagnant, and quotations were 6 to 7



per cent. for the best double-named paper. The supply was large, and in some cases mercantile borrowers found difficulty in obtaining accommodation at their banks. The failures throughout the country made buyers of paper very cautious, and the banks, while disposed to extend all possible accommodation, were forced to pursue a very conservative course. The demands upon the banks of this city from their correspondents in the interior for rediscounts was quite noticeable at the end of May, and it grew urgent early in June, resulting in a material reduction in the bank reserves. Consequently accommodations to the regular customers of the institutions had to be restricted, commercial paper ruled at high rates, and there was more or less distress among merchants. Bank and mercantile failures throughout the country grew more numerous, and the stringency in money was felt in every city in the country, some banks hoarding their funds, capitalists refusing to lend, and general distrust prevailing. The New York, Boston, Baltimore, Philadelphia, and New Orleans clearing houses issued loan certificates for the purpose of relieving the stringency, but this action only partially restored confidence among the depositors of the banks in those cities. The rate for money on call at the New York Stock Exchange at the beginning of the month was from 2 to 3 per cent. On the 9th there was an advance to 12, in consequence of large shipments of currency to the West, and on the 15th the rate moved up to 25 per cent. Then came a fall to 5, and the market was only moderately active until the 27th, when money loaned at 72 per cent., because of the panic and general demoralization on the news of the action of the Indian Government in closing the mints of India to the public coinage of silver. Early in the month very choice time loans on stock collateral were made at  $4\frac{1}{2}$  to 5 per cent., but soon after 6 per cent. was demanded for all dates on the best security. The business in commercial paper was almost stagnant, and the few transactions made were on the basis of 7 per cent. for the best double names. Money on call loaned at 25 and at 3 per cent. during the first week of July, averaging about 9; in the second week the range was from 20 to 3, averaging 6; in the third week loans were made at 7 and at 1; and in the last week at 72 and 1, the high rate then being due to the urgent demand for currency from Western cities, and particularly Chicago, where the rate of exchange on New York was as low as \$10 per \$1,000 discount. The drain of currency was caused by the general closing of mines in the silver-producing States, bringing about great depression in that section of the country, and failures of banks in Colorado, Idaho, and elsewhere in the West because of inability to realize upon ample assets. A material reduction in New York bank reserves created alarm throughout the country, balances belonging to interior banks were called home, money was hoarded, and confidence was completely unsettled. After the middle of the month money grew easier on call, chiefly because many lenders, who would under other circumstances have employed it on time, were unwilling to place it for fixed periods, and they offered it in the call-loan branch of the

market. The demand for time loans was urgent at  $\frac{1}{4}$  of 1 per cent. commission and interest for thirty days, and  $\frac{1}{2}$  of 1 per cent. and interest for sixty days on undoubted collateral, and some merchants, who could not sell their paper at any rate, negotiated time loans at these high figures, for the purpose of obtaining funds necessary for their business. A few private lenders bought commercial paper at from 8 to 15 per cent. for the best names. On the 31st of July the savings banks of this city gave notice that they would require from thirty to sixty days' notice from depositors intending to withdraw their deposits. This caused a demand for currency of all kinds, and as soon as it commanded a premium it was hoarded to a large extent. Banks had difficulty in obtaining currency for pay rolls, some being obliged to buy it from brokers for their customers; in a few cases institutions refused payment of checks where there was good evidence that the currency was wanted for hoarding or sale; bank customers were requested to draw their checks payable through the Clearing House; the demand for notes was urgent in all the principal cities, and the currency famine extended to gold. Brokers paid as high as 5 per cent. for paper currency, and from 1 to 2 per cent. for either silver dollars or gold. The foreign bankers took advantage of this premium upon gold to import the metal from Europe and Canada; the Treasury Department brought \$7,000,000 of gold coin by express from California, in order to supply the demand at this center, the Sub-Treasury being entirely drained of notes, and the currency famine continued until toward the end of the month, when some relief was afforded by the arrivals of gold from Europe. Bank failures, suspensions of mercantile houses, and closing of cotton, iron, and other mills were of daily occurrence. Early in the month the Chicago money market was disturbed by the collapse of the pork and lard deals, and by the sharp fall in wheat. The suspensions of national banks reported by the Comptroller of the Currency for the year to Aug. 28 numbered 155, and of State and private banks 560. Although money on call was in fairly good supply, with loans at 10 and at 2 per cent., averaging about 5, at no time could contracts for money for fixed periods be negotiated at less than 6 per cent., and a commission of 1 per cent. for the shortest dates, and 3 per cent. commission and interest was demanded for four months. Commercial paper could not be sold except at from 12 to 18 per cent. for the best names. The action of the House of Representatives on the 28th in passing the Wilson bill for the repeal of the silver-purchase law, by a vote of 239 to 110, had a marked influence upon the situation in September. Money on call loaned at 7 and at 2 per cent. during the month. Time loans were firm at  $\frac{1}{4}$  to  $\frac{1}{2}$  of 1 per cent. commission and interest until after the middle of the month, when they were freely offered at 5 to 6 per cent., although prime collateral was required. Commercial paper was 8 to 12 per cent. for double names until the 15th, when the rate fell to 7 and 8 per cent. After the House of Representatives passed the bill for the repeal of the silver-purchase law the measure was sent to the Senate for concurrence, but the Finance Committee of that body

had already formulated a new bill having the same object, and in the last week of August debate upon this measure began. The outlook for its passage was encouraging until Sept. 20, when it became evident that a few Senators, notably those from silver-producing States and from Kansas, the Dakotas, and Nebraska, were determined to obstruct the progress of the repeal measure, and it was feared that it might be defeated. This caused an advance in exchange, a policy of extreme conservatism by bank officials, a depressed feeling among manufacturers and merchants, and a general disposition to wait for the action of the Senate; but the month passed without much progress being made, although at the end of September it was hoped that the advocates of repeal would soon be able to force a vote upon the bill. The debate on the measure was continued almost without interruption throughout October, with a resort by Senators from the silver States to filibustering after the 10th, until the 21st, when an agreement for a compromise was made, but this was unsatisfactory to the Administration and it was abandoned. Efforts for unconditional repeal were renewed, and on the 28th voting on the amendments began. The repeal bill was passed Oct. 30 by the Senate and Nov. 1 by the House, and it became a law the same evening. Money on call was easy at 1 to 3 per cent. throughout October. Time loans were in abundant supply after the middle of the month at 4½ per cent. for thirty days on good mixed collateral, but the demand was light. Commercial paper of really first class was scarce, but the demand was good, and gradually rates of indorsed bills fell to 5½ per cent. by the close of the month. Early in November the supply of money was so abundant that loans on call were made at an average of 1½ per cent., but after the first week transactions were generally at 1 to 1½ per cent. Time contracts were eagerly sought, but commission houses were indisposed to borrow, and rates fell from 3

to 3½ per cent. for thirty days; 4 to 4½ for sixty days to four months; and 4½ to 5½ for five to six months; to 2 per cent. for thirty to sixty days; 2½ to 3 for ninety days to four months; and 3½ to 4 for five to six months by the end of November. Commercial paper of first class was difficult to obtain, and the demand for good names was urgent, resulting in a fall in rates to 3½ to 4 per cent. for indorsed names against 5 to 5½ early in the month. The surplus reserve of the banks was unprecedentedly large, amounting to \$70,835,175 by the 25th; the New York institutions were overburdened with deposits of interior banks upon which they were required to pay interest; merchants sought to employ their idle capital in loans upon stock collateral and in purchases of long sterling for investment, and many importers anticipated settlements of obligations due abroad at the end of the year. The gold in the banks increased beyond the capacity of the vaults, and a special place of deposit was secured, and Clearing House gold certificates were issued. In December money on call ranged between 1½ and ½ of 1 per cent., the lowest since 1884, when transactions were recorded at ½ of 1 per cent. Time money was in abundant supply, with an insignificant demand, by reason of the limited requirements of the commission houses, whose wants were satisfied in the call-loan branch of the market, and quotations were 2 per cent. for thirty to sixty days; 2½ for ninety days to 4 months, and 3½ to 4 for five to six months. There was a good inquiry for the best grades of commercial paper, but offerings were small, and prime short indorsed bills receivable were quoted at 3½ to 3¾ per cent. The condition of the New York Clearing House banks, the rates of interest or premium for money, exchange, and silver, and the prices of United States bonds, on Jan. 6, 1894, compared with the same items for the preceding two years, are as follow:

ITEMS.	1892.	1893.	1894.
NEW YORK CITY BANKS:			
Loans and discounts.....	\$438,616,400	\$441,283,700	\$418,807,600
Specie.....	95,972,200	76,626,600	111,073,400
Circulation.....	5,537,400	5,585,000	13,044,400
Net deposits.....	466,218,200	455,367,800	518,524,600
Legal tenders.....	37,814,400	46,157,800	102,354,400
Required reserve.....	116,554,550	113,841,950	129,681,150
Reserve held.....	132,786,600	122,754,400	213,427,800
Surplus reserve.....	\$17,232,050	\$8,942,450	\$83,796,650
MONEY, EXCHANGE, SILVER:			
Call loans.....	3	5 to 7	1 to 1½
Prime paper, 60 days.....	4½ to 5½	6	3½ to 3¾
Silver in London, per ounce.....	42½ d.	38½ d.	31½ d.
Prime sterling bills, 60 days.....	\$4 82½	\$4 87½ to \$4 87½	\$4 84 to \$4 85
UNITED STATES BONDS:			
Currency 6s, 1893.....	115½	112½ bid	110 bid
4s coupon, 1891.....	100*	100*	95 bid*
4s coupon, 1907.....	116½	113½	112 bid

\* Extended 2 per cents.

The following is the New York Clearing House statement of totals at the beginning of each quarter of 1893 and at the end of the year:

DATE.	Loans.	Specie.	Circulation.	Deposits.	Legal tenders.
January 7.....	\$441,283,700	\$76,626,600	\$5,585,000	\$455,367,800	\$46,157,800
April 1.....	438,524,500	71,622,900	5,624,200	439,330,100	43,872,700
July 1.....	413,650,700	62,983,300	5,618,400	397,979,100	37,758,200
October 7.....	392,494,400	80,786,200	14,395,600	390,980,400	41,079,400
December 3d.....	417,606,900	106,316,400	13,111,900	506,437,800	101,108,200



**Railroads.**—Early in the year the principal railroads of the country, particularly those centering at Chicago, completed their preparations for the World's Fair passenger traffic and agreed upon popular rates which, it was hoped, would prove remunerative. They were subsequently threatened with strikes of employees, but demands for an increase of wages were resisted, and managers were encouraged by the legal proceedings taken at the instance of the Toledo, Ann Arbor, and North Michigan officials, who successfully appealed to the United States courts for protection against strikers on that road who refused to handle cars of connecting lines. Freight traffic was disappointingly small during the first quarter of the year, and net earnings

and Northern Pacific, the Union Pacific, the Detroit, Bay City and Alpena, and the Fort Worth and Denver, in October; for the Toledo and Ohio Central extension and the Lake Erie, Alliance and Southern, in November; and for the Atchison, Topcka and Santa Fé, the New York and New England, the Union Pacific, Denver and Gulf, the Utah Central, and the Chcsapeake and Ohio Southwestern, in December. The mileage of roads in receivers' hands at the end of the year was 25,375, nearly one seventh of all the lines in the United States. The indebtedness of these roads was \$1,212,217,033, and the capital, \$674,412,487.

The following shows gross and net earnings of the principal trunk lines:

ROADS.	1887-'88.	1888-'89.	1889-'90.	1890-'91.	1891-'92.	1892-'93.
PENNSYLVANIA:						
Gross earnings.....	\$58,172,077	\$61,514,445	\$66,202,260	\$67,426,841	\$68,841,845	\$66,375,224
Net earnings.....	18,540,925	20,417,640	21,221,706	21,479,396	20,022,483	19,379,206
NEW YORK CENTRAL:						
Gross earnings.....	36,132,920	35,696,236	37,008,403	37,902,114	45,478,625	46,936,694
Net earnings.....	8,372,299	9,422,858	12,516,274	12,581,262	14,339,512	14,644,817
ERIE:						
Gross earnings.....	24,582,319	24,595,273	26,454,834	27,503,633	28,633,740	27,340,626
Net earnings.....	6,829,350	6,740,848	6,948,882	7,259,698	7,163,957	7,192,848
BALTIMORE AND OHIO:						
Gross earnings.....	20,353,492	21,303,002	24,412,096	24,530,395	25,877,358	26,214,507
Net earnings.....	6,152,930	6,492,158	7,445,226	7,452,162	7,444,402	7,172,825

decreased because of the low rates and augmented expenses. The World's Fair passenger business did not reach expectations until after midsummer, when the volume became large, but rates were so low as to be only fairly remunerative, and about the only road which had a profitable season on this account was the Illinois Central, which enjoyed extraordinary facilities for handling the traffic at Chicago. The depression in business resulting from the panic severely affected railroad lines in all parts of the country during the summer. After the World's Fair closed, Oct. 30, Western roads showed marked decreases in earnings, and the business of the year for nearly all of them was very unsatisfactory. At the East about the only interest which was fairly prosperous was that of anthracite coal, and the coal-carrying companies were not materially affected by the business depression. A strike on the Lehigh Valley, in November, had a temporarily paralyzing effect, compelling the passing of the dividend. The railroad suspensions of the year were numerous and important, beginning with the Reading, Feb. 20. This was followed by the appointment of receivers for the Western New York and Pennsylvania and the Toledo, Ann Arbor and North Michigan, in April; for the Toledo, St. Louis and Kansas City, May 19; for the Little Rock and Memphis, the Manitoba and Northwestern, the St. Louis, Chicago and St. Paul, and the Seattle, Lake Shore and Eastern, in June; for the Pittsburg, Akron and Western, the Northern Pacific, the Philadelphia and Reading, and New England, in August; for the Evansville and Terre Haute, the Cleveland, Canton and Southern, the Chicago, Peoria and St. Louis, and the Wisconsin Central, in September; for the Union Pacific, the branch lines of the Northern Pacific, the Kentucky and Indiana, the Sioux City and Northern, the Chicago

**FINE ARTS IN 1892-'93.** Under this title are treated the principal art events of the two years ending with December, 1893, including especially the great exhibitions in Europe and the United States, sales and acquisitions of works of art, and erection of public statues and monuments.

**Paris: Salon of the Champs-Élysées, 1892.**—The exhibition of the Société des Artistes Français, in the Palais de l'Industrie (May 1 to June 30), comprised 3,999 numbers, classified as follow: Paintings, 1,718; cartoons, water colors, pastels, miniatures, enamels, porcelain pictures, etc., 482; sculptures, 999; engraving on medals and precious stones, 79; architecture, 212; engraving and lithography, 509.

Awards in 1892—Section of painting: Medal of honor, Albert Maignan, for his "Carpeaux." First-class medals: Eugène Auguste François Deully, Albert Lynch. Second-class medals: Frank Bramley, Pierre Vauthier, Gaylord S. Truesdel, Édouard Vimont, Frederic Humbert, Théophile Decanis, Émile Merlot, Joseph Bouchor, José Salgado, Clement Quinton, Albert Rigolot, Jean Jacques Scherrer. Third-class medals: Henri Foreau, Paul Thomas, John Henry Lorimer, Antoine Grivolas, Albert Bréauté, Maxime Dastugue, Charles Amable Lenoir, Mme. Hortense Richard, Auguste Zwiller, Alfred Rouby, Charles Lebayle, Léon Gagneau, Gustaf Théodor Wallen, Étienne Joannon-Navier. Henri Paul Mottez, Marius Perret, Louis Galliac, George William Joy, Mme. Vilma Parlaghy, Émile Charles-Bitte, Constantin Le Roux, Mlle. Joséphine Houssay, Antoine Calbet, Octave Guillonnet, Léon Brunin, Charles Kuwasseg, J. Ernest Breun, Francis Mathias.

Section of sculpture: No medal of honor awarded. First-class medals: Théophile Barrau, Félix Soulès, Honoré Icard. Second-class

medals: Hippolyte Peyrol, Henry Vidal, Jacques Perrin, Jean Ossaye Mombur, Joseph Vacslav Myslbek, Frederic Charles Vernon. Third-class medals: Eugène Thivier, Auguste Seysses, Henri Greber, Paul Capellaro, Bénédict Rougelet, Ferdinand Faivre, Édouard Drouot, Louis Convers, Paul Loisseau-Rousseau, Daniel Chester French.

Section of engraving: Medal of honor, Paul Maurou. First-class medal: Auguste Boulard. Second-class medal: Jean Patricot, Léon Louis Chapon, Gustave Fuchs, Albert Ardail, Hippolyte Fauchou. Third-class medals: Émile Jean Sulpis, Mlle. Juliette Leluc, Jules Payrau, Henri Dillon, Abel Mignon, Léon Perrichon  *fils*, Maurice Deville.

Section of architecture: Medal of honor, Louis Cordonnier. First-class medals: Charles Nicolas Normand, Hector Espony. Second-class medals: Georges Chédanne, Pierre Lafargue, Paul Hanuotin, Marc Gaïda. Third-class medals: Albert Tissandier, Charles Nizet, Lucien Tropey-Bailly, Hippolyte Boussac, Henri Loyan, Nicolas Escalier.

One of the pictures of the Salon of 1892 most talked about was "Les Conquérants" of Pierre Fritel, an immense canvas, occupying the place held in 1891 by Rochegrosse's "Morte de Babylon." Through the Valley of the Shadow of Death, whose limits are obscured in darkness, advance, hollow-eyed and remorseful, the conquerors of all ages, marching in close ranks between a double row of corpses, stripped and rigid, lying packed close together with their feet toward the procession. The *cortège* is led by Julius Cæsar, mounted and laurel-crowned, with Rameses on his right and Alexander on his left, both in chariots. Behind ride Napoleon, Charlemagne, Attila, Tamerlane, Hannibal, etc., each conqueror in the costume of his time, the long line stretching backward amid a forest of military weapons and standards until lost in the obscurity.

Among the military pictures Detaille's "La Sortie de la Garnison de Huningue, 20 Août, 1815," is remarkable. Gen. Barbanègre, who had defended the place with 200 men against an Austrian army of 30,000 under the Archduke John, is represented as marching out with the honors of war, at the head of a handful of tattered soldiers, who defile through a double hedge of applauding Austrians. In the background are the citadel and the ruined ramparts.

Another large canvas is Albert Maignan's "Carpeaux," which shows the great sculptor seated dying in his studio, surrounded by the finest of his creations, who have left the marble for the semblance of life to console his last moments. The figures from his principal works—the fountain of the Observatoire, the "Danse" of the opera house, the "Flore" of the Tuileries—are all around him, one of the nymphs bending over to kiss him farewell.

Henri Martin's "L'Homme entre le Vice et la Vertu" represents a man, apparently in a state of ecstasy, holding out his hand to a virgin veiled in white who glides before him robed in light, and turning his back upon a troupe of girls attired so as to exhibit their forms, who represent the Vices.

The central incident of the immense picture "Entrée de Louis XI à Paris, 30 Août, 1461," by

Francis Tattegrain, is best described by the quotation on the frame from the "Chroniques de Jehan de Troyes et de du Clerc": "And at this point the king stopped to gaze at the fountain of Ponceau Saint-Denis, out of which rose three fair women representing naked sirens," and singing to him motets and pastorals." Louis, seated upon his horse under a canopy borne by four men, is listening to the sirens, singing on the right, while the great crowd of spectators is pushed back by men at arms. The windows and the roofs are filled with people looking down on the pageant.

Among the noteworthy portraits of the year are the "Renan" of Léon Bonnat, the "Leo XIII" of Théobald Chartran, and the "Gladstone" of John McLure Hamilton.

Most remarkable among the sculptures is Gérôme's life-size "Bellone," the limbs of which are of solid ivory, and the torso, head, and draperies of colored gilt and jeweled bronze. The "Goddess of War" stands tiptoe upon the world, with glaring eyes and wide-open mouth, as if uttering a terrible cry, waving aloft her falchion and buckler. Circled about her feet is a hideous hooded snake, with its mantle expanded, rising and hissing. The marble groups "Matho et Salammbô," by Théophile Barrau, "Les Droits de l'Homme," by Honoré Icard, and "Enlèvement d'Iphigénie," by Félix Soullès, were awarded first-class medals.

**Paris: Salon of the Champ de Mars, 1892.**—The third annual exhibition of the Société Nationale des Beaux Arts (May 10 to July 10), comprised 1,770 numbers, of which 1,086 were paintings.

Puvis de Chavannes exhibited a great decorative canvas, "L'Hiver," a pendant to the "L'Été" of last year, now in the Hôtel de Ville. Carolus-Duran was well represented by several characteristic portraits, and Cazin by eight landscapes and by two decorative panels for the apartment of the rector of the new Sorbonne. Jean Béraud's principal contribution, "La Déescente de Croix," is one of the most remarkable of his remarkable productions. The body of the Saviour, just lifted from the cross, is received into the winding sheet by a group of persons in the costume of Parisians of 1892. Hard by are a workman in a blue blouse, a few artisans, and some street boys, while at the left another workman shakes his fist at the city below. Of American artists, Whistler was represented by six works—nocturnes and harmonies; Alexander Harrison, by his "Baigneuses," nude women and girls disporting on the borders of the sea, and four other pictures; and J. S. Sargent by "Étude de Femme" and "Carmencita," the latter exhibited in 1891 at the Royal Academy, and now in the Luxembourg.

**London: Royal Academy, 1892.**—The twenty-third winter exhibition of works by the old masters represented chiefly the English, Italian, Flemish, Dutch, and German schools. Among the principal attractions were the Italian pictures from the Dudley Gallery, sold later in the season.

The one hundred and twenty-fourth (1892) annual exhibition was up to the average in merit, though some notable names were unrepresented. Sir Frederick Leighton's principal



contributions were: "And the Sea gave up its Dead" and "The Garden of the Hesperides." The former picture, which has been acquired by Henry Tate for the new Gallery of British Art, represents on a large upright canvas part of the drama of the Resurrection, corpses emerging from the waves. The latter shows the three fair daughters of Hesperus, attired in semidiaphanous robes of rose, amber, and green respectively, reclining at the foot of the Hesperian tree, whose branches are laden with gold. The dragon guard has wound its length around the trunk of the tree, under the boughs of which is seen the garden—a beautiful Greek landscape.

Orchardson's "St. Helena, 1816; Napoleon dictating to Count Las Casas the Account of his Campaigns" was exhibited in the same gallery. The Emperor is standing with feet apart, and the floor is strewn with maps and plans.

Alma-Tadema's "The Kiss" represents a terrace of white marble, approached from the side of a bay or lake by a flight of steps, and ornamented on its topmost balustrade by a splendid bronze tripod. In the waves and on the beach are seen girls and children bathers, while up and down the steps move other women and children. On the terrace a mother stoops to kiss a little girl fresh from the bath, accompanied by the balneatrix.

Sir John Millais's "Blow, blow, thou Winter Wind!" depicts a winter landscape with a road passing along a sloping bank flanked by trees. A woman in the foreground huddling a baby in her shawl has evidently been deserted by the man moving away in the mid-distance—more unkind than the winter wind itself.

In Mr. Watts's "She shall be called Woman" Mother Eve is depicted as a colossal nude figure, a type of eternal spring, standing erect, with both hands clenched, looking up at the firmament in a flood of golden light.

Mr. Hook exhibited two Cornish coast scenes, "Nereids" and "The Sea Mews' Nest." Henry Moore also sent two sea pieces, "Perfect Weather for a Cruise" and "Machrihanish Bay, Kantyre." Luke Fildes contributed only portraits. George Hitchcock's "The Scarecrow" represents a Dutch peasant girl sitting motionless in a field blazing with scarlet poppies, duly armed to frighten away the birds.

**London: New Gallery.**—Among the principal pictures at the summer exhibition was Mr. Watts's "Sic Transit," a large, ambitious work, representing in life-size the whole-length shrouded figure of a man recumbent on a bier raised on an altar tomb of stone, and accompanied by insignia of earthly power, pomp, and pleasure, grouped at the foot. Another picture which attracted great attention was the artist's "Portrait of Walter Crane."

Sir John Millais contributed "Sweet Emma Moreland," a vigorous picture of a Scottish beauty, with ruddy complexion and auburn hair, in black hat and skirt and a blue jacket, with a basket of flowers on one arm.

"A Silent Greeting," by Alma-Tadema, represents a Roman lover putting flowers in the lap of his mistress, who has fallen asleep on a marble bench, part of a terrace lying in the shadow of an Italian sky. Another picture, called "Dreaming," comprises the figure of a Roman

leaning on a marble parapet looking down upon gardens and a country landscape. The artist sent also a portrait of Paderewski, full face, in an atmosphere illuminated by bright sunlight.

**London: Miscellaneous.**—The year 1892 was remarkable for its picture sales and for the prices obtained. In London alone 55 canvases were sold at prices ranging from 1,400 guineas and upward, against 37 in 1891, and 38 in 1890.

At a sale of pictures belonging to the Earl of Dunmore, Mr. Samson Wertheimer, and others, March 19, Rembrandt's "Hendrikje Stoffels" brought £5,250. Among others were: A Watteau, "L'Accord parfait," £2,205 (James sale, 1891, £3,675); Sir J. Reynolds, "Lady Sondes," £4,305; Romney, "Lady Hamilton as a Welsh Girl," £2,205; "Mrs. W. Pitt and Son," £1,155; "Lady Augusta Murray," £3,990.

The collection of the late David Price was sold April 2. Among the best prices obtained were: J. M. W. Turner, "Modern Italy," 1838, £5,460 (Novar sale, 1867, £3,465; Fallows sale, 1868, £2,961; Novar sale, 1878, £5,260); Rosa Bonheur, "Landais Peasants returning Home," 1858, £1,627; "The Alarm," 1866, £1,102; "Changing Pastures," £3,150; "Cattle in the Highlands," £1,785; Meissonier, "Regnard in his Studio," £1,890; J. Linnell, Sr., "Welsh Drovers crossing the Common," 1836, £1,050; "The Haystack," 1875, £630; "Opening the Gate," 1849, £798; "The Timber Wagon, 1852, £3,255; Edwin Long, "Diana or Christ" (replica), £2,625; Sir J. Millais, "Sound of Many Waters," £3,045.

The pictures and drawings of the Messrs. Murraria, sold April 30 and May 14, brought good prices. Among the highest were: David Cox, "Vale of Clwyd," £4,725; "Reapers returning, Home," £1,186; "Going to the Hayfield" (drawing), £1,102; "Barden Tower" (drawing), £1,155; Copley Fielding, "Scottish Landscape" (drawing), 1849, £1,260; Alma-Tadema, "Un Amateur Romain," £1,365; "Etruscan Vase Painters," £477; "Antisteus Labeon," £945; "Un Jongleur," £850; "Patron of Sculpture," £1,470; "Vespasian," £514.

The collection of the late Lord Cheylesmore (H. W. Eaton, M. P.) were sold May 7. Among the most noted works were: Landseer, "Monarch of the Glen," £7,245 (Londesborough sale, 1884, £6,500); "Lady Godiva's Prayer," £945 (Landseer sale, 1874, £3,400); "Lion and Lamb," £997; "The Pretty Horsebreaker," £1,205; "Flood in the Highlands," £1,680; "W. Collins, "Cromer Sands," £2,205 (Gillott sale, 1872, £3,990); T. Faed, "Sunday in the Backwoods," £1,785; P. Delaroche, "Execution of Lady Jane Grey," £1,575.

The collection of the late Earl of Egremont, sold May 21, realized upward of £11,400. Among the pictures were: T. Gainsborough, "Portrait of Charles Frederick Abel," £1,470; Signor Raphael Franco, £882; "Youth in Blue," akin to Duke of Westminster's "Blue Boy," £1,302; Sir J. Reynolds, "Artist's Portrait," 1778, £294; "Mrs. Blake," 1764, £1,050; "Miss Francis Harford," £1,260.

The sale of the collection of the late Frederick R. Leylands, of Woolton Hall, Liverpool, May 28, aroused great interest on account of the excellent examples of Gabriel Rossetti, Burne-

Jones, Whistler, and other modern masters contained in it. It was for Mr. Leylands that Whistler painted the famous Peacock Room. Among the pictures disposed of were: E. Burne-Jones, "Mirror of Venus," £3,570; "Merlin and Vivien," £3,780; "The Seasons" (four water colors), £1,207; "Night and Morning" (pair water colors), £1,417; "Phyllis and Demophoon" (water color), £850; "The Wine of Circe" (water color), £1,417; "Cupid and Psyche," £945; D. G. Rossetti, "Proserpina," £567; "Mnemosyne," £325; "Veronica Veronese," 1872, £1,050; "Sea Spell," £441; "La Pia de Tolomei," £315; "Dis Manibus," £273; "The Salutation of Beatrice," £567; "The Blessed Damozel," £1,029; "Lady Lillith," £525; "Monna Rosa," £462; "The Loving Cup," £861; Sir J. Millais, "Eve of St. Agnes," £2,205; J. M. Whistler, "La Princesse du Pays de Porcelaine," £441. Among works by old masters were: Rembrandt, "Head of a Young Man," £304; Giorgione, "Holy Family," £840; Botticelli, "Virgin and Child," £1,312; "Four Illustrations to the Decameron," £1,365; F. Lippi, "Adoration of Magi," £735.

The collection of the late Earl of Dudley, sold in London, June 28, consisting of 91 canvases, brought a total sum of £101,000. Among the highest prices obtained were the following: Hobema, "View in Holland," £10,800; "Wooded River Scene," £1,995; "Landscape," £2,415; Raphael, "The Crucifixion" (Fesch collection), £11,130; "La Vierge à la Légende," £3,102; C. Crivelli, "Virgin and Child with Saints," £7,350; F. Mieris, "The Enamored Cavalier," £3,570 (Bredel sale, £4,315; Levy sale, 1876, £3,675); A. Ostade, "Interior of a Kitchen," £2,625 (Schneider sale, 1876, £4,120); "An Interior," £1,470; J. Ostade, "Scheveningen Beach," £1,050; Rembrandt, "St. John preaching in the Wilderness," £2,625; J. Ruysdael, "The Ruin," £1,470 (Bredel sale, £2,310); P. Wouwermans, "Halt of a Sporting Party," £3,675; Early Netherland School, "Shutter of a Triptych," £3,570; A. Cuyp, "Grand Landscape," £1,890; Rubens, "Juno transferring the Eyes of Argus to the Tail of the Peacock," £1,575; "Woody River Scene," £593; Murillo, "La Vieja," £1,890; "St. Anthony of Padua and Infant Christ," £1,215; G. Bellini, "Madonna and Child," £1,155; Bonifacio, "Madonna with Saints," £1,018; Botticelli, "The Nativity," £1,215; Canaletto, "View in Venice with the Colleoni Monument," £2,047; "View on Grand Canal," £2,205; L. di Credi, "Virgin and Child with St. John," £2,520; F. Lippi, "La Simonetta," £1,680; P. Perugino, "Christ and Woman of Samaria," £1,050; Titian, "Mother and Child," £2,520; A. del Sarto, "Pieta," £1,092.

**Paris: Salon of the Champs Élysées, 1893.**—The exhibition comprised 4,206 numbers, classified as follows: Paintings, 1,828; cartoons, water colors, pastels, miniatures, enamels, porcelain pictures, etc., 659; sculptures, 972; engraving on medals and precious stones, 83; architecture, 164; engraving and lithography, 466; objets d'art, 83.

Awards in 1893—Section of painting: Medal of honor, Ferdinand Roybet, for his "Charles le Téméraire à Nesles." First-class medals, none awarded. Second-class medals: Paul Sain, Casimir de Pochwalski, Maurice Orange, Tito Lessi,

Camille Dufour, Henri Danger, Gabriel Thurner, Raoul Arus, Paul Buffet, Paul Thomas, Antoine Calbet, Gustave Garaud, Albert Bréauté, Émile Noirot. Third-class medals: Lucien Simonnet, Albert Charpin, Daniel Léon Saubès, George Olivier Desvallières, Maurice Mitresey, Charles Jules Duvent, Pascal Blanchard, Henry Pinta, Paul Albert Laurens, Jean Enders, Édouard Pail, Albert Charles Wallet, Joaquin Sorolla-Bastida, Pierre de Bengy, Paul Jobert, Émile Maillard, François Morisset, Jules Georges Bondoux, Georges Washington, Fernand Le Quesne, Ernest Leménorel, Louis de Clermont, Charles Desmarquais, Mario Carl-Rosa, Julien Massé, Auguste Balouzet.

Section of sculpture: Medal of honor awarded to Félix Maurice Charpentier for his marble group, "Les Lutteurs." First-class medals awarded to Raoul François Larche, Jules Jacques Labatut, and Georges Tonnelier (engraving in medals). Second-class medals: Augustin Peenne, Eugène Jean Boverie, Paul Gasq, Georges Ernest Saulo, Henri Amédée Fouques, Louis Holweeq, Antonin Larroux, Henri Dubois (engraving in medals). Third-class medals: Emanuel Fontaine, Eugène Depléchin, Georges Bareau, Julien Caussé, Louis Durnbauer, Joseph Antoine Bernard, Henri Godet, Jean Balloni, Maurice Bouval, Armand Hildebrand (engraving in precious stones).

Section of engraving: Medal of honor awarded to Alphonse Louis Lamotte (burin). First-class medals: none awarded. Second-class medals: Étienne Corpet, Pierre Alphonse Audebert (lithography), Émile Louis Derbier, Frédéric Godefroy Vintraut, Léon Ruffe (wood). Third-class medals: Jules Leonard, Charles Richard, Étienne David (lithography), Joseph Gilardi (wood), Edmond Adolphe Rudaux, Georges Louis Pélicier (etching), Émile Buland, William Barbotin, Louis Isidore Journot (burin).

Section of architecture: Medal of honor awarded to Alphonse Defrasse for his plan entitled: "Restauration de l'enceinte sacrée d'Épidaure." First-class medal: Émile Camut. Second-class medals: Jules Godefroy, Édouard Bauhain, Antoine Nodet, Paul Normand, Prosper Bobin. Third-class medals: Auguste Rives, Pierre Joanny Bernard, Charles Édouard Naudin, Henri Petit, Paul Héneux, Gustave Majou, Louis Joseph Yperman.

Among the largest pictures of the year was Munkacsy's "Arpad," an immense work intended for the Palace of the Parliament at Budapest. The scene is at the foot of the Carpathians, where the great plain begins. Arpad, in Asiatic costume and surrounded by his chiefs and warriors, receives the representatives of the indigenous tribes, who bring him, in token of submission, water from the Danube, some hay, and a little of the earth henceforth to take the name of Hungary.

Another immense canvas is Ferdinand Roybet's "Charles le Téméraire à Nesles." Charles the Bold, angered at his defeat before Amiens, took Nesles, June 9, 1472, and gave the town and its inhabitants a prey to his soldiers. The scene is the church of Notre Dame, where the unfortunates who have taken refuge are given over to massacre.



Another large picture without a title, by Henri Camille Danger, illustrates the text of I John iii, 23, "And this is his commandment, that we should love one another." On a great plain, under a cloudy sky, glare the reflections of a fire, with the foreground strewn with naked and bleeding corpses, fragments of arms and standards, and ruins. In the midst, through the devastation, passes the pitiful Christ, veiling his eyes from the indications of human passion and hatred.

Among historical compositions Alma-Tadema's "Roses d'Héliogabale," previously exhibited in London, Georges Rochegrosse's "Pillage d'une Villa gallo-romaine par les Huns," Aimé Morot's "Retraite de St.-Jean d'Acre," and Cormon's "Grenadiers de la Garde à Essling" deserve mention.

Landscape art was well represented by Hubert Herkomer's "Notre Village," Émile Michel's "En Forêt," Alexandre Nozal's "Canal abandonné," and Fernand Quignon's "Les Sainfoins."

Noteworthy among many fine portraits are Léon Bonnat's "Portrait de Mme. B..." (his mother), Benjamin-Constant's "Lord Dufferin," and Marcel Baschet's "Francisque Sarcey."

In sculpture, the marble statue "Caton d'Utique," by Jules Labatut, and the marble group "Le Prairie et le Ruisseau," by Raoul Larche, were awarded first-class medals.

#### Paris: Salon of the Champ de Mars, 1893.

—The fourth annual exhibition of the Société Nationale des Beaux Arts comprised 1,897 numbers, classified as follow: Paintings, 1,093; designs, etc., 362; sculpture, 136; engraving, 113; objets d'art, 171; architecture, 22.

Noteworthy among the large canvases is Alfred Roll's immense picture "Le Centenaire," designed to perpetuate the ceremony commemorative of the centenary (May 4, 1889) of the meeting of the States-General at Versailles, on which the artist has labored the past three years. The President, M. Carnot, followed by the ministers, Gen. Saussier, and other officers, has stepped down from the tribune and is passing through the crowd, the ranks of the official procession being broken up. This picture is to occupy the place at Versailles left vacant by "Le Sacre" of David, removed to the Louvre.

Puvis de Chavannes's principal exhibit, "Homage de Victor Hugo à la Ville de Paris," is a drawing (in camafeu) of a ceiling intended for the principal staircase of the Hôtel de Ville.

Ary Renan's "Saint Brandan" shows the saint landing, on a beautiful morning, on a desert island, where the sea birds are astonished but not alarmed at their friendly visitor. The missionary holds in one hand a Bible and in the other the anchor of his boat, which he is evidently about to fasten in the grass.

Burne-Jones contributed three pictures, "Persée," "Les Profondeurs de la Mer," and the portrait of a little child; Alexander Harrison, "La Solitude," and 3 marines and 3 studies of the nude; and Julius Gari Melchers "Les Vèpres."

**Paris: Miscellaneous.**—The pictures in the Luxembourg have been rearranged, and many recent additions hung for the first time. Among the new ones are Meissonier's "L'Attente," Bas-

tien Lepage's "Les Foins," Detaille's "Reddition d'Huningue," Whistler's "Portrait of my Mother," Sargent's "Carmencita," Melure Hamilton's "Portrait of Gladstone," and three drawings by Burne-Jones.

An exhibition of the works of Meissonier (March 6 to April 3) in the Galerie Georges Petit, Rue de Sèze, comprised more than 1,400 numbers, including paintings, water colors, studies, designs, and wax models. The proceeds—50,000 francs—were devoted to several charitable institutions. A second Meissonier exhibition, organized by Madame Meissonier at the École des Beaux-Arts (March 15 to April 25) comprised principally the works of the last twenty years of the master's life.

M. Chauchard, of Paris, whose gallery includes the "Angelus" of J. F. Millet, and many fine Troyons, Corots, Duprés, and other painters of the Barbizon school, has bought nearly the entire Van Praet collection of Brussels. Among the pictures acquired is Millet's "La Bergère," for which he paid 700,000 francs. This work, which ranks with the "Angelus," was exhibited by Millet in the Salon of 1865, and sold to John Wilson, another Belgian collector, for 2,000 francs. Wilson exchanged it for the "Angelus," which he sold in 1881, and now the two have found a common home.

The sale of the studio effects of Meissonier, in Paris, in May, realized a total of 2,216,600 francs; the first part, comprising paintings and painted studies (May 12, 13, and 15), producing 1,741,000 francs, and the second, water colors and designs (May 18, 19, and 20), 475,600 francs. The principal picture, "Le Graveur à l'eau-forte," brought 272,100 francs from M. Bague, a Paris dealer. Among others were "Le Trompette de 1807," 17,500 francs; "Gentilhomme Louis XIII," 35,000; "Portrait de Charles I," 16,000; "Dragon en vedette," 20,000; "Le Pont de Poissy," 20,000; "Le Maréchal Lannes," 50,000, Marseilles Museum; "Bessières," 50,000, Montpellier Museum; "Pasquale," 33,000; "L'Ordonnance," 31,000; "1806," 66,000; "Le Matin de Castiglione," 25,500; "Un Philosophe," 23,000; "Dragon en vedette," 36,000; "L'Attente," 17,000. Among the water colors, "Le Guide" brought 58,000 francs; "Dragon de l'Armée d'Espagne," 38,000; "Antibes," 14,000; "Dragon en vedette," 16,000; "Le Peintre," 14,000; "Un Soupçon," 13,000.

The Coquelin collection, sold in Paris, May 27, produced in the aggregate about 530,000 francs. Among the highest prices obtained were: Meissonier, "Gentilhomme Louis XIII," 56,000 francs; Daubigny, "Les Marais d'Optevoz," 38,200; Delacroix, "L'Education d'Achille," 37,500; Cazin, "Sur la Route," 32,000; "Les Meules," 26,500; "Crépuscule d'Été," 13,000; Troyon, "Un Bœuf," 19,500; J. F. Millet, "Le Seigneur" (pastel), 24,000; "Au Moulin" (pastel), 11,200; Alma-Tadema, "Farniente," 25,500; "L'Attente," 15,000; J. Duprez, "Le Ruisseau," 20,000.

**London: Royal Academy, 1893.**—The twenty-fourth winter exhibition was composed chiefly of portraits and figure pieces of the British school, pictures of the Low Countries, and Spanish and Italian art. In the water color and black-and-white rooms were comprehensive ex-

hibitions of the works of Samuel Palmer, Edward Calvert, and William Blake.

The one hundred and twenty-fifth summer exhibition, though scarcely up to the average in oils, was strong in water colors and in statuary. Sir Frederick Leighton was represented by several good works. "Corinna of Tanagra" is a half-length figure of the poetess, a noble brunette crowned with golden laurel, draped about bust and shoulders with amber red, resting, as if she had just stopped singing, with both hands upon the gilded lyre, which is the prize of victory. "Rizpah" is conceived in a different spirit. The mother, gaunt and pale, yet resolute, leans against the dead body of her son, which is covered with purple drapery, clutching a sickle as a weapon against the birds of prey. "Hit" represents a half-clad bowman of the cave period, seated on a rock near a cavern, with his son, a boy of twelve, whom he is instructing in shooting, standing at his knee.

Sir John Millais's "Girlhood of St. Theresa" tells a story connected with her childhood, how, when only seven years old, she set out with her little brother from Avila, in Spain, to go to the country of the Moors in hope of dying for the faith. But on the bridge over the Adaja the two were met by an uncle who brought them back to their mother, who had sent to seek them. The twain are depicted crossing the bridge, the early morning light upon the towers of Avila behind casting pearly shadows that harmonize with the black and crimson velvet of the children's costumes.

Alma-Tadema's "In my Studio" shows a portion of his own sumptuous working room, with a nymphlike damsel in purplish costume, standing beside the piano, enjoying the scent of a bunch of Maréchal Niel roses. This picture is a present to Sir Frederick Leighton. "Comparisons," another contribution, represents a Roman interior and two stately ladies seated. Both have been reading, but one has dropped her book and looks with interest over the shoulder of her companion, who reads a passage aloud.

Mr. Poynter, too, contributes a classic picture called "Chloe," an elegant figure in white seated in an atrium, holding double pipes in her hand, while her lyre leans against a neighboring column.

Briton Riviere's "The King's Libation" represents a monarch of a dimly known antiquity, standing, a life-size figure, in a vast and lofty chamber before an altar of dark marble, from which the smoke of incense rises in a blue cloud. In one hand he holds his hunting bow, in the other he raises aloft a golden bowl, from which, while uttering the consecrating words, he pours a libation of wine. At the foot of the altar lie the huge bodies of four lions and a lioness, spoils of his bow and spear, his offering to the god.

J. W. Waterhouse's "Hamadryad" is a graceful figure hiding within the hollow trunk of an ivied oak and listening with rapt attention to a pipe played by a satyr couched near the tree. In "La Belle Dame sans Merci" the knight of Keats's poem has met the weird lady in the gloom of the pine wood, through the boughs of which is seen an azure stream in harmony with the purplish blue of the siren's robe.

Noteworthy among the sculptures were Gé-

rôme's "Bellona," shown at the Salon of 1892; "The Rescue of Andromeda," by H. C. Fehr, showing the dragon crawling over the prostrate Andromeda, with Perseus hovering over; and "The Housemaid," a bronze figure of a comely English girl kneeling beside her pail and wringing the cloth she has been using.

**London: New Gallery, 1893.**—The winter exhibition was devoted to the works of Burne-Jones, including 67 oil and water-color paintings, and more than 100 studies, crayons, chalks, and pencil drawings, many of them life-size. Among the paintings, which illustrate the artist's labors from 1861 down to the present time, are: "Merlin and Nimue" (1861), "The Merciful Knight" (1863), "Astrologia" (1865), "The Wine of Circe" (1869), "Phyllis and Demophoon" (1870), "Love among the Ruins" (1873), "Sibilla Delphica" (1877), "The Mirror of Venus" (1877), "The Beguiling of Merlin" (1877), "Laus Veneris" (1878), "The Annunciation" (1879), "Pygmalion" (1879), "Gray Graia" (1880), "Feast of Peleus" (1881), "The Wheel of Fortune" (1882), "Flamma Vestalis" (1886), "Depths of the Sea" (1886), and "King Cophetua and the Beggar Maid" (1889).

In the summer exhibition one of the most remarkable pictures was Alma-Tadema's "Unconscious Rivals," in which he shows two Roman beauties in a balcony under a great arch, decorated in the Pompeian manner with arabesques on a red ground. The complex lights—that from the interior and the golden sunlight without—are marvelously well done.

J. W. Waterhouse sent a "Naiad," the complement of his "Hamadryad" at the Royal Academy. The Naiad has left her blue stream to peer, between the trunks of the trees upon its bank, at a faun sleeping in the shadow of the wood.

Mr. Watts's "Open Door" represents a slender country girl in a saffron-red frock, gray-green cap, and black apron, cautiously opening a cottage door to let enter from the storm outside a yellow butterfly. His "Neptune's Horses" is a large sea piece, in which, under a firmament decked with a few bright stars, a calm blue sea breaks in front into a huge wave whose crest assumes the half-defined forms of white horses.

E. Burne-Jones's "Pilgrim at the Gate of Idleness" and "The Heart of the Rose" are illustrations of William Morris's version of the "Romance of the Rose," parts of a series not yet complete.

The best portrait of the exhibition was J. S. Sargent's "Mrs. H. Hamersley," a superb life-size full-length figure in a rose-colored velvet dress, on the point of rising from a gray Empire couch, with a brownish-gray curtain for background.

**London: Miscellaneous.**—The offer of Mr. Henry Tate of a collection of modern pictures as the nucleus of a National Gallery of British Art has been accepted by the Government, and a site has been found where Millbank Prison now stands, the site formerly chosen at South Kensington having proved unsatisfactory. Among Mr. Tate's collection are Sir John Millais's "Ophelia" and "Vale of Rest," Luke Fildes's "The Doctor," Orchardson's "The Rift in the Lute" and "The First Dance," J. W. Waterhouse's "Lady of Shalott," and Sir Frederick



Leighton's "The Sea shall give up its Dead." The new gallery will be under the control of the trustees of the National Gallery.

The art sales of 1893 were not so important as those of the preceding year. At a sale, May 6, of pictures belonging to Viscount Clifden and others, the following were disposed of: Rembrandt, "Wife of Burgomaster Six," £7,035; Velasquez, "Mariana of Austria, Second Wife of Philip IV of Spain," £4,305; "Infanta Maria Teresa," £1,260; "Isabel de Bourbon," £2,625; Gainsborough, "Portrait of Mary, Wife of Sir Robert Carr," £1,249; Sir J. Reynolds, "Lady Caroline, Wife of Sir Uvedale T. Price," £3,885.

The sale, June 3, of the first part of the Baring collection, the property of Lord Revelstoke, the Hon. Francis Baring, and Mr. Stewart Hodgson, comprised some well-known pictures. Sir Frederick Leighton, "The Daphnephoria," brought £3,937; Constable, "Hampstead Heath," £2,677; Gainsborough, "Mrs. Drummond," £7,035; "Lady Rodney," £2,415; Memling, "Virgin enthroned with Infant Saviour," £1,155; J. C. Hook, "Luff, Boy!" £966.

The following pictures from Cassiobury Park were sold July 17: Sir E. Landseer, "Cat's-paw," £934. J. M. W. Turner, "The Trout Stream," £5,040; "Walton Bridge," £4,305; "The Nore," £4,305. Landseer's "Cat's-paw" (1824) was sold by him to Mayer, the dealer, for £100, and was the picture which made his reputation. In 1863 it was valued at £3,000.

**Chicago: Columbian Exposition.**—In the department of Fine Arts were 10,040 exhibits, classified by countries as follow:

United States, 3,034, of which 1,132 were oil paintings, 220 water colors, 548 pastels, drawings, etc., 634 etchings, engravings, etc., 160 sculptures, medals, etc., 32 decorative work, 308 architecture; United States Loan Collection, 126, of which 122 were oil paintings and 4 sculptures.

Austria, 166, of which 132 were oil paintings, 13 water colors, 1 pastel, 4 etchings, and 16 sculptures.

Belgium, 292, of which 210 were oil paintings, 17 water colors, 4 pastels, 15 etchings, and 46 sculptures.

Brazil, 135, of which 114 were oil paintings, 9 water colors, and 12 sculptures.

Canada, 196, of which 132 were oil paintings and 64 water colors.

Denmark, 176, of which 158 were oil paintings and 18 sculptures.

France, 1,200, of which 473 were oil paintings, 69 water colors, 44 pastels, 139 etchings, 167 sculptures, 147 decorative art work, 161 architecture, and 116 historic sculpture.

Germany, 881, of which 420 were oil paintings, 80 water colors, 22 pastels, 59 etchings, 113 sculptures, and 187 architecture.

Great Britain, 1,105, of which 450 were oil paintings, 205 water colors, 72 pastels, 182 etchings, 50 sculptures, and 146 architecture.

Holland, 332, of which 190 were oil paintings, 109 water colors, and 33 etchings.

Italy, 429, of which 199 were oil paintings, 25 water colors, 28 etchings, 172 sculptures, 111 ancient sculptures, and 5 decorative work.

Japan, 375, not subject to classification.

Mexico, 91, of which 81 were oil paintings and 13 sculptures.

New South Wales, 230, of which 104 were oil paintings, 119 water colors, 5 sculptures, and 2 decorative work.

Norway, 137, of which 126 were oil paintings, 2 pastels, 8 sculptures and 1 etching.

Russia, 133, of which 117 were oil paintings and 16 sculptures; Society Polish Artists, 122.

Spain 411, of which 232 were oil paintings, 13 water colors, 13 pastels, 14 etchings, 47 sculptures, and unclassified 92.

Sweden, 214, of which 108 were oil paintings, 8 water colors, 11 pastels, 32 etchings, 19 sculptures, and unclassified 36.

Venezuela, 25 oil paintings.

Medals awarded. The following is a list of the awards to the artists of the various countries which submitted their exhibits for consideration by the board of judges. France, Belgium, Russia, and Norway did not compete. A single grade of medal (bronze) was given, with a certificate.

United States. Sculpture: John Donoghue, Charles Grafly, Henry H. Kitson, Thomas Ball, Robert P. Bringhurst, Herbert Adams, C. E. Dallin, C. H. Niehans, John Rogers, Emil H. Wuertz, F. Wellington Ruckstuhl, F. Edwin Elwell, J. J. Boyle, Edward Kemeys. Oil Painting: John S. Sargent, Mark Fisher, George de Forest Brush, Irving R. Wiles, Henry O. Walker, C. Y. Turner, Winslow Homer, Eastman Johnson, Robert Reid, C. A. Platt, J. Alden Weir, Robert W. Vonnoh, Theodore Robinson, Childe Hassam, Frederick W. Freer, George Inness, Alfred Kappes, C. F. Ulrich, Horatio Walker, J. McNeill Whistler, D. W. Tryon. Wm. L. Picknell, D. Ridgway Knight, Louis P. Dessar, Edwin H. Blashfield, Kenyon Cox, W. S. Kendall, Ben Foster, F. Duvenick, Mary F. MacMonnies, Charles C. Curran, Charles H. Davis, Henry Bisbing, H. Siddons Mowbray, Frank W. Benson, J. Francis Murphy, George Hitchcock, Edmund C. Tarbell, C. Morgan McIlhenney, Abbott H. Thayer, Elihu Vedder, G. Ruger Donoho, E. E. Simmons, Thomas Eakins, Frederick P. Vinton, Walter Palmer, Thomas W. Dewing, Gilbert Gaul, H. Bolton Jones, Louis C. Tiffany, Douglas Volk, Frederick S. Church, Orrin Peck, Wm. H. Howe, Edwin A. Abbey, Leonard Ochtman, Thomas S. Clark. Water Color: W. T. Smedley, J. H. Twachtman, Childe Hassam, Sarah T. Sears, C. Morgan McIlhenney, Emma E. Lampert, Clara T. McChesney, Kathleen H. Greatorex, Rhoda Holmes Nicholls, August Franzen, Louis C. Tiffany. Pastel: Julius Rolshoven, J. Appleton Brown, Rosina Emmett Sherwood, Henry Muhrman, Birge Harrison. Black and White: Gilbert Gaul, A. B. Wenzel, Frederick Remington, W. T. Smedley, A. B. Frost, Carleton T. Chapman, Thule De Thulstrup, W. Hamilton Gibson, Edwin A. Abbey, Howard Pyle, Will H. Low, A. C. Redwood, A. Castaigne, C. S. Reinhart, Robert Blum, R. F. Zogbaum, C. D. Gibson, Harry Fenn, Joseph Pennell, W. S. Metcalf, Elizabeth Nourse, Caroline A. Lord. Etching: Gustave Mercier, Mrs. M. Nimmo Moran, Stephen Parrish, Charles A. Platt, J. Alden Weir, J. McNeill Whistler. Wood Engraving: Walter M. Aikman, Peter Aitkin, Victor Bernstrom, W. B. Closson, Timothy Cole, Edith Cooper, W. J. Dana, S. B. Davis, E. H. Del'Orme, T. Johnson, Frank French,

Francis S. King, Elbridge Kingsley, Gustav Kruell, Albert M. Lindsay, Wm. Miller, C. A. Powell, S. G. Putman, E. Schladitz, J. Tinkey, Henry Wolf. Architecture: Brunner & Tryon, Cope & Stewardson, R. W. Gibson, H. J. Hardenburg, R. M. Hunt, Lamb & Rich, Longfellow, Alden & Harlow, Peabody & Stearns, Shepley, Rutan & Coolidge, Edmund March Wheelwright, William Halsey Wood.

Austria. Sculpture: Arthur Kaan, Victor Tilgner, Stefan Schwarz, Josef V. Myslbeck, A. Scharf. Oil painting: A. Ditsheiner, Lina Roehrer, Tina Blau, K. Moll, Rudolph Ribariz, B. Knupfer, Vacslav Brozik, Eugen Jettell, F. von Defregger, Hans Temple, Julius von Payer, Edward Charlemont, Rudolph Bacher, Wilhelm Bornatzik, M. Schmid, Rudolph Alt, Hans Schwaiger, Frantz von Pausinger, Frantz Simm, Heinrich von Angeli, Adal Seligmann, Carl Zewy, A. Zetsche, Olga Wiesinger, Mrs. Marie Mueller, Mrs. E. von Kirschberg. Etching: W. Unger.

Brazil. Oil painting: J. F. Almeida, Jr., Elisen d'Angelo Visconti, Pedro Weingartner, M. Brocos, Henrique Bernadelli. Water color: Henrique Bernadelli. Pastel: Henrique Bernadelli, Rudolpho Amodeo.

Canada. Oil painting: J. A. Fraser, G. A. Reed, T. C. V. Ede, Sarah B. Holden, Robert Harris.

Denmark. Sculpture: V. Bissen, A. W. Saabve, Stephen Sinding. Oil painting: Lauritz Tuxen, Johan C. Schlichtkrull, V. Irninger, P. S. Kroyer, Vigo Johansen, Fr. Winther, L. Paulsen, W. B. Dorph, N. P. Mols, P. Hansen, H. I. Brandekilde, A. Olsen.

Germany. Sculpture: Max Baumbach, Robert Baerwaldt, Reinhold Begas, Peter Brauer, Ad. Brutt, G. Eberlein, E. Herter, Emil Hundriesser, F. Gotz, Max Klein, Rud. Maisson, Walter Schott, A. Sommer, Paul Turpe, T. Uphues, Mich. Wagemüller, E. Wenck, Joh. Wind. Oil painting: Peter Janssen, Anton Braith, Herman Kaulbach, Mrs. Vilma Parlaghy, Jos. Block, Oscar Frenzel, Walter Leistikow, Eugen Dücker, Ferd. Max Brett, Franz Roubaud, Paul Hoecker, Otto Friedrich, F. von Schennis, E. Schwabe, Ferd. Keller, Franz von Lenbach, Ernst Zimmermann, Ludwig Knaus, Carl Salzmann, Max Koner, Wilh. Truebner, Adolf Menzel, Ferd. Brütt, Paul Meyer-Mainz, Franz von Defregger, H. König, Gabriel Max, Benj. Vautier, E. Hausmann, Franz Skarbina, Christ. Kroner, Heinrich Hermanns, Carl N. Bantzer, Henri Heimes, F. Stahl, Keller Reutlingen, Alfred Zoff, Victor Weishaupt, Max Liebermann, Fritz von Uhde, Theo. Hummel, Hans Herrmann, Wilhelm Volz, Gelth Kühl, Heinrich Zügel, E. Bracht, Hermann Baisch, J. von Brandt, Oswald Achenbach, H. Liesegang, Karl Hartmann, Richard Scholtz, Carl von Stotton, M. Thedy, J. Falat, Max Pietschman, Andersen Lundby, Carlos Grethe, P. P. Müller, Gust. Schöneleber, Paul Meyerheim, Fanny Edle von Geiger, Ernst Oppler, Chr. L. Bockelmann, Ludwig Herterich, Franz Simm, Mrs. Begas-Parmentier, Mrs. Marie Kalkreuth, Miss Auguste Schepps, Agnes Stamer. Water color: Adolf Menzel, R. Reincke, Franz Skarbina, Hans von Bartels, Hans Hermann, L. Detmann, M. Seliger, Eugen Klinsch. Porcelain painting: A. Kipps. Etching: G.

Koepping, Johannes Plato, Doris Raab, H. Struck. Line engraving: G. Eilers, Hans Meyers, Albrecht Schultheiss. Black and white: Adolf Menzel, F. Stuck, A. Oberländer. Architecture: Imperial Ministry of Public Works, Imperial Ministry of the Interior, Ende and Bockmann, G. Hauberisser, K. Hoffmann, Kayser and Von Groszheim, E. Klingenberg, H. Licht, Skjold Neckelmann, Salzmann, A. Schmidt, V. Spitta, Franz Schweeten, Paul Wallot.

Great Britain. Sculpture: Sir F. Leighton, Hamo Thornycroft, George Frampton, F. W. Pomeroy, W. G. John, E. O. Ford, John M. Swan. Oil painting: George Clausen, W. Q. Orchardson, Henry Woods, Peter Graham, James Sant, A. C. Gow, H. Fisher, A. Stokes, Sir John E. Millais, Frank Brangwyn, Henry S. Tuke, L. Alma-Tadema, David Murray, Arthur Hacker, E. A. Waterlow, Marcus Stone, Ysend King, Alfred Parsons, Walter Osborn, W. H. Bartlett, Frank Dicksee, Henry Moore, Hubert Herkomer, Sir Frederick Leighton, Anna Lea Merritt, Sol. Solomon, Colin Hunter, Monat Loudan, Frank Bramley, Charles W. Wyllie, Lady Butler, William Stott, James D. Linton, J. J. Shannon, Mosley Fletcher, J. C. Hook, W. W. Onless, Mrs. Adrian Stokes, William Carter, J. W. Waterhouse, William Logsdail, Mrs. Stanhope Forbes, Ernest Parton, Clara Montalba, G. Wetherbee, G. H. Boughton, T. C. Gotch, Seymour Lucas, Anna L. Swynnerton, W. L. Wyllie, Robert W. Macbeth, John R. Reid, L. H. La Thangue, Miss Anna Alma-Tadema, James Charles, Mrs. Alma-Tadema, A. C. Taylor, Edward Stott, Albert Moore, Briton Riviere, Miss E. Stewart Wood, John Lavery, T. R. Morris, Alfred East, William H. Titcomb, D. W. Leader, Frederick Brown, A. Stanhope Forbes, G. W. Joy, S. Melton Fisher, T. F. Goodall, Leslie Thompson, John M. Swan. Water color: J. Hay Henshall, W. Rainey, A. East, W. Hatherell, H. Coutts, Alfred Parsons, Walter Langley, L. Alma-Tadema, John Gilbert, Andrew C. Gow, James D. Linton, Thomas Lloyd, Edwin Hayes, E. A. Walton, Henry Moore, Birket Foster, Henry George Hine, W. L. Wyllie, Lionel P. Smythe, Leopold Rivers, Mrs. Allingham, Henrietta Rae. Black and White: J. R. Weguelin, George Du Maurier, John Tenniel, John Charlton, W. H. Overend, John M. Swan, James D. Linton, Kate Greenaway, F. Seymour Haden. Etching: D. Y. Cameron, Herbert Dicksee, Oliver Hall, William Hole, David Law, Leopold Lowenstam, Ethel Martyn, R. W. Macbeth, Mortimer Menpes, Charles J. Watson. Line engraving: Charles William Sherborn. Mezzotint: Gerald Robinson. Wood engraving: Biscombe Yardner. Architecture: George Aitchison, R. Rowland Anderson, George C. Ashlin, Aston-Webb & E. Ingress Bell, James Brooks, Earnest, George Peto, Thomas G. Jackson, Alfred Waterhouse.

Holland. Oil painting: M. van der Maarel, N. Bastert, William Maris, Tony Offermans, P. J. G. Gabriel, George Poggenebeek, W. B. Tholen, Theresa Schwartz, H. J. Melis, Jacob Maris, Jan Vrolyk, B. J. Blommers, Albert Neuhuys, Theophile de Bock, Mrs. M. Roosenboom, J. H. L. de Haas, J. S. H. Kever. Water color: J. S. H. Kever, Jacob Maris, M. van der Maarel, William Maris, Albert Neuhuys, Mrs. H. Grandmont



Donders, Josselin de Jong, J. H. Weissenbruck. Etching: C. L. Dake, Miss B. E. Van Houten, Ph. Zilleken, W. de Zwart.

Italy. Sculpture: A. Apolloni, A. Allegretti, C. Barbella, E. Biondi, L. Bracony, L. de Paoli, E. Maccagnani, A. Maltoni, E. Pellini, F. Soeböck, P. Troubetskoy, Adelaide Maraini. Oil painting: F. Carcano, M. G. Zanetti, G. Boldini, M. Corteggiani, E. Prati, A. Corelli, A. Dall'Oca Bianca, G. Bottero, P. Fragiacoimo, S. Novo, R. Santoro, O. Da Moli, G. Ciardi, L. Rossi, T. Lessi. Water color: A. Corelli, D. Pennacchini, P. De Tommasi, G. Simoni, C. Tiratelli. Line engraving: Regia Calcografia, Roma.

Japan. Sculpture: Okioka Asahi Eizo and Asahi Gyokzan, Okazaki Sessei, Otake Norikuni, Suzuki Chokichi, Takamura Koun, Yamada Kisai, Schurak Baido. Oil painting, etc.: Kawabata Gyokusho, Imao Keinen, Mochizuki Gyokusen, Tasaki Sowun, Taniguchi Kokyo, Kubota Beisen, Noguehi Yukoku, Taniguchi Taichi, Hara Ryutaro, Mumenura Keizan, Ujii Sozan, Mori Shungaku, Asae Ryukyo, Takenchi Seiho.

Mexico. Oil painting: José Maria Velasco, Gertrudi Schmitlein.

New South Wales. Oil painting: W. Lister, Thomas Robert, A. H. Fullwood, Mrs. Ellis Rowan.

Society of Polish Artists. Oil painting: W. Pruskiowski, John Mateyko, S. Kadzevski, J. Ryszkiewicz, W. Gerson, W. Telmayer, Z. Jasinski, W. Pieckowski.

Spain. Sculpture: José Alcoverro y Amoros, A. Marinas y Garcia, Augustin Querol, Angel Trilles, Cipriano Folgueras, José Viziano y Marti. Oil painting: J. Garuelo, Felix R. Hidalgo, Santiago B. Rusiñol, José F. Tapiro, Degrain Antonio, Aureliano de Barnete, Juan y Rodriguez Planella, Dumond Alvarez, Luis Jimenez-Aranda, Fernandez y Pelayo, Carbonero Moreno, Gonzalo S. Bilbao, M. e Ibanez Ramirez, Luis Alvarez, Joaquin Sorolla, Enrique Simonet, José y Jimenez-Aranda, Sedano Santa Maria, M. Domiguez, José Gartner, Juan Loubre, Rosello, Ruiz Luna, Maria Poiala. Water color: José de Tapiro. Pastel: José de Pando. Black and white: J. Rios, J. L. Pellisier. Engraving: Ricardo de los Rios. Architecture: Domingo Dalet, Enrique Maria Repulles.

Sweden. Sculpture: W. Ackerman, Christian Eriksson, Per Hasselberg. Oil painting: Nils Kreuger, Carl Tradgardh, Alf. Wallander, Bruno Liljefors, Ida von Schultzenheim, Carl H. Nordstrom, A. Schultzberg, O. Bjork, A. Jungstedt, O. Arborelius, Carl Larsson, Prince Eugene. Water color: Carl Larsson, Karl Kjellin. Pastel: Prince Eugene. Black and white: Bruno Liljefors. Etching: F. Boberg, A. H. Haig.

Turkey. Oil painting: Hamdi Bey.

Venezuela. Oil painting: A. Herrera Zoro, Arturo Michelena, Cristobal Rojas.

**New York: National Academy of Design.**—The sixty-eighth annual exhibition of the National Academy (March 27 to May 13) contained about 450 works of the usual average. The three Hallgarten prizes of \$300, \$200, and \$100, respectively, which had not been awarded since 1889, were voted to C. Morgan McIlhenney for his "Gray Morning," Edward A. Bell for "The Five Dreamers," and Henry Prellwitz for "The Prodigal Son." These gentlemen received

the prizes for the three years. The Thomas B. Clarke prize of \$300 was given to Charles C. Curran's "Sirens." The Norman C. Dodge prize of \$300 for the best picture painted by a woman was awarded to Miss Cecilia Beaux's portrait of a lady in gray (Mrs. Isaiah Stetson.)

A loan exhibition was held also (June 15 to Nov. 1) in the Academy galleries, at which 400 pictures of exceptional quality were shown, together with a fine collection of tapestries, embroideries, miniatures, carvings, etc.

**American Fine Arts Society.**—This association, composed of the Society of American Artists, the Architectural League of New York, and the Art Students' League, opened its new home in West 57th Street, in December, 1892, with an exhibition of works by members of the first-named society, and a collection of etchings and other prints belonging to George W. Vanderbilt. To this gentleman the society is indebted for the splendid gallery in the rear of their building, built by him at a cost of \$100,000. It is modeled after the well-known gallery of Georges Petit in Paris.

A grand loan exhibition of the best works of art obtainable in this country, comprising masterpieces of most of the great schools of painting and sculpture, and other works of art, was opened in February, 1893. Among the objects of special interest were several fine Rembrandts belonging to H. O. Havemeyer and Morris K. Jesup, and excellent examples of Velasquez, Pieter de Hoogh, Franz Hals, Adrian Van Ostade, Reynolds, Gainsborough, Turner, Constable, and many later masters. Conspicuous was a model of D. C. French's colossal statue of "The Republic" which adorned the basin of the Court of Honor at the World's Fair at Chicago. The gross receipts were \$15,699.

The fifteenth annual exhibition of the Society of American Artists was held at the Fine Arts Building from April 17 to May 13. The Webb prize for the best landscape was awarded to Henry G. Dearth for "The Deerfield Valley," and the Shaw fund to Edmund C. Tarbell for his picture entitled "The Bath," which was purchased by S. T. Shaw for \$1,500.

The Blakeslee collection, consisting of 149 pictures, chiefly of the French school, sold at Chickering Hall, April 4 and 5, realized \$136,630. Troyon's "Approaching Storm" brought \$29,250; C. F. Daubigny's "Apple Orchard," \$11,100, and his "Spring," \$5,500; L. G. E. Isabey's "Return of Royal Hunting Party—Chateau de Chambord," \$6,300; Jules Dupre's "Old Oak," \$5,100; Schreyer's "The Stampede," \$4,550; and J. F. Millet's "Sheep at Pasture," \$4,500.

The collection of Robert L. Cutting, consisting of 91 oil paintings, sold at Chickering Hall in March, realized \$111,130. The highest price, \$16,000, was paid for "The Return to the Convent," by Zamacois.

The collection of oil paintings and water colors belonging to the estate of the late R. Austin Robertson was sold in April. The 156 paintings brought \$270,380. Troyon's "Le Paysage du Bac" sold for \$27,000; Delacroix's "Lion Hunt," \$13,000; and "Arab Cavalier attacked by a Lion," \$6,350 (Potter Palmer, Chicago); Diaz's "Le Parc des Bœufs," \$12,500; Millet's

"Paysage d'Auvergne," \$12,000; Rembrandt, "Homme d'Armes," \$9,000; Rousseau, "Forest in Winter," \$9,000.

A Columbus monument, by the Sicilian sculptor, Gaetano Russo, presented to New York by Italian citizens, was dedicated in the circle at the Eighth Avenue entrance to Central Park, in October, 1892. It consists of a tall column of gray granite, ornamented with the beaks of galleys in bronze, surmounted by a colossal statue of the discoverer in marble. Two reliefs in bronze, representing the departure of Columbus and his landing, decorate the pedestal, which sustains also a marble figure with a globe on one side, and a bronze eagle with the arms of New York and of Genoa on the other.

A life-size bronze statue of Ericsson, by J. S. Hartley, was erected at the Battery, New York, in April, 1893.

The pictures by Gustave Doré, formerly in the Doré Gallery, London, and later on exhibition at the Carnegie Music Hall, were displayed in a new Doré Gallery at 810 Seventh Avenue, New York, in June.

The Sculpture Society, for the promotion of good sculpture, was organized in New York in June, with J. Q. A. Ward as president.

The figure of Diana, by St. Gaudens, formerly on the tower of the Madison Square Garden, and later sent to Chicago to decorate the dome of the Agricultural Building at the World's Fair, has been replaced by another one of better proportion, only 13 feet high. The original one was 18 feet.

The Washington Memorial Arch is finished, excepting the four spandrels, which are to be filled with sculptured figures of Victory, Peace, Fame, and another, by William MacMonnies, the designer of the Columbus Fountain in the Court of Honor at the World's Fair, Chicago.

A bronze statue of Alexander Hamilton has been erected by the Hamilton Club in front of their clubhouse in Brooklyn.

On October 19, was dedicated at Trenton, N. J., a monument to mark the site of the battle of Trenton, fought by Washington, Dec. 26, 1776, the corner stone of which was laid in December, 1891. It consists of a fluted Doric column elevated on a square pedestal, and surmounted by a colossal statue of Washington. The base and shaft, which rises 150 feet above the street, are of Maine granite. The base contains a room for Revolutionary relics, and an elevator gives access to an observatory on the summit overlooking the entire battle field. The statue, which is bronze, and 13 feet high, represents Washington with outstretched hand ordering Alexander Hamilton to begin the attack. The monument is the design of John H. Duncan.

A bronze statue of Nathan Hale (known as "the patriot spy"), larger than life, by William MacMonnies, was unveiled on Nov. 25, Evacuation Day, in City Hall Park, facing Chambers Street, on the traditional spot of the martyr's execution, Sept. 22, 1776. The figure is ideal, there being no portrait extant of Hale. It was erected by the Sons of the Revolution.

A bronze statue of Roscoe Conkling, by J. Q. A. Ward, was erected in December at the southeast corner of Madison Square. It represents him as speaking.

**FLORIDA**, a Southern State, admitted to the Union, March 3, 1845; area, 58,680 square miles. The population, according to each decennial census since admission, was 87,445 in 1850; 140,424 in 1860; 187,748 in 1870; 269,493 in 1880; and 391,422 in 1890. Capital, Tallahassee.

**Government.**—The following were the State officers during the year: Governor, Henry L. Mitchell, Democrat; Comptroller, William D. Bloxham; Treasurer, C. B. Collins; Attorney-General, W. B. Lamar; Superintendent of Public Instruction, W. N. Sheats; Commissioner of Agriculture, L. B. Wombwell; State Board of Health, W. B. Henderson, James Y. Porter; State Health Officers, James P. Talliaferro and Dr. W. E. Anderson; Chief Justice of the Supreme Court, George P. Raney; Associate Justices, Milton H. Mabry and R. F. Taylor.

**Taxes.**—The value of property, with gross amount of State taxes for the year 1892, including licenses and auction tax, was as follows: Total value of real estate, personal property, railroads, and telegraphs, \$98,368,014.64; total receipts at treasury from all sources, \$769,225.76; general school tax, 1 mill; Board of Health tax, one fourth mill; receipts from license tax, \$161,333.41.

**Valuations.**—The assessment rolls for 1892 show the following property assessed: Acres, 25,097,278; acres improved and cultivated, 935,152; valuation (except town and city lots) of all improvements, \$43,140,493; valuation of town and city lots and all improvements, \$22,250,778; aggregate value of telegraph lines, \$192,192.95; number of horses, asses, and mules, 46,644; neat stock and cattle, 470,380; sheep and goats, 120,414; swine and hogs, 197,900; cash value of animals, \$5,371,373; value of personal property, \$11,690,106; value of real estate, \$65,391,271; value of railways, railroads, and rolling stock, \$15,676,072.67.

**Phosphates.**—Among the companies organized in 1893 is the Florida Mining and Chemical Company, whose object is the mining and the manufacture of high-grade superphosphates, cotton-seed oil, etc. From Punta Gorda the tonnage has exceeded that of the preceding year. In November, 1893, the aggregate was 9,200 tons—4,000 domestic and 5,200 foreign. The tonnage from Tampa for the same month was 12,370, and from Fernandina 10,000. The demand from European buyers has been steady, and the market shows an upward tendency for 1894.

**Legislative Session.**—The fourth regular session of the Legislature under the Constitution of 1885 was held at Tallahassee, beginning on April 4, 1893. Few bills of general importance were passed. Among those that became laws were the following:

To provide for the redemption and cancellation of tax-sale certificates held by the State for taxes due for 1890 and previous years.

To amend sections 2421, 2423, and 2425, and to repeal section 2422 of the Revised Statutes of the State of Florida, relating to the carrying of concealed weapons.

To provide for the service of nonresident defendants and others in chancery causes, being an act to amend section 1413 of the Revised Statutes.

To limit the time within which appeals in chancery may be taken.



To amend sections 1429 and 1443 of the Revised Statutes concerning masters in chancery.

To prohibit wrongful combinations against workmen.

To prohibit manufacturers from the wrongful use of the name of the city in which such articles are manufactured.

Preventing the shipment of partridges and quails killed or entrapped in Florida.

To regulate the carrying of firearms.

Prescribing that a scroll or scrolls, printed or written, shall be as effectual as a seal.

To confer on married women in certain cases the right to dispose of real or personal property.

In aid of societies for the prevention of cruelty to animals, and to increase their efficiency.

To suppress the illegal sale of spirituous, vinous, and malt liquors.

To punish the setting up or drawing of lotteries, or aiding by writing or printing in the setting up of lotteries.

To empower the Governor, Treasurer, and Comptroller to borrow money for State purposes.

To authorize the Governor, Comptroller, and Treasurer to deposit the public moneys with banks in this State.

In relation to foreign building and loan associations.

To amend sections 891, 893, 897, 898, 899, 900, 902, 906, 907, and 910, and to repeal sections 892, 894, and 901 of the Revised Statutes relating to the inspection of fertilizers.

To authorize the appointment of a State inspector of illuminating oils and fluids.

To encourage and promote immigration in the various counties of Florida, and to provide for the assessment and collection of revenue for these purposes.

To punish the larceny, killing, wounding, or injuring of dogs.

To amend section 6 of an act entitled "An Act to amend an Act to provide for and encourage the organization of a corps of volunteer militia and enforce their discipline," approved June 11, 1891; and further to provide for and encourage the organization and discipline of said corps.

In relation to the liability of insurance companies in the State.

To enable owners of swamp, low or overflowed lands to drain and reclaim them.

To amend sections 568 and 570 of the Revised Statutes concerning annuities for disabled soldiers and sailors of Florida.

To prescribe rules and regulations for licensing teachers, to provide for uniform examinations, to secure fairness in examinations and in issuing teachers' certificates, and for other purposes.

To declare the first Monday in September of each year Labor Day and a legal holiday.

To regulate the hours of labor of trainmen on railroads in this State.

To define the duties of all common carriers in the State.

To prevent discrimination in the carrying of passengers and freight by railroad, steamboat, and other transportation companies.

For the protection of discharged employees, and to prevent black listing.

For the protection of the manatee or sea cow.

To protect the diamond-back terrapin.

For the protection and preservation of the natural or public oyster beds within the jurisdiction of Santa Rosa County.

To prevent fishing in the lakes of the State with seines or nets or any set device for a term of years.

To provide for the establishment and maintenance of an agricultural station for the State, and to grant certain lands for its endowment.

To authorize the municipality of Jacksonville to issue bonds and to provide for the payment thereof.

To authorize the town of Quincy to issue bonds to an amount not to exceed \$20,000 for water works and sewerage.

To incorporate a charitable and educational institution in the counties of Duval and Nassau and other counties in the State under the name of St. Joseph's Convent.

To create charitable, philanthropic, and educational institutions in the counties of Pasco, Gadsden, and other counties in the State under the name of Holy Name Academy.

To establish a general hospital in the city of Fernandina.

To incorporate the Florida Conference College.

To incorporate the Terra Ceia College and University Association.

To incorporate the Florida annual conference of the Methodist Episcopal Church, South.

To incorporate the Protestant Episcopal Church in the missionary jurisdiction of southern Florida.

To aid in the maintenance and support of a home for disabled and indigent ex-Confederate soldiers and sailors.

Several acts incorporating railroad companies.

To provide for a levy by the county commissioners annually of a tax to pay interest upon and raise a sinking fund to meet the principal of county bonds issued for the purpose of erecting courthouses, jails, armories, or other county buildings.

Several acts declaring certain streams navigable.

To incorporate the city of Bartow.

Joint resolutions proposing amendments to the Constitution of the State.

Joint resolution relating to duty on foreign pine-apples.

Concurrent resolution requesting the Senators and members of the House of Representatives from Florida in the Congress of the United States to procure an investigation by Congress of the conduct and judicial acts of Justice Swayne, of the United States District Court for the northern district of Florida.

A memorial to the Congress of the United States, asking for an appropriation for the better equipment and support of the agricultural colleges of the United States.

A memorial to Congress asking for an appropriation for the improvement and deepening of the channel of St. John's river between Jacksonville and Palatka.

**FRANCE**, a republic in western Europe, proclaimed on Sept. 4, 1870, after the overthrow of the third empire. The Constitution of June 16, 1875, as revised and amended in August and November, 1875, December, 1884, June, 1885, and July, 1889, vests the legislative authority in two Chambers, forming together the National Assembly, which elects the President of the republic by an absolute majority for a term of seven years. The executive power is vested in the President and a body of ministers, who are responsible to the Chamber of Deputies. The President can make treaties, nominate all civil and military officers, and can dissolve the Chamber of Deputies with the consent of the Senate; he can not, however, declare war without the consent of both Chambers. All his acts must be countersigned by a minister. The Senate is composed of 300 members, elected indirectly by special commissions of the departments for a term of nine years, one third retiring every three years. The Chamber of Deputies consists of 581 members, elected by direct universal suffrage in each *arrondissement*, in the proportion of 1 Deputy to every 70,000 inhabitants, for a term of four years. Laws may be framed or initiated by either Chamber, but financial measures must first be introduced in and voted by the Chamber of Deputies. Before a bill can be brought before either Chamber it must be submitted to a

special *bureau* or committee, which reports to the Chambers. The Deputies receive 9,000 francs, and the Senators 15,000 francs, annually. The President gets 600,000 francs salary, and an equal amount for his expenses.

The President of the republic is Marie François Sadi Carnot, born in 1837, elected on the resignation of Jules Grévy, Dec. 3, 1887. The ministry at the beginning of 1893 was composed of the following members: President of the Council and Minister of the Interior, M. Ribot; Minister of Foreign Affairs, M. Develle; Minister of Finance, M. Tirard; Minister of Public Instruction and Worship, M. Dupuy; Minister of Justice, M. Bourgeois; Minister of War, Gen. Loizillon; Minister of Marine and Colonies, M. Burdeau; Minister of Public Works, M. Viette; Minister of Agriculture, M. Viger; Minister of Commerce, M. Siegfried.

**Commerce.**—The value of the imports in the general commerce in 1891 was 5,938,000,000 francs (1 franc=19½ cents), and that of the exports 4,730,000,000 francs. The special imports, which embrace only those intended for home consumption, amounted to 4,768,000,000 francs; and the special exports, consisting of merchandise of French production, were valued at 3,570,000,000 francs. Of the special imports, 1,653,000,000 francs represent food products, 2,419,000,000 francs raw products, and 650,000,000 francs manufactured goods. Among the exports, food products were valued at 809,000,000 francs, raw products at 835,000,000 francs, and manufactured goods at 1,926,000,000 francs. The principal special imports and their values in 1891 were as follow: Cereals, 532,000,000 francs; wine, 401,000,000 francs; raw wool, 340,000,000 francs; timber and wood, 251,000,000 francs; raw silk, 249,000,000 francs; hides and furs, 215,000,000 francs; raw cotton, 204,000,000 francs; oil seeds, 200,000,000 francs; coal and coke, 190,000,000 francs; coffee, 149,000,000 francs; woolen textiles, 75,000,000 francs; silk textiles, 69,000,000 francs; cattle, 60,000,000 francs; foreign and colonial sugar, 55,000,000 francs; fruits, 51,000,000 francs; flax, 49,000,000 francs; cotton textiles, 45,000,000 francs. Of the total special exports the principal ones were: Woolen textiles, 327,000,000 francs; silk textiles, 246,000,000 francs; wine, 246,000,000 francs; small wares, 152,000,000 francs; leather goods, 139,000,000 francs; linen and linen cloth, 133,000,000 francs; raw silk and silk yarn, 109,000,000 francs; raw wool and woolen yarn, 109,000,000 francs; leather, 107,000,000 francs; cotton textiles, 101,000,000 francs; cheese and butter, 92,000,000 francs; metal goods, tools, 89,000,000 francs; skins and furs, 79,000,000 francs; spirits, 75,000,000 francs; chemical produce, 52,000,000 francs; refined sugar, 50,000,000 francs.

Of the total imports of the general trade, merchandise to the amount of 4,298,000,000 francs came by sea, 1,658,000,000 francs by French, and 2,640,000,000 francs by foreign ships, while 1,640,000,000 francs came by land. Of the exports, 3,206,000,000 francs went by sea, 1,740,000,000 francs by French, and 1,466,000,000 francs by foreign ships, while 1,525,000,000 francs went by land.

The following table shows the special trade with the leading countries in 1891, in francs:

COUNTRIES.	Imports.	Exports.
Great Britain.....	589,000,000	1,013,000,000
Belgium.....	487,000,000	500,000,000
United States.....	486,000,000	248,000,000
Germany.....	367,000,000	364,000,000
Spain.....	412,000,000	181,000,000
Algeria.....	187,000,000	207,000,000
Argentine Republic.....	198,000,000	52,000,000
British India.....	250,000,000	.....
Switzerland.....	.....	235,000,000
Russia.....	212,000,000	.....
Italy.....	124,000,000	126,000,000

**Navigation.**—The number of vessels entered at the ports of France during 1891 was 99,854, of 21,717,185 tons, of which 81,331, of 20,138,398 tons, were with cargoes, and 18,523, of 1,578,787 tons, came in ballast. The total number cleared was 100,775, of 22,118,847 tons, of which 74,964, of 15,255,595 tons, were with cargoes, and 25,811, of 6,863,252 tons, in ballast. Of the vessels entered, 22,803, of 10,896,789 tons, were foreign, 9,353, of 4,703,818 tons, were French vessels in the foreign trade, and 67,698, of 6,116,578 tons, were French vessels in the coasting trade. Of those cleared, 23,101, of 11,001,896 tons, were foreign vessels, 9,976, of 5,000,373 tons, were French vessels engaged in the foreign trade, and 67,698, of 6,116,578 tons, were French vessels in the coasting trade.

The commercial navy on Jan. 1, 1892, numbered 13,890 sailing vessels, of 426,207 tons, with 68,823 men in their crews, and 1,157 steamers, of 521,872 tons, with crews numbering 14,360. Of the total, 280 sailing vessels, of 53,526 tons, and 250 steamers, of 165,985 tons, were engaged in the European trade, while 324 sailing vessels, of 136,574 tons, and 187 steamers, of 315,279 tons, were engaged in ocean navigation.

**Mails.**—In 1890 there passed through the post-office 810,991,000 letters, 32,628,000 registered letters and money orders of the declared value of 3,083,770,000 francs, 48,230,000 postal cards, and 973,092,000 samples and printed inclosures. The internal traffic was 685,144,000 letters, 42,626,000 postal cards, 864,314,000 samples and printed inclosures, and 30,721,000 registered letters and money orders, of the declared value of 2,825,766,000 francs.

**The Army.**—Service in the army is compulsory for every Frenchman physically fit to carry arms. His liability to serve begins with the age of twenty and ceases when he has attained the age of forty-five. The army is organized into the active army, the reserve of the active army, the territorial army, and the territorial reserve. The active army consists of all the young men, enlisted annually for a term of three years, at the end of which they form part of the reserve of the active army for a term of ten years, then are transferred to the territorial army for six years, and finally belong to the reserve of the territorial army for another term of six years. Part of those belonging to the active army may be released after one year's service, their number being fixed annually by the Minister of War and the individuals released being determined by lot. Men who are supporting a family may also be released after one year's service, while such as are unable to read and write must serve at least two years. Those unable to serve and those serving less than three years in the active army pay a



military tax of 6 francs. The men of the active army or its reserve are drawn from and distributed over the whole country, while the territorial army or its reserve is confined to fixed localities.

For the purpose of military organization France is divided into 18 regions, each region embracing 8 subdivisions. Each region is occupied by 1 army corps. The following table shows the strength and distribution of the army, including officers and men, in 1893 :

DESCRIPTION OF TROOPS.	France.	Algeria.	Tunis.	Total.	Horses.
General staff.....	3,976	370	74	4,420	3,918
Military schools.....	3,364	.....	.....	3,364	2,343
Unattached.....	2,360	763	101	3,229	485
Gendarmerie.....	21,514	1,037	154	22,815	11,469
Garde Républicaine..	3,050	.....	.....	3,050	740
Total.....	34,324	2,225	329	36,878	18,955
Infantry.....	293,520	35,908	8,760	338,188	7,320
Cavalry.....	67,564	8,260	2,032	77,856	69,194
Artillery.....	76,117	2,719	698	79,534	35,285
Engineers.....	11,181	747	325	12,253	1,332
Train.....	7,605	3,121	1,032	11,758	8,790
Administrative.....	11,807	3,523	493	15,823	.....
Total army corps...	467,794	54,278	13,340	535,412	121,924
Grand total.....	502,118	56,503	13,669	572,290	140,879

The officers of the army corps number 20,655. Deducting vacancies, sick, and absent, the total effective for 1893 is 489,771 for the active army, and 25,604 for the gendarmerie and Garde Républicaine. The territorial army numbers 37,000 officers and 579,000 men. The total war strength of the republic is about 2,500,000 men, including only the active army and the various reserves. A general levy would put some 3,750,000 drilled men into the field.

(For information concerning the French navy, see the "Annual Cyclopædia" for 1892, page 282.)

**Finances.**—The budget for 1893 estimates the total revenue at 3,348,158,622 francs. Deducting from this sum 64,289,854 francs, representing receipts *d'ordre*, and 48,855,020 francs, being the revenues from Algeria, the total ordinary revenue amounts to 3,235,013,748 francs. Of the total ordinary revenue, 118,522,206 francs are derived from the land tax, 77,565,248 francs from the building tax, 87,500,937 francs from the personal-property tax, 56,797,110 francs from the tax on doors and windows, 121,804,802 francs from trade licenses, 1,055,500 francs from the tax on notices, and 31,568,660 francs from the tax on carriages, horses, and other special taxes, making the total direct taxes 494,814,463 francs. Receipts from registration fees amount to 540,276,500 francs, stamps to 163,437,500 francs, customs to 491,536,000 francs, sugar duty to 195,983,400 francs, a 4-per-cent. tax on movables to 70,393,000 francs, and other indirect taxes to 582,250,100 francs, the total amount received from indirect taxes is therefore 2,043,876,500 francs. State monopolies are estimated to yield 615,619,050 francs; domains and forests, 45,883,300 francs; and various other revenues, 34,820,435 francs.

The rectified budget estimates for 1892 made the total ordinary revenue 3,177,741,344 francs, and the grand total 3,291,882,688 francs. The land tax for 1892 was estimated at 118,508,647 francs; building tax, 79,452,795 francs; personal-

property tax, 86,371,490 francs; tax on doors and windows, 56,153,762 francs; trade licenses, 120,775,120 francs; tax on notices, 1,054,350 francs; tax on carriages, horses, and other special taxes, 30,768,600 francs; registration fees, 537,131,925 francs; stamps, 168,670,300 francs; customs, 450,141,700 francs; sugar tax, 181,000,000 francs; tax of 4 per cent. on movables, 67,733,300 francs; other indirect taxes, 587,072,600 francs; state monopolies, 610,013,100 francs; domains and forests, 47,527,160 francs; various other revenues, 35,366,495 francs.

The expenditures for 1893 are estimated at 3,347,691,488 francs, including 64,948,129 francs for Algeria. Of the total ordinary expenditure, amounting to 3,282,743,359 francs, 1,298,146,159 francs are for the public debt, 13,235,520 francs for the President, the Senate, and the Chamber, 34,819,500 francs for the Ministry of Justice, 43,736,057 francs for the Ministry of Worship, 15,564,800 francs for the Ministry of Foreign Affairs, 65,236,824 francs for the Ministry of the Interior, 19,534,220 francs for the Ministry of Finance, 585,018,698 francs for the ordinary and 60,138,000 francs for the extraordinary expenditure of the Ministry of War, 224,395,000 francs for the Ministry of Marine, 72,624,747 francs for the Ministry of the Colonies, 183,829,965 francs for the Ministry of Public Instruction, 8,090,055 francs for the Ministry of Fine Arts, 20,343,010 francs for the Ministry of Commerce, Posts, and Telegraphs, 29,202,130 francs for the Ministry of Agriculture, 78,847,924 francs for the ordinary and 136,628,650 francs for the extraordinary expenditure of the Ministry of Public Works, 349,779,500 francs for the Régie and for expenses of collecting taxes, etc., and 43,542,600 francs for repayments.

The rectified estimates for 1892 place the total ordinary expenditure at 3,217,825,525 francs, of which 1,284,191,374 francs are for the public debt, 13,094,440 francs for the President, the Senate, and the Chamber, 37,505,816 francs for justice, 44,057,157 francs for religion, 15,078,800 francs for foreign affairs, 69,634,702 francs for the interior, 19,967,490 francs for finance, 585,118,197 francs for ordinary and 85,402,500 francs for extraordinary expenses of the Ministry of War, 212,903,414 francs for marine purposes, 55,125,467 francs for the colonies, 178,512,914 francs for public instruction, 8,140,955 francs for fine arts, 19,599,636 francs for commerce, industry, posts, and telegraphs, 36,072,650 francs for agriculture, 86,478,000 francs for ordinary and 110,647,000 francs for extraordinary expenses of the Ministry of Public Works, 183,154,944 francs for the collection of taxes, and 13,025,700 francs for repayments.

The interest on the public debt in 1893 was 1,298,146,159 francs, consisting of 456,127,962 francs of 3-per-cent. perpetual *rente*, 305,540,276 francs of 4½-per-cent. *rente*, 314,201,954 francs of terminable annuities, and 222,275,967 francs of pensions and other life interests. The capitalized value of the consolidated debt is calculated at 21,251,700,000 francs, that of amortizable *rentes* at 7,185,700,000 francs, the floating debt on Jan. 1, 1887, at 998,600,000 francs, the guaranteed debt at 1,765,821,000 francs, and the debts due the Banque de France at 444,000,000 francs, making a grand total of 31,645,821,000 francs.

**The Panama Scandal.**—The Panama Canal Congress, which met at Paris, May 15, 1879, approved the project of Ferdinand de Lesseps for a tide-water canal across the Isthmus of Panama and the estimates of experts who reported that it could be built in twelve years at a cost of 1,200,000,000 francs, and would yield when completed an annual income of 90,000,000 francs, giving a dividend of 7 per cent. to ordinary shareholders, as the expenses would not exceed 5 per cent. of the receipts. M. de Lesseps, after a visit to the isthmus in 1880, reduced the estimates for cost of construction to 843,000,000 francs, and promised to complete it by 1887. The 500-franc shares of the *Compagnie Universelle du Canal Interocéanique de Panama* were eagerly taken by all classes of Frenchmen, especially by the peasants. The share capital was 300,000,000 francs. Couvreux and Hersent contracted to do the work for 512,000,000 francs, it was represented, though the contract was, in fact, to work by the piece, and the contractors soon withdrew with a large indemnity. New contracts were made at a higher figure. Loans were floated by the aid of bulling operations of the directors. Large sums were paid out for puffery or as hush money, 1,362,000 francs in 1882 alone to newspaper proprietors, who jealously chattered about the market value of the influence of their respective organs. The successive loans, obtained by means of purposely deceptive estimates, were loaded with more and more oppressive conditions; yet interest had to be paid regularly on the nominal sums. In 1886 the company applied to the French Chamber for permission to raise a lottery loan, representing that works amounting to 471,000,000 francs had been executed, though the true amount was 171,000,000 francs. A great number of signatures had been obtained to petitions circulated through France in favor of this loan, but the committee of the Chamber recommended the rejection of the bill; whereupon M. de Lesseps withdrew the proposed loan, and issued instead an ordinary loan for 600,000,000 francs, with which he promised to complete the canal. The promoters of the canal, anxious to save from failure the crowning achievement of Ferdinand de Lesseps, the "great Frenchman," had now to treat with lobbyists and legislators, as well as with the newspaper organs of active politicians of all parties. They still clung to the promised sea-level canal, although M. Rousseau, who was sent out by the Government in 1886 to examine the route, and even their own engineers, pronounced it financially impracticable. Charles Baïhaut, then Minister of Public Works, demanded 1,000,000 francs as pay for his support of the lottery loan, and received a check for 375,000 francs. In 1887 a fresh loan was necessary, not only to carry on the work of construction and pay excessive interest on the loans already raised, but to satisfy the exorbitant demands of those who had the power to ruin the enterprise. This was only half taken up. In 1888 there was a second application for a lottery loan bill, which M. Tirard, Minister of Finance, refused to entertain. It was renewed, supported by popular petitions with 158,000 signatures, and a plan for a canal with locks was at last presented, which was made alluring by the announcement of a

contract with M. Eiffel for the employment of machinery of 450,000 horse power, and the loan was authorized by the Chambers. To float the loan Baron Reinach was given 6,000,000 francs, and circulars and prospectuses containing deliberate misstatements, stump speeches, and glowing articles in subsidized papers, all failed to secure subscriptions enough to produce 600,000,000 francs, with which Charles de Lesseps promised to complete the canal in three years, though it was known that 980,000,000 francs would be required. For each of these loans there were enormous sums charged in the books of the company to syndicates and the expenses of advertising. Although the loan of 1886 did not succeed, the syndicate that undertook to place it pocketed 11,000,000 francs. In 1888 the banker Oberndörffer, who suggested the lottery loan, received 2,000,000 francs for the idea; 2,000,000 francs were paid for publicity, 2,900,000 francs for syndicate expenses, and 1,400,000 francs were set down to warrants to bearers, which were distributed among journalists and politicians.

When bankruptcy came and the Government appointed an official liquidator, M. Brunet, who was succeeded on his death by M. Monchicourt, it was found that 1,300,000,000 francs had been spent, while only 700,000,000 francs of assets remained. The sum expended on the works was something over 500,000,000 francs. The expense of loans was 160,000,000 francs, and 440,000,000 francs had been consumed in extravagant salaries and profits of contractors. The official accountant who examined the books in 1893 discovered that the disbursements were 1,434,000,000 francs, including 249,000,000 francs for interest on coupons. The sum expended on the works was 550,000,000 francs, of which 107,000,000 francs were paid direct to workmen and 443,000,000 francs to contractors. Of four of the contractors the profits were 77,000,000 francs. M. Eiffel's share was 33,000,000 francs, but after paying bonuses and commissions to the intermediaries who helped him to obtain the contracts he had only 20,000,000 francs left, from which he refunded 3,000,000 francs on the demand of the liquidator. There had been warrants payable to bearer to the amount of 7,000,000 francs, the purposes and beneficiaries of which were concealed from the liquidator.

In 1887 M. Rouvier, the Prime Minister, accepted 50,000 francs of the Panama money to meet certain expenses incurred in fighting Boulangism, expecting to pay it back out of the secret-service fund. Baron Reinach, who was able not only to ruin the Panama enterprise but to break down the Government, then engaged in the struggle with Boulangism, by disclosing his bribery of Republican politicians, became more extortionate in his demands. Charles de Lesseps had from the first disapproved the Panama enterprise, and sought to dissuade his father from engaging in it; but the old man considered it his duty to lend the influence of his name to an undertaking that would prove a greater triumph of French engineering than the Suez Canal. The underwriting syndicates that undertook to float the Panama bonds took no risk, paying only 2½ francs per bond, while they received from 5 to 20 francs as commission for selling each bond. Reinach did not even ad-



vance the 2½ francs. Reinach received 3,390,000 francs under the head of commissions, besides 2,590,000 francs for advertisement. This was outside of the large sums that he at first received to pay for political and newspaper influence, and latterly extorted and applied to his private uses. He was believed to have been in turn the victim of Herz, whose demands upon him caused his death and the subsequent investigations. The accounts of his estate showed that he had paid over to Herz more than 11,000,000 francs. Reinach had received about 10,000,000 francs in 1884, and in 1888 he demanded 10,000,000 or 12,000,000 francs more for the alleged purpose of satisfying the extortionate demands of Herz, declaring that the Panama enterprise would be ruined if he did not obtain it. Charles de Lesseps supposed it to be a plot concocted between them, and refused to pay out any more. At this the three chiefs of the Radical party, Ministers Floquet and de Freycinet and Dr. Clémenceau, sent for him and besought him to satisfy Reinach's demands, if he could, and thus avert a financial crash that would aggravate the political crisis.

Toward the close of 1892, in the course of a business dispute between Cornelius Herz and Baron Reinach, the manipulator of the corruption fund, the former threatened to reveal the secret history of the Panama loans. Reinach either took poison or died from apoplexy, brought on by fear of prosecution. The Opposition Deputies and newspapers demanded an investigation of the affairs of the Panama company. M. Ricard, the Minister of Justice, set the police to work, and when the counterfoils of checks drawn by Reinach were discovered with the names or initials of prominent politicians upon them, he insisted, against the wishes of most of his colleagues, on bringing everything to light. There were 26 checks of the aggregate amount of 3,390,000 francs. The Procureur-Général was unwilling to prosecute, and was replaced by M. Tanon, who applied to the Chambers for leave to prosecute five Senators and five Deputies. Of the persons inculpated five had been members of former ministries, one had been Governor-General of Algeria, another Prefect of the Seine. A criminal investigation had already been opened against Charles de Lesseps, Marius Fontane, and Henri Cottu, directors of the company, and Sans Leroy, an ex-Deputy. The accused Deputies were Emmanuel Arène, Dugué de la Fauconnerie, Antonin Proust, Jules Roche, and Rouvier, who had retired from the Ministry of Finance a few weeks before. The impugned Senators were Béral, Albert Grévy, Léon Reault, Devès, and Thévenet. Dugué de la Fauconnerie was a Bonapartist, the others all Republicans.

At the beginning of the judicial investigation of the cases against the directors, in January, 1893, Charles de Lesseps made a clean breast of his transactions, acknowledging that he had submitted to the extortions of Reinach, Balthaut, and other blackmailers, winked at the fictitious syndicates under cover of which they worked, and connived at the bribery of the press and the corruption of Deputies and Senators. He absolved his fellow-directors from all responsibility, saying that they had acted only under his directions. During the trial the police made great

efforts to arrest one Arton, an intermediary between Reinach and the bribe-takers, who had shown a list containing the names of 172 legislators and public functionaries, 104 of them Deputies and Senators, who were said to have received bribes. Dr. Cornelius Herz, an American citizen, distinguished as an electrician, who had been intimate with Boulanger and other eminent Frenchmen, was believed to have been deeply involved in the business, and an application was made for his extradition from England, which was refused. Ex-Minister Rouvier, who had resigned the portfolio of Finance as soon as the scandal first came out on the death of Reinach, defended in the Chamber the act of taking 50,000 francs of Panama money when there was no appropriation available for combating the enemies who sought to destroy the republic, and he was compelled to apply to his friends for aid, as "any statesman worthy of the name" would have done.

The examining magistrate absolved from accusation ex-Ministers Jules Roche and Thévenet and Deputy Emmanuel Arène. True bills for bribery and corruption were found against Charles de Lesseps, Fontane, Blondin, and Arton, and against Senator Béral, Deputies Dugué de la Fauconnerie and Proust, and ex-Deputies Balthaut, Sans Leroy, and Gobron. Ex-Deputy Pesson, whose name was found on Reinach's list, had died, and ex-Deputy Le Guay was in prison on another charge. Barbe, the former Minister of Agriculture, who was set down on the list for 450,000 francs, was also dead.

The trial of the directors and Eiffel on the charge of fraud was concluded on Feb. 9. Ferdinand de Lesseps, who was a paralytic, unable to appear at the trial, was sentenced to five years' imprisonment and a fine of 3,000 francs; his son received the same sentence, and Fontane and Cottu were sentenced to two years' imprisonment and 3,000 francs fine. Gustave Eiffel was convicted of breach of trust, having, after receiving 120,000,000 francs for the construction of 10 locks, which were to be completed before 1890, taken no steps to fulfill his contract before the collapse of the company. He was sentenced to imprisonment for five years and a fine of 20,000 francs. The day before these severe sentences were pronounced Godfrey Cavaignac delivered a speech, which the Chamber acclaimed as the expression of its views and ordered to be placarded throughout France, in introducing a resolution "to sustain the Government in the repression of all acts of corruption and to prevent the recurrence of governmental practices which it reprehends." This resolution, though implying a stricture on the Government for having neglected to bring to light all the facts regarding the bribery of members and the secret relations of former ministers and the Panama corruptionists, was accepted by M. Ribot to avoid a defeat. In his speech Cavaignac dwelt on the spectacle of a minister accepting money for bringing in a bill, the unsuspected activity in French politics of international financial agents, the distribution of large sums for illusory advertising, marking as "damaged merchandise" the press which was looked upon as the guardian of French liberties, the phenomenon of men of social position re-

ceiving enormous sums under the pretense of a syndicate, and especially the allegation that 104 members of Parliament had been bribed, which was allowed to go unchallenged, and the doctrines that had been propounded that it was a necessary feature of French politics that "financiers should now and then offer their alms and gifts to the Government, or that leading statesmen should interfere with the distribution of the funds of financial corporations for state reasons."

The bribery trial began on March 8. Baïhaut had made a confession, as well as Lesseps and Fontane, but he asserted that the temptation had come from them. Blondin had acted as go-between. Sans Leroy, whose change of vote had carried the lottery bill after M. Cantagrel had refused a bribe of 500,000 francs, and who was found to have deposited 200,000 francs in the bank immediately afterward, and was on Reinach's list as the recipient of a check for 300,000 francs, offered to show that the deposits represented his wife's dowry. Gobron offered to show that the check for 20,000 francs in his name was payment for shares in a tanning company. Proust, who at first denied having any relations with Reinach, claimed that the 25,000 francs paid to him represented his profits in the syndicate. Dugué de la Fauconnerie explained the receipt of the same amount in the same way. Senator Béral, who made a speech in favor of the lottery bill and received 40,000 francs, asserted that he had inspected Russian mines for Baron Reinach. On the third day of the trial Madame Cottu appeared and testified that immediately after her husband's arrest, in December, the director of the detective department, M. Soinoury, had sent for her and intimated that the proceedings against Cottu would be dropped if he would only furnish documentary evidence implicating some member of the Right in the scandal. The police official did not deny that he had sought to obtain from Madame Cottu such evidence, but declared that he had acted on his own authority and had held out no promises. Minister Rouvier came into court to deny with indignation that he had connived in such proceedings, and on the same day, not wishing the suspicion of an act that would be contrary to his honor to remain, he resigned his portfolio. On March 13 independent Republicans interpellated the Government, demanding a full explanation of the incident, and M. Bourgeois declared that the Minister of the Interior, M. Loubet, had granted the police official leave to receive Madame Cottu and allow her to visit her husband, supposing that she had requested it, and intimated that the woman and her Royalist friends had planned to entrap the Government. After a stormy sitting the Chamber passed a vote of confidence, and enabled M. Bourgeois to resume the portfolio of Justice, by a vote of 297 to 228, thus defeating a coalition of the Left Center, part of the Moderate Left, the Boulangists, and the members of the Right who had rallied to the republic, whose success would have led to the transfer of power from the Radical Left to Conservative Republicans who had accepted M. Cavaignac as their leader.

The jury on March 21 found Charles de Lesseps guilty, with extenuating circumstances, and

he was sentenced to one year's imprisonment, to run concurrently with his other sentence. Blondin was found guilty, with extenuating circumstances, and was sentenced for two years. Baïhaut, in whose case no extenuating circumstances were found, was sentenced to serve for five years, with civic degradation, to pay a fine of 750,000 francs, while the three were ordered jointly to pay to the liquidator the 375,000 francs received by Baïhaut. Fontane, Gobron, Béral, Dugué de la Fauconnerie, Sans Leroy, and Proust were acquitted.

On June 15 the Court of Cassation quashed the judgment in the first trial on the ground that the acts had been committed more than three years before the institution of proceedings, reversing the ruling of the trial court that a preliminary investigation begun in 1891 suspended the three years' prescription. Fontane and Eiffel were set at liberty, but Charles de Lesseps had still to serve out the sentence for corruption.

The name of the beneficiary of a check for 500,000 francs, who was also the payee of others, had been obliterated from the counterfoils which furnished the incriminating evidence on which the bribery trial was brought when the documents fell into the hands of the police. M. Andrieux, ex-Prefect of Police, who had been instrumental in first bringing the scandal to light in the interest of the Boulangists, knew this name and many other secrets which he would not divulge.

**Expulsion of Foreign Journalists.**—On Jan. 15 M. Ribot ordered the arrest and expulsion from France of M. Selecky, who as correspondent of the "Hirlap," of Buda-Pesth, had repeated the rumor that Baron Mohrenheim, the Russian ambassador, had received Panama money. Richard Alt, correspondent of the "Corriere," of Naples, and a German correspondent named Weddell, received notice to quit the country. On March 28 Otto Brandes, correspondent of the Berlin "Tageblatt," left Paris in obedience to a decree of expulsion. He had reproduced a story implicating Ernest Carnot, son of the President of the republic, in the Panama bribery scandal, and when his family were on the way to the station at Asnières they were hooted by the populace.

**Reconstruction of the Ribot Cabinet.**—The Panama revelations made necessary the elimination from the Cabinet of the two members who had endeavored to prevent the scandal by intervening between Reinach and Herz. Rouvier had resigned at once, in December, 1892. M. de Freycinet, whose great work of military reorganization had made him an indispensable Minister of War in many successive governments, could not step out so easily. Before the reassembly of the Chambers a reformation of the Cabinet involving his retirement and that of Loubet, who was known to be opposed to the trials, was seen to be requisite to reassure the public of the earnestness of the Panama prosecutions, and on Jan. 10 Premier Ribot announced to President Carnot the collective resignation of the ministers, and was intrusted with the task of reconstruction. The new Cabinet was announced on the 12th, as follows: Premier and Minister of the Interior, A. Félix J. Ribot; Minister of Foreign Affairs, Jules Develle; Minister of Finance, Pierre Emmanuel Tirard; Minister



of Justice, Léon Bourgeois; Minister of War, Gen. J. L. Loizillon; Minister of Education, Charles Dupuy; Minister of Agriculture, Albert Viger; Minister of Commerce, Jules Siegfried; Minister of Public Works, François Viette. The Ministry of Marine and the Colonies, which M. Burdeau had refused to resume and Admiral Gervais to take, was accepted by Admiral Rieunier, being thus transmuted from a political office, as well as the War Ministry, and like it restored to professional management.

The Chamber met on the same day, and Floquet, who was also involved in the Panama affair, offered himself for re-election as president, but withdrew his name when he saw that he would be defeated. Casimir Perier was elected. The Government, which made no fresh declaration, carried the order of the day by 320 votes, including 27 from the Constitutional Right, otherwise called the Rallied or Catholic Republicans, led by Robert Mitchell and M. Piou, against 187 votes given by 91 Reactionaries, 31 Boulangists, and 65 Radicals and Socialists. M. Tirard carried a measure permitting the Bank of France, which was reduced to the necessity of paying out coin, to increase its note circulation from 3,500,000,000 to 4,000,000,000 francs. A bourse tax was proposed in the form of a stamp duty of 10 centimes per 1,000 francs, or  $\frac{1}{100}$  of 1 per cent. on all transactions except purchases for cash. This tax, calculated to produce 12,000,000 francs a year, and a higher tax on alcohol, were necessary to meet the deficit caused by the repeal of duties on wine, beer, and cider. Robert Mitchell's proposal of a tax of 20 francs on liveried servants, though condemned by the budget committee, was approved by the Chamber. A law was enacted for the suppression of anarchistic publications. Another gives magistrates summary jurisdiction in cases of attacks in the press on foreign sovereigns and ambassadors. An amendment to include attacks on the President of the republic, suggested by foolish attempts of the Opposition press to implicate M. Carnot in the Panama scandal, because, as Minister of Finance, he signed Bihaut's bill for a lottery loan in 1886, was withdrawn at the request of M. Ribot. The Boulangists, who were supposed to be financially aided by the Monarchists, and who first stirred up the Panama scandal in the hope of forcing the President as well as the ministers to resign and bringing on a revolution, attacked the savings banks in pursuance of this plan, publishing warnings against confiding savings to the care of a government of thieves. The Bonapartist press joined in the assault on the credit of the savings banks, which have 3,900,000,000 francs of deposits, mostly invested in *rentes*. These tactics naturally caused a run on the banks, and drove the Government to depart once more from the party standpoint regarding the liberty of the press, and bring in a bill making incitement to the withdrawal of savings-bank deposits punishable with two years' imprisonment and a fine of 1,000 to 20,000 francs, like corners in articles of food, in order to avert a disastrous run that might occur should the conditions of a real panic be present. The bill was passed by a vote of 327 to 128. On Feb. 16 the Radical Opposition and Boulangists called the ministry to account on the

charge of allowing an alliance of the Conservative Republicans, based on the support of the clergy and financiers, to undermine its position, with the object of changing the educational, military, and financial policy of the country, and also of shielding guilty politicians implicated in the Panama scandal. The Government was sustained in a vote of confidence by 315 Deputies against 186. On the retirement of M. Le Royer from the presidency of the Senate, on account of failing health, Jules Ferry, the advocate of Conservative Republicanism, whom the Radicals, under cover of the Tonquin losses, had hunted from public life and subjected to the execration of the masses, was elected in his stead. On assuming the office, Feb. 27, he spoke of this vindication, which put an end to a long ordeal, as deciding "that ostracism should have no place in our liberal and tolerant democracy." In less than a month Ferry died, and Challemel-Lacour was elected to the post. A conflict between the Senate and the House of Deputies over an amendment to the liquor law imposing a new tax on spirits brought about the fall of the Ribot Cabinet only a week after it had been upheld by 314 Deputies against 200 on Lucien Millevoye's motion in favor of a dissolution based on the course of the Government in the Panama business. The Chamber had attached to the budget a rider relating to the form of the liquor law, and one for the taxation of bourse transactions which the Senate had stricken out on the ground that they ought to form the substance of separate bills. The Cabinet, compelled to take one side or the other in the dispute, preferring to fall by an adverse vote in the Lower House on a budget question to being overturned sooner or later as a result of its proceedings in the Panama cases, was defeated, March 30, by 247 votes against 242. The ministry resigned, and M. Carnot sent for M. Méline, author of the protective tariff. He was unable to obtain the co-operation of M. Peytral or M. M. Poincaré, to whom he offered in turn the portfolio of Finance, and gave up the task, which Charles Dupuy then undertook, with better success.

**The Dupuy Cabinet.**—The Cabinet was gazetted on April 4 as follows: Premier and Minister of the Interior, Charles Dupuy; Minister of Foreign Affairs, Jules Develle; Minister of Finance, Paul Louis Peytral; Minister of Justice, Eugène Guérin; Minister of Instruction, Raymond Poincaré; Minister of War, Gen. Loizillon; Minister of Marine and the Colonies, Admiral Rieunier; Minister of Commerce, Louis Terrier; Minister of Public Works, François Viette; Minister of Agriculture, Albert Viger. The only members of the preceding Cabinet who had a reputation as statesmen—Ribot, Tirard, and Bourgeois—were replaced by untried men in this Cabinet, presided over by a man who never held a Cabinet office till he entered the Ribot Cabinet as Minister of Education.

M. Dupuy, in the ministerial declaration, said that the profound tranquillity of the country gave proof that the painful incidents of the last few months, despite certain efforts to make political capital out of them, have not injured the vigorous growth of the republic or the country's traditional reputation for probity and honor. One lesson issuing from the ordeals had sunk

into the national conscience—that is, that “ease and fortune are acquired only by work, and are preserved only by correct morals and a worthy life.”

The question of the separation of the liquor tax from the budget, which served as a pretext for the overthrow of the Ribot Cabinet, was made a Cabinet question by the new Cabinet also, and the Chamber now voted what they had before refused. The bourse tax was passed in a separate bill, as was the bill to repeal the duties on wine, beer, and cider and increase the spirit duties. Owing to short crops of fodder caused by drought, the import duties on hay and oats were suspended and those on barley and maize reduced by one half for six months from June 30. A public-health bill renders vaccination compulsory in infancy and in the tenth and twenty-fifth years, whereas before it was only compulsory in the case of children entering the public schools. A bill based on the report of the Panama committee of investigation appointed by the Chamber before judicial proceedings were instituted gave special facilities to civil suits against the directors, the contractors who pocketed 25 to 50 per cent. profits, and others chargeable with the division of the money contributed by the Panama shareholders and bondholders. In the report, M. Floquet, who wanted to know whether the enormous advertising fund was used to aid the Boulangists in the elections of 1889, and M. de Freycinet were exonerated, but Rouvier was blamed for accepting private money for public purposes. The Chamber passed a bill for the abolition of *octroi* duties on articles of food and drink brought into towns. A bill was passed to tax bicycles 10 francs a year, and another imposing an internal-revenue duty of 5 francs on pianos. The legal existence of the next Chamber was extended to May 31, 1898, in order that the general election may be held in the spring, which is a more convenient time than autumn.

A number of bills were brought forward in the Chamber with the object of checking the increase of the foreign population, which has doubled in numbers in thirty years, while the native population has remained stationary. Since 1851 the Belgians have increased from 120,000 to 465,860, the Italians from 63,307 to 286,042, the Germans from 67,000 to 100,000, the British from 20,000 to 39,687, the Spaniards from 30,000 to 80,000, the Swiss from 25,485 to 83,117, the Dutch from 13,000 to more than 40,000, the Americans from 5,000 to nearly 12,000, including 4,800 from southern countries. The birth rate among foreigners is 11·39 per cent., while it is 1·92 per cent. among French people. A large proportion of the counterfeiters, murderers, and other classes of criminals are aliens. Foreigners are also a heavy charge on the poor funds, the municipality of Paris spending 8,000,000 francs annually in relieving indigent foreigners. Of 180,000 alien residents of Paris not over 16,000 have independent means of support; there were 1,130,211 in France altogether in 1891; these, with the exception of 65,665 who live on their incomes, while exempt from military service, underbid native labor, and absorb 1,000,000,000 francs in wages annually, one sixth of which is taken out of the country

by those who return to their own land. These were the motives of the bill that was passed by both houses, which requires a foreigner coming to France for the purpose of carrying on a trade, profession, or industry to send within a week a declaration to the mayor, accompanied by proofs of his identity, on which he receives a certificate. If he removes to another place he must have this certificate indorsed within two days. By neglect or refusal to obey the law or for a false declaration a fine of 50 to 200 francs is incurred, with or without permanent exclusion; and if an expelled foreigner returns without permission he may be punished with imprisonment from one to six months, followed by expulsion. Another bill gives an alien born in France of a French mother the option of embracing either French or foreign nationality at his majority, but empowers the Government to withhold French nationality from persons deemed unworthy, subject to appeal to the Council of State. A resolution passed just before the close of the session, on July 23, provides that a bill that has passed the Chamber prior to a dissolution may be sent up to the Senate by the new Chamber if that is the wish of at least 40 Deputies.

**The “Cocarde” Forgeries.**—A professional swindler and forger, who went by the name of Norton, playing upon the passion for vilification displayed by the Boulangists, offered to sell to the editor of the “Cocarde” copies of a secret correspondence proving prominent French politicians to be guilty of treason, which as a clerk in the British embassy he had had an opportunity to copy. Norton was a mulatto, the son of a negro of Mauritius, and pretended to be actuated by hatred of England. Edouard Dueret, the editor, with the aid of money furnished by the Marquis de Morès, paid 10,000 francs as an installment of the 25,000 francs demanded, and after getting hold of the papers, on June 21, announced in the “Cocarde” that he had become the possessor of important documents stolen from the British embassy, patriotism impelling him to become a party to the theft. The documents had been shown to M. Dupuy and M. Develle, and for a day or two they believed them to be genuine; but they had convinced themselves of the fraud before M. Millevoye, on June 22, interpellated the Government on the article in the “Cocarde.” The Boulangist Deputy began his speech with a scornful denunciation of M. Clémenceau, whom he and M. Déroulède had scored three days before on account of his relations to Herz and heaped insults upon amid the plaudits of the Chamber. Now the Chamber jeered M. Millevoye till he was stung into reading, contrary to his promise to the ministers, French translations of the forged documents. These were pretended letters from Sir Thomas V. Lister, of the British Foreign Office, to Austin Lee, of the British embassy in Paris, written in a clumsy colloquial style, and containing a jumble of ignorant allusions to international affairs and French politics interspersed with names of French politicians spoken of as hired spies and intriguers. There was also a list of bribes purporting to have been paid out by the English Government, in which the “Journal des Débats” was set down for £2,000, M. Burdeau for £2,000, M. Rochefort for £3,000, M. Edwards for £1,500,



and M. Clémenceau for £20,000. When he had read this M. Millevoye was hooted down, and the Chamber, by 389 votes to 4, passed to the order of the day, "stigmatizing the odious and ridiculous calumnies brought forward at the tribune, and regretting to have wasted the time of the country for a whole sitting." Millevoye and Déroulède, whom M. Develle described as victims of an abominable mystification, left the Chamber in dudgeon, announcing the resignation of their seats. Norton and Dueret were tried in August under the press law for publishing false news and fabricated documents, and were sentenced, the forger to three years' imprisonment and the editor for one year.

**The Labor Exchange.**—M. Dupuy as Minister of the Interior pursued a more repressive policy toward Labor agitators than his predecessors, thereby inviting the hostility of the Parisian populace. On May day the Government closed the Labor Exchange, the hall erected at public expense as a general employment bureau and meeting-place for trade unions in Paris. M. Baudin, one of the most prominent Labor leaders, attempted to make a violent speech on the steps, and was stopped by the police after a struggle. Leave was asked of the Chamber to prosecute him, which was granted by 250 votes to 191, and he was convicted of disorderly conduct and sentenced. The Municipal Council having voted 50,000 francs toward supporting the Labor Exchange, double the subvention of the previous year, the Government vetoed the grant, and refused to allow the trade unions to receive public money unless they complied with the act of 1884 requiring societies to register a copy of their rules and list of members. The Radicals demanded to know why religious congregations were not registered; the Catholics, why Freemason lodges were not. Some of the unions obeyed the Government decree. The majority did not, and were given a month to submit; otherwise the Exchange would be closed. The Municipal Council upheld its vote, but the prefect of the Seine would not allow money to be paid to the Labor Exchange after July 1. A vote of 10,000 francs to the cabmen on strike was also vetoed. The officers of the Labor Exchange protested against the dissolution of the trades unions by administrative authority, claiming that under the statutes of incorporation, and under the act of 1884 itself, judicial authority alone had the power. The question was afterward judicially determined, and the court fined the recalcitrant unions, and ordered the dissolution of these and of the executive committee of the Labor Exchange unless they registered, which they eventually did.

**Riots in Paris.**—Senator Berenger, the author of an act whereby sentence is suspended in the case of any person convicted of a first offense, carried through Parliament a bill to check licentiousness and indecent exhibitions, and after it became law watched its execution and interpellated the Government when the police were remiss. The art students in their annual "*bal de quatr'-z-arts*," in which models masquerade in artistic pageants, took pains, out of contempt for Berenger's crusade, to have the costumes more startlingly immodest than usual. Although it was a private entertainment, attended only by

artists and their friends on invitation, the Government, spurred on by Senator Berenger, instituted proceedings against the managers of the ball and the models who had shown themselves half naked. They were condemned, and the students of the Latin Quarter broke forth in noisy demonstrations. When the police tried to stop them they resisted, and annoyed and exasperated the police. On July 1 the police were for a time powerless to quell a riotous disturbance near the Sorbonne, and when at last they gained the upper hand and proceeded to clear the streets and *cafés*, a young man named Nuger was struck on the back of the head by a matchbox thrown by a policeman, and so injured that on the following morning he died. This aroused the quarter to the highest pitch of excitement. A deputation of students went around to several Deputies to ask them to interpellate the Government. M. Millerand undertook to present the case against the police. He made the most of the facts in arguing for a resolution expressing confidence in the Government, but condemning practices introduced at the prefecture of police. Crowds of students thronged the place in front of the Chamber, who in their meetings had called for the resignation of M. Lozé, the prefect, or of the Prime Minister. The Chamber passed without a count of votes a resolution to rely on the purpose of the Government to ascertain where the responsibility lay for the deplorable events. After that the disturbances were renewed. Students hissed the police, smashed the windows of the Prefecture and the Palais de Justice, and tore down kiosks and lamp posts. In the Place St. Michel they overcame a platoon of police that made a charge, and belabored them with their own swords wrenched out of their hands, wounding some so that they were taken to the hospital.

The police had betrayed such want of discipline and fortitude, and committed so many outrages besides the homicide of Nuger, that the citizens of Paris were generally incensed. The Radical and Socialistic majority that sided with the municipality in its quarrel with the Prefecture was inclined to seize the opportunity to gain a political advantage and make the most of the blunders and excesses of the police to advance the cause of the commune against the Government. In the first serious collision the students were led or encouraged by more experienced disturbers, and after it occurred excited mobs filled the streets, while the students began to retire from the contest that they had stirred up, and their committees placarded manifestoes recommending them to cease demonstrating and to remain quiet on the occasion of Nuger's funeral. When the Parisian mob took up the combat and the throngs in the streets increased, the police took harsher and rougher measures to maintain their authority, and arrested and injured on-lookers as well as disturbers. A procession that was marching late at night to the Ministry of the Interior was stopped in the Faubourg St. Honoré and driven back to the boulevards, after a fierce struggle in which upward of 100 persons received bodily injuries. Policemen who patrolled the streets singly or in squads were pelted and maltreated. By early morning on July 4 a vast concourse was assembled round the Charité

Hospital where Nûger's corpse lay. The students came in a body with banners and funeral wreaths. The mounted Republican guards, who were cheered, maintained order where the police were powerless. When they were hissed the police entered the hospital and arrested some of the doctors. This caused a tumult and a serious collision, in which 12 persons were hurt badly and taken into the hospital. After the place was cleared a large crowd proceeded to the Place St. Germain des Prés. The police attempted to disperse them, and after several ineffectual charges the cavalry rode at the crowd, pressing the people back or driving them to the sidewalks. The mounted guards charged repeatedly, and the demonstrators, many of whom were trampled, finding that they had no chance, stopped the street cars, omnibuses, cabs, and carriages that were passing along the boulevard, and, after the passengers had descended, overturned them to build a barricade across the boulevard, by which the horsemen were checked completely. A similar conflict took place later at the corner of the Rue de Buci and the Rue de Seine, and there also vehicles were used by the rioters to make a barricade. When the municipal guards gained possession of the Boulevard St. Michel and other streets of the Latin Quarter the lamp posts were lying on the ground, the kiosks burned, many of the shops, which remained closed, were damaged. A mob erected barricades in the Luxembourg Gardens, and after they were removed by infantry and the boulevard cleared by a charge of cavalry, they returned and built one still stronger of seats and the timber of kiosks, started bonfires to scare the horses, and held the passage for some time against the soldiers. During the day the rioters threw up barricades of street cars, omnibuses, and paving stones in the Rue St. Michel and other streets, and held the whole district between the Rue St. Germain, the Rue de Seine, and the river, which presented the appearance of a city taken by storm. In attempting to rush across the bridge to the Boulevard du Palais they were met and driven back by cavalry, and many students and others were trampled, and many horsemen hit by flying stones. Gen. Saussier, the military governor, strengthened the garrison with several regiments drawn from the provinces, and prepared to send out the troops, if necessary, but he was reluctant, because the soldiers or the officers could not be trusted to fight the people. M. de Freycinet, in his efforts to secure a homogeneous army, had given Republican officers to regiments recruited from the Royalist departments, and placed aristocratic officers over Democratic regiments. There were several instances of insubordination on the part of officers who were ordered to attack the rioters. The military drove away the people who had congregated about the Labor Exchange. The workmen, several thousand strong, had planned to stay in the building all night, to prevent the Government from closing it, but it was occupied by soldiers. There was a sanguinary encounter in the Rue des Écoles, where the Republican Guard charged on the mob with drawn swords and the police opened fire with revolvers. Several conflicts occurred in the neighborhood of the markets between the police and men out of

work. During the day several policemen were thrown into the river and drowned.

In the Chamber the Radicals proposed to discuss the riots, and when the Prime Minister refused to allow debate or answer questions until the disturbances were completely suppressed, a wild uproar followed. Finally the Chamber agreed to postpone discussion for three days by 377 votes to 133. The riots had nearly run their course before the morning of July 5, and the more energetic and determined method pursued by the police checked all attempts to renew them. The street cars and omnibuses were not allowed to run, and the *cafés* were closed. An attempt to barricade the Rue Cujas was frustrated. There was a fight in the Rue des Écoles, but no students were engaged in it, for they had publicly repudiated any further alliance with the disorderly element. In the evening there was fighting in the St. Michel Quarter and in the neighborhood of the Labor Exchange, and the demonstrators were getting the best of it, when the military came to the rescue of the police. On July 6 the Government closed the Labor Exchange. There was no more rioting.

The Government was charged in the Chamber with fomenting civil war, and the impeachment of the Prime Minister was called for. The whole Right voted with the Moderates to uphold the Government by a vote of confidence. The Radicals then brought up the question of religious congregations, and, after the ministry had obtained another crushing vote of confidence, demanded that they should be allowed to interpellate the Government on the legal position of religious bodies, carrying with them a large part of the Republicans. M. Peytral interpreted the small majority of 26 as an indication that the ministers had lost the confidence of the Republicans, and handed in his resignation lest he should be accounted a "prisoner of the Right." He was induced to remain, but only on condition that M. Lozé, who had been prefect for seven years, should be retired. On July 11 Louis Lépine was appointed prefect of police. M. Lozé in November was appointed ambassador to Austria-Hungary, succeeding M. Decrais, who was transferred to London to fill the place made vacant by the retirement of M. Waddington.

**General Election.**—In the electoral campaign M. Dupuy upheld the policy of Republican concentration, the kind of opportunism that has prevailed since the defeat of the reactionary *coup d'état* in 1875, whereby Moderates govern by means of concessions to the Radicals. The programme of the Prime Minister embraced labor legislation which would temper with humanity the harshness of economic laws, fiscal reforms proportioning the burdens of taxpayers to their means, and a law on association to regulate the relations of civil and religious society in a spirit of tolerance. Ex-Premier Goblet took the lead of a Socialist-Radical party designed to supplant the Opportunists and carry out the principles of legislation on which Radicals and Socialists agree, such as a progressive income tax, a new body of labor laws, including the eight-hour working day and a superannuation fund, decentralization of authority, purchase of railroads by the state, liberty of association with



restrictive clauses against religious associations, home rule for Paris, revision of the Constitution curtailing the powers of the Senate, and gradual separation of church and state. Constans, whom M. Carnot persistently declined to restore to power, advocated a broad, tolerant, conservative, pacific republic, in which the ideas of the Right on labor questions, religious liberty, and the like should prevail over those of the Radicals. Léon Say looked forward to the assumption of power by Conservatives rallied to the Constitution, which is now badly worked by unfit and inefficient hands. Piou, as spokesman of the Rallied, called for a national union for the support of an honest, tolerant, and open republic, administered not by the political oligarchy then in power but by better men and other methods; advocated a religious peace secured by making religious education optional in the primary as in the secondary schools, and limiting the military service of seminarists to surgical and ambulance training; and suggested concessions to Socialism as the only bar to subversive doctrines. Cardinal Lecot deprecated useless protests against the educational and conscription laws, which the five French cardinals had declared in 1892 that the Catholics would never accept. M. d'Haussonville, in March, had drawn from the Comte de Paris a proclamation denouncing the Government as corrupt and weak, lacking courage to resist socialism, or power to preserve order, or authority to defend a national policy abroad, and calling on all upright men to join the Royalists. Now the leader of the Royalists, confounded by the acceptance of the republic by all the influential Churchmen, was at a loss for a cry or a programme, being left almost without a party. The Bishop of Séez and a few other irreconcilable clericals, who pretended that the Pope approved only a Catholic republic for France, and the Comte d'Haussonville, the Duc de Broglie, Paul de Cassagnac, and the rest of the Monarchists, were rebuked by the Pope in a letter to Cardinal Lécot, Archbishop of Bordeaux, in which the pontiff spoke of the absurd pretensions of some men who boast that they have more solicitude for the Church than the Pope, and arrogate to themselves the right of speaking in its name "against the teachings, instructions, and precepts of the protector and head of the Church." Casimir Périer advocated a fairer division of taxes, and such extension of institutions for the public relief of the poor as will abolish misery. Peytral, the Radical Minister of Finance, proposed an income tax and a progressive succession duty graduated according to the amount of the inheritance and the degree of relationship. Yves Guyot, once a Socialist Radical himself, opposed as a Moderate candidate the views of René Goblet. The bitterest contest took place in the Var, where the multifarious enemies of Clémenceau endeavored by every trick and device to unseat him, especially by representing him as a secret friend of England and an opponent of the Russian alliance.

The election took place on Aug. 20 and the balloting on Sept. 3. M. Clémenceau was defeated; so was ex-Premier Floquet, a victim of the Panama scandal; so, after a fierce campaign, was Paul de Cassagnac, the uncompromising foe of the republic; and so were M. Piou, the leader

of the Rallied, and the Comte de Mun, the eloquent expounder of Catholic socialism. Most of the orators who had a reputation in the last Chamber lost their elections. Goblet, in one of the commercial districts of Paris, triumphed over Yves Guyot. M. Wilson, who disappeared from public life in consequence of the scandal over the sale of decorations, obtained a seat. Neither M. Millevoye nor Paul Déroulède was a candidate. The Boulangist faction almost disappeared. A good number of the Rallied lost their seats, their constituents preferring more tried and trusted Republicans. The Socialist leader, Jules Guesde, was elected, while Drumont, the anti-Semite leader, was defeated.

The new Chamber contains 581 Deputies, or 3 fewer than the last, there having been a decrease in population in certain departments. The Moderate Republicans and the Socialists gained at the expense of the other parties. In the new Chamber there were some 292 regular supporters of the Government, ranging from Moderate Republicans to Advanced Radicals; 187 Socialists, Socialist Radicals, and Revolutionaries; 35 Rallied Conservatives; 58 members of the various reactionary factions; and 29 independents.

**Visit of the Russian Fleet.**—The Russian squadron destined for the Mediterranean entered the naval harbor of Toulon on Oct. 13, to return the visit of the French fleet at Cronstadt in 1891. This return demonstration had been delayed so long that political observers were convinced that the Franco-Russian *entente* went no further than a temporary understanding limited to mutual diplomatic support, as evinced in Egypt, Bulgaria, and China. The visit paid by the Russian grand dukes to M. Carnot at Nancy dispelled the suspicion that the Czar had decided to draw back from the *rapprochement*; yet a military alliance between the Czar and a republic built upon a fallen monarchy, in which open sympathizers with Russian revolutionists have often had a voice, an alliance, too, that might compel France to aid in establishing Russia as a Mediterranean power, seemed to conservative thinkers impossible. The Czar seemed, indeed, to be reluctant to run the risks of a public reception of his officers in France, which might be marred by hostile revolutionary demonstrations against himself, or, more likely, by a Chauvinistic exhibition of the passion for *la revanche* which would lead to a misconstruction of his pacific policy. After many cautions on his part and reassurances from the French Government he gave orders to the Russian fleet to repair to Toulon. Immediately after the arrival of the ships President Carnot sent a message of warm thanks, to which the Czar replied in terms that seemed too cold to bear out the supposition of an alliance. Two French ships had been sent to Copenhagen, where the Czar was visiting, to convey the compliments of the French navy, and when the Czar not only went on board the "Isly," but ordered a salute to be fired by the imperial yacht, the newspapers of Europe noted the departure from his previous reserve. Chancellor Caprivi had already accepted the Russo-French understanding as the manifestation of an existing state of things, an indication of the establishment of "a European equilibrium such as formerly existed." The organ of Prince Bismarck, the Hamburg "Nach-

richten," explained that "the triple alliance as such does not threaten Russia or her policy, but as soon as a suspicion arises that its influence is to be exercised for the defense of England's anti-Russian interests, Russia's resentment is aroused." The naval and municipal entertainments that were prepared for the Russians at Toulon were magnificent. The city, decked with Russian and French flags, was filled with enthusiastic visitors from every part of France. The Russians received addresses of welcome from public bodies of every sort, all inspired with the discreet propriety that marked the speeches of President Carnot and Admiral Rieunier. The articles of the press dwelt effusively on the friendship of the two nations, the end of the long isolation, and the power of the new league, which gave France again a weighty voice in European affairs and was a guarantee of a long peace, and mentioned war only as a remote and dreaded contingency. Admiral Avellan, the Russian commander, and 60 of his officers, were conducted to Paris by President Carnot and M. Humbert, the President of the Municipal Council, who once had been a galley slave at Toulon as a convicted Communist, and had made himself conspicuous as a eulogist of the Nihilist murderers of Alexander II. There they were fêted with a round of balls, dinners, luncheons, illuminations and fireworks, a torchlight procession, a gala performance at the opera, and everywhere in the lavishly decorated city, which stopped its ordinary business to welcome them, were greeted with exuberant manifestations of popular friendship and delight, to which they responded with equal enthusiasm. Returning to Toulon loaded with presents, they witnessed the launch of the "Jauréguiberry" on Oct. 27, and then sailed away. The organs of public opinion in Russia reflected a popular delight over the French alliance scarcely less enthusiastic than that of France. The Czar, whose misgivings were banished by the unanimous welcome of the Russian officers by all classes and parties of Frenchmen, from Socialists to Royalists, sent the following dispatch to President Carnot:

At the moment when the Russian squadron is quitting France I am anxious to express to you how much I am touched by and grateful for the warm and splendid reception which our sailors have everywhere found on French soil. The testimonies of warm sympathy which have been once more manifested with so much eloquence will add a fresh link to those already uniting the two countries, and will contribute, I hope, to the strengthening of the general peace—the object of their efforts and of their most constant wishes.

To this M. Carnot replied as follows:

The telegram, for which I thank your Majesty, reached me at the moment I was leaving Toulon in order to return to Paris, after visiting the fine squadron on which I had the warm satisfaction of saluting the Russian flag in French waters. The cordial and spontaneous welcome which your brave sailors have everywhere met with in France signally affirms once more the sincere sympathies uniting our two countries. It marks at the same time a profound faith in the beneficial influence which can be exerted together by two great nations devoted to the cause of peace.

The French Government extended to the new Russian squadron the privilege of using all the

facilities of the French naval harbors in the Mediterranean, and the officers of every harbor were ordered to perform any service for the Russians that they would for French ships. The effect of the *rapprochement* had been gradually to transfer the German investments in Russian securities to French hands. Owing to the financial support of the French people, who already held nearly 4,000,000,000 francs of Russian securities, the credit of Russia stood higher than ever, and the Russian Government was in possession of means to develop the military and naval systems and the resources of the country.

**The Cabinet of Casimir Périer.**—When the new Chamber met, on Nov. 14, Casimir Périer was again elected President. The Moderate and the Radical Republicans having both been strengthened and the Monarchists almost extinguished, there was a contest between the Radicals anxious to impose a progressive policy on the Government and the Moderates who wished to break with Radicalism and combine with the right. The Cabinet was not reorganized to suit either view, and clinging to Republican concentration put forth a programme containing no concessions to the Radicals. The result was a defeat on a vote of confidence. President Carnot summoned M. Raynal, who declined, and then M. Spuller, who attempted to form a Cabinet. He could not get together a homogeneous Cabinet without including M. Constans, who was obnoxious to M. Carnot, and on Nov. 30 gave way to M. Casimir Périer. After a week's interregnum the list was completed on Dec. 2, as follow: Prime Minister and Minister of Foreign Affairs, Casimir Périer; Minister of the Interior, David Caynal; Minister of Justice, M. Dubost; Minister of Finance, Auguste Burdeau; Minister of War, Gen. Mercier; Minister of Marine, Admiral Lefevre; Minister of Commerce, M. Marty; Minister of the Colonies, Théophile Deleassé; Minister of Public Instruction, Eugène Spuller; Minister of Agriculture, M. Viger; Minister of Public Works, M. Jourant. M. Dupuy was elected to succeed M. Casimir Périer as President of the Chamber of Deputies.

The new Premier in the ministerial declaration said that the country had shown by the elections its aversion both to reaction and socialism. Socialism the Government intended to combat by real reforms and the amelioration of the condition of the working classes, especially by a radical reform in the system of direct taxation, a remodeling the land laws, the creation of a pension fund for old and disabled workmen, and the organization by the Government of agricultural credit and insurance. On a socialist proposal for amnesty to political and strike offenders the ministry narrowly escaped a defeat, as 100 Deputies abstained from voting.

**Franco-Italian Labor Riots.**—The ancient city of Aigues-Mortes gives employment every summer to a considerable number of laborers in the salt marshes. The Italians are generally disliked in the south of France, as the Belgians are in the north, because they work for lower wages than the French laborers and will not join the labor unions. The French salt workers, for the most part a lawless set of vagabonds, felt this jealousy for the Italians who underbid them. On Aug. 17, after the men had been paid off and



were excited with drink, some Frenchmen maltreated an Italian whom they caught washing clothes in their drinking-water. The Italians retaliated, and a fight ensued, in which the Italians were driven out of town, and about 200 were besieged in a farmhouse until they were released by troops. There were 7 Italians and 1 Frenchman killed, and the wounded numbered about 40. The Prime Minister expressed regret to the Italian Government and suspended the Mayor of Aigues-Mortes, who had issued a proclamation urging the men to prove how well they had succeeded and how completely their demands were satisfied by ceasing from demonstrations and going quietly to work again. The incident was made the occasion in Italy of anti-French demonstrations by labor agitators hostile to the Government. In Rome they stoned the French embassy building, and the Government suspended the prefect and the chief of police for not preserving order when the disturbances were renewed two days later. In Naples, Milan, Turin, Como, and Bologna public demonstrations were made against the French. In Messina the escutcheon in front of the French consulate was torn down and burned. In Genoa, whither the wounded from Aigues-Mortes were taken, a mob destroyed the cars of a French street railroad company. The Italian Government took severe measures to repress the anti-French manifestations, and the newspapers of the country generally approved this action. Several persons were arrested at Aigues-Mortes who took part in the riot, and in Italy a great number of rioters were arrested. The good will shown by both governments removed all obstacles to a satisfactory termination of the incident.

**Coal Strike.**—The miners of the Pas de Calais and the Nord, deciding to make common cause with their fellow-workmen in England, went on strike in September, and persuaded a part of the Belgian miners to join in an international contest with the mine owners, such as had been discussed and recommended at the international miners' congresses. Deputy Basly and Jules Guesde assumed the lead in the movement. The demands were an increase of 10 per cent. in wages, making 7-15 francs a day the usual pay; the fixing of 5-50 francs as minimum wages; that no workman over forty years of age shall be discharged; and none shall be dismissed who has incurred the penalties of the law so long as the company is not a sufferer. In a local strike in the early part of the year some Belgian miners who took the strikers' places were hunted away by the French workmen. Now the Belgians, whose wages are lower than in France, after voting in a referendum in favor of a simultaneous strike, tried to act in harmony with the French miners, but only a third of the miners of the Borinage and Charleroi districts took part in the referendum and the subsequent strike, but later the strike became more general. In France the strike was sudden, general, and determined, except at Anzin, where a strike had recently been overcome and the unions driven out, and in the Loire. The men generally remained tranquil. If they had not, there was an abundant force of gendarmes and soldiers drafted by the Government into the mining districts to quell lawlessness. In Belgium the strikers gained

an increase of wages. In France they gained nothing, but suddenly decided to submit after remaining out for seven weeks, declaring that they must bow their necks to the despotism of capital, expecting no improvement in the worker's lot and cherishing no hope of justice save by social revolution.

**Anarchism.**—In May, 1893, the Paris police arrested a group of 5 anarchists, named Lévellé, Marchand, Vinchon, Bondon, and Spannagel, in whose possession were found bombs of the most dangerous kind, a large quantity of materials for explosive mixtures, and burglars' tools, with documents proving their connection with an association that defends theft as a means of propaganda by deeds. Others were arrested from time to time in various cities. On Nov. 14, a young anarchist named Leo Lanthier, a shoemaker out of work, stabbed a special envoy of Serbia, Georgevich, in a Paris restaurant, for no other reason than that, wearing good clothes and the decoration of the Legion of Honor, he seemed to be one of the hated *bourgeoisie*. On Nov. 15, some one managed to steal past the sentries, enter the house of Gen. Mathelin, commander of the Fifteenth Army Corps, in Marseilles, and deposit an infernal machine, which exploded with a terrific noise, tearing a hole through the walls, but killing no one. An unexploded bomb was found, which from its unscientific composition indicated that professional anarchists were not the authors of the crime. Some Italian workingmen were suspected and placed under arrest. The police of France and other countries were incited to vigilance at this time in response to suggestions of the Spanish Government. The French police, acting on the supposition that anarchism was an exotic growth, arrested Germans and other foreigners suspected of holding anarchistic opinions, and watched the Belgian frontier to intercept any foreign anarchists that might be seeking to escape from the Belgian police. In Marseilles three anarchist adepts—Bossy and his wife and Charregon—were arrested, and a tunnel was found dug beneath the street, in which were tubes and fuses and several kinds of highly explosive substances.

An infernal machine of clumsy construction was sent from Orleans addressed to Chancellor von Caprivi, probably by some German anarchist as a terroristic demonstration. On Dec. 9, Auguste Vaillant, who had obtained admission to the visitors' gallery in the House of Deputies, attempted to throw a bomb at M. Dupuy. A woman seized his arm, spoiling his aim, and the bomb, which was filled with nails and bits of iron, struck the cornice of the public gallery and exploded, wounding himself and many others in the galleries and 4 Deputies. After the explosion M. Dupuy immediately called the House to order, and business went on without interruption. On the following day the ministry brought in bills to modify the press law by making incitement to crime a felony, to forbid the association of enemies of society, and to increase the penalties for unlawful possession or manufacture of explosives.

**Algeria.**—This dependency is administered, as far as possible, as an extension of France. The head of the administration is a Governor-General. Jules Cambon has held the office since

April, 1891. There are 3 departments, each of which elects 1 Senator and 2 Deputies. To each is attached a military department, administered under the direction of the commandant of the Nineteenth Army Corps. The combined area of the departments of Algiers, Oran, and Constantine is 184,474 square miles, and the population in 1891 was 3,636,967 in the civil and 487,765 in the military departments. While the military jurisdiction is continually being extended farther into the desert, portions of the military territory are from time to time brought under civil jurisdiction and added to the civil departments. The total population in 1891 comprised 272,662 born or naturalized French people, 47,667 naturalized Algerian Jews, 3,567,223 indigenous French subjects, and small colonies of Tunisians, Moors, Spaniards, Italians, Maltese, and Germans. The public revenue is derived from direct taxes levied on the natives and from customs and *régie*. The French Government pays the cost of the army and a part of the expenses of public works. In the budget for 1892 the revenue was estimated at 46,330,898 francs, and expenditure at 44,928,731 francs. In that for 1893 the revenue is placed at 48,318,020 francs, of which 12,318,000 francs proceed from direct taxes, 11,143,000 francs from customs, 12,127,250 francs from indirect taxes of various kinds, 5,235,700 francs from monopolies, and 8,231,270 francs from domains, etc.

The expenditures for 1893 are estimated at 64,948,129 francs, of which 26,520,000 francs are for public works, 13,793,167 francs for collection of revenue and *régie*, 11,906,637 francs for the interior, 5,397,539 francs for public instruction, 3,988,646 francs for justice and worship, 1,799,190 francs for agriculture, 622,250 francs for other departments, and 920,700 francs for repayments, etc.

The principal products are wheat, barley, mutton, wool, alfa grass, wine, tobacco, olives, flax, colza, cotton, ramie fiber, and silk. There was a population of 3,262,478 engaged in agriculture in 1891, of whom 187,000 were Europeans. The product of iron ore in 1889 was 351,800 tons, valued at 2,457,190 francs. The value of the general imports in 1891 was 277,770,289 francs, nearly three fourths of which came from France. The exports, four fifths of which went to France, were valued at 235,725,130 francs. The special imports were valued at 269,021,767, and exports at 222,844,445 francs. There were 1,910 miles of railway in operation in 1891, and 4,310 miles of telegraphs, with 10,000 miles of wire. The Trans-Saharan Railroad, which is to be extended to Timbuctoo, has been built to within 80 miles of the oasis of Figuig.

A remodeling of the system of administration, suggested by the strictures of Jules Ferry, has been approved by the French Government. The Arabs suffer injustice under the laws passed in France without a true understanding of the habits and customs of the people. The official staff is too large, and the officials occupy themselves with unnecessary forms and troublesome proceedings which the natives think are invented for their annoyance. The fines collected for infractions of the forest laws, for instance, are nearly four times in amount the actual value of the forest products. In the civil territory the

French colonists and officials discourage any attempt to elevate the natives. The proposition to establish schools for them has been met with persistent opposition. The result of their being kept disfranchised and degraded is that they cherish the hope of regaining the mastery, and the effect of the heavy taxation and troublesome fines imposed on the native population is to impoverish many and drive them to robbery. Jules Ferry's recommendation to extend the powers of the Governor-General so as to make Algeria resemble a colony instead of a French department was approved by the Senate, and a bill was framed embodying this principle.

**Tunis.**—The regency of Tunis is nominally still a vassal state of the Ottoman Empire and a hereditary monarchy ruled by the Bey, Sidi Ali, who was born Oct. 5, 1817, and succeeded his brother, Sidi Mohammed es Sadok, Oct. 28, 1882. Since its occupation in 1881 it has been technically called a French protectorate, but has been really governed by the French Minister Resident under the direction of the Ministry of Foreign Affairs, which has a special bureau for Tunisian affairs. The French Resident since 1890 has been M. Massicault. There is an army of occupation of about 10,000 men maintained by the French Government at its own expense. The area is about 45,000 square miles, and the population, consisting mostly of Bedouin Arabs and Kabyles, is about 1,500,000. The revenue for 1892 was estimated at 21,443,900 francs, of which 7,728,900 francs were derived from direct and 10,132,200 francs from indirect taxes, 713,000 francs from posts, telegraphs, and navigation dues, and 2,869,200 francs from various sources. The expenditures were estimated at 21,434,768 francs, of which 6,327,920 francs were required for interest and amortization of the debt, 4,950,888 francs for financial administration, the civil list, etc., 4,739,000 francs for public works, 2,629,861 francs for the general administration, 595,370 francs for war, 776,000 francs for the post-office, and 1,415,728 francs for other purposes. The debt was consolidated in 1884 into a perpetual 4-per-cent. *rente* of 6,307,520 francs, and this in 1888 into a 3½-per-cent. loan to be extinguished in ninety-nine years.

The value of the imports in 1891 was 38,115,090 francs, and of the exports 44,465,689 francs. The principal imports are silk and silk manufactures, mixed silk, cotton, and wool goods and woollens, flour, iron manufactures, and wine and spirits. The chief exports and their values in 1891 were: Wheat, 15,261,120 francs; barley, 9,808,600 francs; olive oil, 6,430,080 francs; dry vegetables, 1,990,390 francs; esparto grass, 1,734,016 francs; tan bark, 1,658,400 francs. There are 260 miles of railway and over 2,000 miles of telegraphs belonging to the Government. A railroad from Tunis to Sfax has been authorized. A joint commission for the delimitation of the frontier between Tunis and Tripoli was unable to agree, and the negotiations with the Turkish Government were suspended in April, 1893.

**West Africa.**—By the agreement with Great Britain arranged on Aug. 5, 1890, the French sphere of influence includes the entire region north of a line drawn from Say, on the middle Niger, to Barraua, on Lake Chad. By an



agreement made with Germany in 1885, regulating the boundary of Cameroons, France promised to undertake no political enterprises west of 15° of west longitude. The French have been active in establishing protectorates with the purpose of uniting their possessions in Algeria, Senegal, and the Congo. They possess the coast from Cape Blanco to the Portuguese district north of the mouth of the Congo, except the British colonies of Gambia, Sierra Leone, the Gold Coast, the territory of the British Niger Company, Portuguese Guinea, Liberia, and the German possessions of Togoland and Cameroons. The interior, from Algeria to the French Congo and from Senegambia to Lake Chad, is conceded to France, with the exception of the region east of the British Niger territory and Cameroons. In that region the English—through the Royal Niger Company—and the Germans endeavor to defeat the French project of uniting their possessions, for that would shut them off from extension into the Central Soudan and the territories north of the Congo State, the only parts of Africa that have not yet been occupied or divided into spheres of influence. The French Sahara has an area of about 1,000,000 square miles. The territories of Senegal, the Rivières du Sud, the French Soudan, and the settlements on the Guinea coast cover about 550,000 square miles. The French Congo and Gabun have an area of 250,000 square miles. The Sahara is mostly unexplored desert, and the population is unknown. Senegal and the Rivières du Sud have a population of 174,000, the annexed territories about 1,100,000, the French Soudan 360,000, the protectorates of the Soudan 2,500,000, and the Congo and Gabun about 6,900,000. The revenue of the French Congo and Gabun for 1892 was 2,168,287 francs. Senegal is administered by a Governor-General, assisted by a Colonial Council, and sends a Deputy to the French Chamber. St. Louis, the capital, has a population of 20,000. There is a railroad 246 miles in length, which is being extended toward the middle Niger. The revenue in 1893 was 3,280,692 francs, exclusive of the expenditure of the French Government for military and exploratory purposes, which amounted to 6,183,898 francs in 1893. The exports are groundnuts, India rubber, gums, woods, skins, etc. The value of the imports for 1889 was 29,000,000 francs; of the exports, 16,500,000 francs. The Rivières du Sud, which became a separate colony in 1890, and was united for administrative purposes with the Gold Coast and Bight of Benin settlements in 1892, cost the French Government 33,000 francs in 1892. The settlements on the Gold Coast are Grand Bassam, Assinie, Grand Lahou, and Jackeville; and those on the Bight of Benin are Porto Novo, Kotonu, Grand Popo, and Agoué. The imports of the two colonies for 1889 were 3,692,510 francs, and the exports 2,742,278 francs in value. The French Government contributed 943,500 francs for this administration in 1893. In 1893 the French colonies on the coast of Guinea were definitely constituted into three separate possessions: French Guinea, the Ivory Coast, and Benin, each having its own governor.

A dispute with the Republic of Liberia concerning 100 miles of coast adjoining the French Gold Coast was settled by a joint commission

in December, 1892. The agreement delimits the inland frontier of Liberia as well. Liberia regains possession of her settlements on the Grain Coast, and abandons her claim to the coast east of the Cavally, which river forms the boundary up to the junction of the Fireduguba, beyond which the frontier follows the watershed of the Fireduguba basin, passing to the south of Musardu and Mohammadu, until it reaches the English frontier of Sierra Leone. A dispute arose in the spring of 1893 regarding the limits of the British colony of Gambia. British officers raised the English flag at Panchang and Niambuntang, claiming that these points were within 10 kilometres of the river, and that that was the limit of British jurisdiction. French officers came and hauled down the flags, and the question was then reserved for diplomatic settlement.

The French Soudan, comprising the region of the middle Niger and the upper Senegal, was formerly administered, under the direction of the Governor-General, by the superior military commandant, who has his headquarters at Kayes. A revenue of about 400,000 francs is raised. The cost to the French Government in 1893 was 5,189,622 francs. There is a railroad from Kayes to Bafoulabe, 94 miles.

In 1893 Col. Achinard, the military commandant, was made Governor. In order to establish French rule in this region it was necessary to overcome the native tyrants Ahmadu and Samory. Ahmadu, the ruler of a large part of the empire founded by his father, El Hadj Omer, when expelled from Segu by the French, still maintained his power in the kingdom of Massina, while his brother, Agibu, ruled independently in Dingiray, on the opposite side of the region occupied by the French and bordering on Futa Jallon, which is a protectorate that is under the command of the Governor of French Guinea. The operations against Ahmadu were continued until Massina also was occupied, and Agibu was installed by the French as king in Bandiagara, the capital. Close to the borders of this country and commercially dependent upon it is Timbuctu, the great town of the Tuaregs, access to which by way of the Niger is now in French control, as well as the northern caravan routes. The Algerian Government has established good relations with the eastern members of this large and warlike tribe of Berbers, and the Governor of the French Soudan therefore hopes to induce the chief of Timbuctu to accept a French protectorate. In the spring of 1893 Capt. Blachère endeavored to capture Ahmadu, who fled eastward, and escaped with his family after his force was exterminated.

Samory's forces were broken up in the spring of 1893 by Col. Combes, who occupied Erimankono and Faranna. Objections were raised by the British authorities of Sierra Leone. One band with 700 rifles was put to flight by Col. Combes, another consisting of 1,200 men, surrendered to Capt. Dargelot, and the rest were pursued by Capt. Briquelot, while Samory fled and concealed himself from his own followers.

**Dahomey.**—At the beginning of 1893 the forces of Gen. Dodds held Abomey, the capital of Behanzin, whose army had dwindled to 2,000. With this force he was afraid to give battle. His credit with the European traders who had

supplied munitions was exhausted, and he was cut off from the coast and was deserted by the chiefs of southern Dahomey, who willingly accepted the French flag. The French built roads, and commerce and production resumed their normal course. The blockade of the coast, which had lasted six months, was raised on Dec. 19, 1892. The campaign against Behanzin cost 9,000,000 francs, and 5,000,000 francs more were estimated to be necessary to complete the organization of the conquered country. In the north the Dahomeyans still continued to attack the French outposts, and the populations from Yoruba to Togoland acknowledged in some sort the supremacy of the king. German traders established at Whydah were expelled on the charge of selling repeating rifles, cannon, and ammunition to Behanzin to enable him to begin the war anew, as was an English trader of Porto Novo for giving him information and encouragement. King Behanzin addressed a manifesto to all civilized nations protesting that the French governors Bayol and Ballot had begun hostilities without provocation. Gen. Dodds was called home to report on the situation. Just before he set out, Behanzin, who had been told that his life would be spared if he surrendered, offered his submission on condition that he should be allowed to reside at Cana or Aboimey in a manner suited to his former royal rank. The general replied that a residence would be given him in Senegal or elsewhere, but not in Dahomey. The French Government proposed to maintain an army of 2,000 or 3,000 men in Dahomey until the ex-king was vanquished and the country pacified. There was much dissatisfaction in France on account of the duration and costliness of the operations, and the ministers were gratified when Behanzin showed an inclination to treat; but when Gen. Dodds arrived, in May, he dissuaded them from discussing terms with the wily savage. Behanzin organized another army, and several skirmishes took place, in one of which 3 French officers were severely wounded, one of them mortally. In June Behanzin announced his intention of sending some of his principal chiefs and counselors as plenipotentiaries to conclude a peace with the authorities in Paris, writing to President Carnot that he had twice been the victim of the treachery of the French troops. Later he asked for a safe conduct to negotiate in person with Col. Dumas, the French commander, who looked for him in vain on July 25. Gen. Dodds returned to Dahomey with large re-enforcements, and in October resumed the aggressive. Behanzin's envoys set out from Acheribe in September, and arrived in Paris on Nov. 10, departing again on Nov. 16, when they found that there was no chance of being received by the President or the ministers. Gen. Dodds and Col. Dumas advanced at the head of separate columns as soon as the floods abated. Behanzin fell back from Acheribe to the Ueme, and Gen. Dodds sailed up that river to Zaganado, Behanzin's intrenched camp. All the tribes of the country occupied made their submission. The chiefs and fetich men who had clung to Behanzin, including his brothers and uncles, made terms, surrendering 4 Krupp cannon, a machine gun, and 460 magazine rifles. Behanzin, with the remnant of his

army, fled into the jungle, and a small force was sent to pursue him, while Gen. Dodds encamped at Zunetu.

**The Race for Lake Chad.**—After the signing of the Anglo-French agreement of 1890 Lieut. Mizon set out on an expedition for Lake Chad by way of the Benue river, Commandant Monteil left St. Louis for the same goal, and Paul Crampel started northward from the French Congo. Crampel was killed by the natives. Mizon, finding it impossible to reach Lake Chad, turned his face southward after sojourning some time with the Sultan of Yola, and effected a junction with Lieut. de Brazza on the Sangha river. Commandant Monteil, with Adjutant Badaire, reached Segu, on the upper Niger, on Dec. 20, 1890, and struck across the great bend of the river for Say, which he reached on Aug. 19, 1891, having made a treaty with the powerful Chief Ibrahima of Uro Guelajio, whose friendship secured for him a favorable reception at Say and a treaty with the local chief. Traversing Kabbi, the ruler of which has for his capital the fortified town of Argungu, with 20,000 inhabitants, he arrived on Oct. 18 at Sokoto, when he made a treaty with the sultan, although this kingdom is included in the British sphere. Delayed at Kano some months, he entered Bornu in March, 1892, passed through Kargin, Bosari, and Kililua, encountering many difficulties, was received by the Sheikh Malam Adam at Kuka on April 12, and spent four months on the shores of Lake Chad. In August he set out across the Sahara, and after a journey of severe hardship emerged at Tripoli late in 1892.

After the assassination of Crampel, M. Dybowski continued the work of extending French influence northward from the Ubangi. From a station established by him on the Kemo, one of the affluents of the Ubangi, M. Maistre set out with 5 European companions and a force of natives in July, 1892, followed for a part of the way Mizon's route in the opposite direction, entered Bagirmi, traversed the southern part of that country, made treaties with chiefs on the Shari and the Logone, reached Adamawa after encountering many difficulties and having some battles, and emerged at the mouth of the Niger in March, 1893.

Lieut. Mizon left France in August, 1892, to return to Adamawa at the head of a considerable expedition of an ostensible scientific and commercial character. When he arrived at the mouth of the Niger, with two river steamers containing among other stores 2 mountain guns, a Hotchkiss gun, 150 rifles, and 100 revolvers, the officials of the British Niger Company would not let him proceed, on the grounds that the passage of such large munitions of war under the charge of an uncontrolled adventurer would be a breach of the Brussels act, and calculated to do mischief to the natives beyond the company's territory; that it would be unpatriotic and unfair to a friendly power to facilitate such an expedition, inasmuch as Lieut. Mizon had claimed credit for his intention to prevent the extension of the English and German spheres; and that, as the company had displeased Mohammedan emirs by refusing to furnish them with arms or to assist them in slave raids against the pagan tribes, and by forcibly preventing such raids, it



would be impolitic to allow Mizon to present himself to these emirs as an ally possessing cannon and rifles. The French Government protested energetically against the closing to its explorers of the Niger and Benue, which are free to the navigation of all nations under the Berlin act. Mizon, with his 6 European companions and a force of Senegalese sharpshooters, proceeded up the Benue to within 120 miles of Yola. There his vessels grounded on a shoal, near the territory of the Sultan of Muri. He had to remain there nine months, until the waters rose again. He made a treaty with the Sultan of Muri, and three weeks afterward, on Dec. 25, 1892, bombarded and captured the town of Kwana, belonging to the pagan enemies of the sultan. He also established 2 factories in the sultan's dominions. The Niger Company, though not on friendly terms with the sultan, had once made a commercial treaty with him and possessed a post on the confines of his territory, which was assumed to be included in the British sphere, on the ground that he is a vassal of the Sultan of Sokoto. They threatened to send a force as soon as the waters rose to sink Mizon's ships, destroy his factories, and seize his goods. The British Government having made complaint that Lieut. Mizon had raised the French flag within the British sphere, a dispatch was sent from Paris recalling Mizon, and directing Albert Nebout, the second in command, to proceed with the scientific and commercial expedition to Yola. M. Hoellé was sent out later with full instructions and orders to relieve Mizon, but when he arrived at Akassa the British officials, pleading an order from the British Government forbidding the passage of any Frenchman, refused to let him ascend the river. This gave new cause to the French Government to complain against the violation of the neutrality of the Niger. It seemed as though the English, in transmitting the dispatch of recall and stopping Hoellé, were aiming to keep the Mizon mission out of Yola, and this was regarded as an unfriendly act, because the Niger Company was instructed at the same time to give every facility to a German expedition sent to forestall the French in concluding a treaty with the Sultan of Yola. Mizon, as soon as he had repaired his vessels after the rains, did repair to Yola, and afterward descended the Benue; but he was stopped, and his vessels and goods were confiscated, including the ivory that he had bought, on which he refused to pay duty. M. de Brazza, at Bania, stole a march on the German expedition of Baron von Stetten by sending, in December, 1892, M. Ponel, who reached Adamawa and concluded treaties with the Emir of Ngaundere and the Sultan of Yola. The French protectorate over Yola was announced to the British and German agents on Sept. 3, 1893. In the meantime Lieut. von Stetten had come and made a treaty with the Sultan of Yola, who promised to allow only German stations to be established in his country. The Niger Company sent an armed force to Muri, which tore down the French flag and demolished the factories, seizing their contents. All the members of the French mission were summoned before the company's tribunal to answer to charges of opening factories without a license and of polit-

ical interference in its territory, but they disregarded the summons. M. Ponel, on leaving Yola, in April, sought to descend the Benue, but the agents of the British Company refused to allow him to buy food or hire boats, and therefore he was obliged to retrace his steps to the Congo. The German and British governments were said to have agreed on a frontier northwest of the Cameroons up to Lake Chad.

**Madagascar.**—France assumed a protectorate over the island of Madagascar by virtue of a treaty of peace concluded with the Hova Government in 1885, which provided that a French Resident should be maintained at Antananarivo, attended by a guard, and should control foreign relations. The Hova Government has never acknowledged that the treaty established a French protectorate. The protectorate was recognized by Great Britain in the Anglo-French agreement of Aug. 5, 1890, but in the Hova capital British commercial and missionary influences have predominated, and the political relations between the Government and the French Resident were suspended when the exequatur question arose. The Queen's Government insisted on granting exequaturs directly, and refused to receive the application of the German consul through the medium of the French Resident in 1891. Queen Ranavalona III was born in 1862, succeeded to the throne in 1883, and married Rainilairivony, the Prime Minister and Prince Consort. The Government is an absolute monarchy, in which the Prime Minister is the virtual ruler.

The area of Madagascar is estimated at 228,500 square miles, and the population at 3,500,000. The Hovas, who have been the dominant race for half a century, number about 1,000,000; the Sakalavas, 1,000,000; the Betsileos, Sakaras, Ontatiavas, and Bavas, 1,400,000; and Arab, Creole, French, and other foreigners settled on the coast, 100,000. Antananarivo, the seat of the Hova Government, has 100,000 inhabitants. About 20,000 per cent. of the Hovas, and a considerable proportion of the neighboring tribes in the center of the island, are Christians. The revenue is derived from customs and a poll tax. There is a standing army of some 20,000 men, mostly armed with modern rifles. An English military officer has the chief command; another commands the artillery, which is equipped with rifled Armstrong cannon.

The industries of the island are cattle-raising, and the cultivation by the labor of African slaves of rice, sugar, coffee, cotton, and sweet potatoes. The people are skilled in the weaving of cloth from silk, cotton, and the fiber of the rafia palm, and in the working of copper and iron. The island is covered with forests abounding in valuable woods. European companies are engaged in cutting the timber on the northeast coast. There are rich gold and copper mines, which have recently been developed by English enterprise. Iron, galena, sulphur, and graphite are found. The principal imports are cotton goods from England, rum from Mauritius, hardware, and crockery. The exports are hides and skins, India rubber, rafia, wax, cattle, hemp, sugar, lard, coffee, vanilla, copal, rice, and seeds.

The French colony of Diego Suarez was founded by the French at the north end of the

island after the termination of the Hova war. The garrison in 1892 numbered 1,286 officers and men. The export trade is insignificant. In the neighboring seas France has Nossi-Bé, Mayotte, the Comoro Islands, and Sainte-Marie. The expenditure of France in 1893 was 2,244,092 francs for Diego Suarez, and the local revenue for 1891 was 128,410 francs. The islands produce sugar, rum, coffee, rice, and vanilla. Their combined imports amount to about 2,800,000 francs, and their exports are about the same. Their local revenues amount to some 450,000 francs, and the expenditure of the home Government to 225,000 francs a year.

The French Government has desired to avoid conflicts with the Hova Government, while extending French interests and influence on the coasts and in the northern part of the island. The Hovas also have been content to oppose a passive resistance to the French protectorate, except a party holding intimate relations with the missionaries and other English residents of Imerina, the leader of which has been Rajoelina, a son of Rainilairivony, who was ambitious to supplant his father as Prime Minister. In the summer of 1893 there was much activity among the Hovas, who received arms and ammunition from England. Large numbers were called from productive pursuits into the army. In the neighborhood of Fort Dauphin hostility was shown toward the French. In August, Rajoelina, Dr. Rajaona, a court physician and a son-in-law of the Premier, and the Premier's grandson and aid-de-camp Ralaikizo, husband of the Queen's principal maid of honor, were arrested on the charge of having conspired to remove the Premier by violent means, if necessary, in order that Rajoelina might take his place. All were sentenced to be decapitated, but the sentence was commuted to banishment in chains for life, and they were interned in a village, where the sentence was considerably mitigated in execution. Abraham Kingdon, an English merchant, who was Rajoelina's partner in a valuable gold-mining concession obtained from the Premier, was accused of complicity in the plot. He was ordered to leave the country in twenty-four hours. The French Resident pointed out that a foreigner could not be summarily banished, according to the treaties. The British vice-consul was then asked by the Prime Minister to try the case. He refused to do so unless the documents were forwarded to him through the French Resident; but this the Malagasy Government declined to do, as it involved a recognition of the French protectorate. Some letters stolen by Kingdon's servant from his master had revealed the plot to Rainilairivony. The conspirators and their English sympathizers were known to have cherished the plan of placing Rajoelina in power ever since the death of Rainiharovony, the Prime Minister's heir.

**Réunion.**—The old colony of Réunion, in the Indian Ocean, has an area of 965 square miles, and a population of 165,915. The sugar plantations are cultivated by the labor of Indian coolies and African contract laborers. The fixed population consists mainly of creoles, who are represented by a Senator and 2 Deputies in the French Parliament. The exports, besides sugar, are coffee, cacao, vanilla, and spices. The value

of the imports for 1889 was 21,262,367 francs, and of the exports 13,901,601 francs. The revenue for 1892 was 3,857,700 francs, and the expenditure 3,853,689 francs. The expenditure of the French Government in 1893 is 4,554,745 francs. The island of Kerguelen, in the Indian Ocean, was occupied by a French man-of-war in the beginning of 1893. It is supposed to contain valuable deposits of coal.

**Indo-China.**—The French possessions in Farther India, consisting of the colony of Cochinchina and the protectorates of Cambodia, Tonquin, and Annam, were united into a customs union and placed under the direction of a Governor-General in 1887. J. L. de Lanessan became Governor-General in July, 1891. Cochinchina was ceded to France by the Emperor of Annam, part in 1861 and part in 1874. The King of Cambodia accepted in 1863 a French protectorate over the dominions that Siamese and Annamite aggressions had left to him, and in 1884 the French assumed the practical government of his country. Tonquin was ceded to France after a long struggle in 1884 by the Emperor of Annam, who was forced to repudiate the suzerainty of China and accept a French protectorate. This arrangement the French had to defend in the war with China, which came to an end in 1886. In Cochinchina the administration, which is in charge of a Lieutenant-Governor, has long been conducted by French officials, and so it is practically in Cambodia, where King Norodom still has his court. In Tonquin the Resident-superior and the Residents of the 5 provinces share their functions, in such matters not of political importance as depend on native customs, with an Annamite viceroy called the Kinh Luoc, and the local mandarins. In Annam the French Resident-superior interferes as little as possible with the prerogatives and dignity of the Amurath, or Emperor, and the ancient and majestic ceremonial of the court, but the French have been careful since the overthrow of Tu Duc to put on the throne a prince amenable to their political guidance. The reigning Emperor, the fifth since Tu Duc's death, in 1883, is Thanh Thai, a boy of fifteen. Ham Nghi, whom the mandarins set up in opposition to the French, was captured and is now interned in Algeria, Dong Khanh being placed on the throne, who, after three years, was succeeded in 1889 by the present Emperor. A sufficient garrison in Hué is a guarantee of French supremacy. In each of the 12 provinces are French Residents who have charge of political and police affairs.

The total area of French Indo-China is about 240,000 square miles. Cochinchina has less than 2,000,000 inhabitants, Cambodia less than 1,000,000, Tonquin perhaps 12,000,000, and Annam proper between 3,000,000 and 4,000,000. The imports of the customs union for 1890 were 60,248,460 francs, and the exports 56,995,119 francs in value. The receipts from customs amounted to 25,294,497 francs. The imports of French products were 11,286,781 francs, and the exports of native products to France 2,022,379 francs. The policy adopted in 1887, which abolished free trade in Saigon and established a uniform discriminating tariff for the whole of Indo-China, has therefore failed to develop the interchange of products with France that was its



object. The import trade is largely in British and German hands, while the export trade and the internal commerce is almost monopolized by the Chinese, whose immigration is not checked by a heavy capitation tax. Production and commerce have been greatly stimulated under French dominion, though other nationalities reap the benefits. The foreign trade of Tonquin increased from 10,000,000 francs in 1876 to 48,000,000 francs in 1892. In 1893 it was expected to reach 62,000,000 francs. The staple product of the deltas of the Red river and the Mekong is rice, of which two crops are gathered in the year. The fertility of the country, owing to its rich alluvial soil and moist, hot climate, is extraordinary. Indian corn, tobacco, and indigo are cultivated for export, and beans, yams, and onions for food. The areca palm, bamboo, banana, coconut palm, tamarind, litchi, bread tree, mulberry, mango, orange, lemon, and pineapple abound. The cultivation of cotton, tea, coffee, and sugar has been introduced. Tonquin is exceedingly rich in coal, and elsewhere antimony, the precious metals, and other valuable minerals are found. French companies have recently been formed for working the coal deposits, and mills for manufacturing paper, matches, and cotton cloth have been started at Hanoi. There is a railroad 215 miles in length, from Saigon to the mouth of the Mekong, which is operated at an annual loss to the Government of 600,000 francs. In Tonquin a line is being constructed from Phu-Lang-Thuong, at the head of navigation on the Red river, to Langson, on the Chinese frontier, but the work has been much hampered by attacks of the pirates. The Annamite court has agreed to share the expense with the French Government of the construction of a railroad, 400 miles long, from Hué to Hanoi.

Cochin-China and Cambodia raise enough revenue for their administration, and a surplus, which is taken against their will to diminish the annual deficit in Tonquin. This deficit, which was 27,000,000 francs in 1887, was reduced to 6,000,000 francs in 1891. It is caused by the military operations necessary to combat the pirates of the Red river, for which the French Government is obliged to bear the chief part of the expense, contributing in no year less than 25,000,000 francs. The military estimate for 1892 was just that figure. The robbers, who are called pirates although they have been driven from the river and the coasts, descend from the mountainous districts near the Chinese frontier to seize food for themselves and women and children to sell as concubines and slaves in China. The military administration, which was abolished in 1888 on account of the cost in lives and money of incessant fighting, has been partly restored by M. de Lanessan in the districts north of the Delta, which have been placed under military commandants who also exercise civil powers. In the districts of the delta European troops have been replaced by a native civil guard. M. de Lanessan went to Indo-China, having previously made an official investigation for the purpose of putting into operation the policy that he suggested of governing with the aid of native officials, and with special regard to the customs and feelings of the inhabitants. This plan has worked well, and the delta is now completely pacified.

The European soldiery in Tonquin and Annam in 1893, consisting of some regiments of the regular army belonging to the foreign legion, some regiments of marine infantry, and several batteries of marine artillery, number 7,600 men. There is a well-disciplined force of 14,000 Annamite *tirailleurs*, organized like French troops and commanded by 177 French officers. The native militia or civil guards number 2,500 in Annam and 4,800 in Tonquin. The naval division of Indo-China has been withdrawn, and a few gunboats now constitute the naval force.

**FRIENDS. Iowa Yearly Meeting.**—The Iowa Yearly Meeting met in Oskaloosa, in October. Twelve quarterly meetings in Iowa, 1 in Minnesota, 1 in South Dakota, 2 in Nebraska, and 1 in California, with more than 100 churches in Wisconsin, Colorado, Texas, Louisiana, and Jamaica, were represented. Two or three quarterly meetings sending an excess of delegates, it was decided that in reducing the number the resultant delegations should be equally divided between the sexes. Heretofore the men's meetings and the women's meetings have been held separately, although in the Ohio and New York Yearly Meetings the two had already been united. Propositions for union in this meeting also, which had been under discussion for several years, were again considered, with a final affirmative result. Joint sessions were held during two days, and it was decided to meet in 1894 as one body, with a single presiding officer and assistants of both sexes. In accordance with recommendations from the General Conference of Friends, which met in Indianapolis, Ind., in 1892 (see "Annual Cyclopædia" for 1892), committees were appointed to co-operate with committees from other yearly meetings in measures for the foundation of a central publishing house and the formation of a general board of missions, which last body is, however, intended to be little more than a Bureau of information. A favorable report was made of the Bible schools (Sunday schools), which are now organized under a department with a yearly meeting superintendent. The Department of Education includes Penn College, with several academies. The evangelists laboring under the department of evangelistic work had held 109 series of meetings, at which 1,337 persons had professed conversion, and 700 had united with the Friends; while several new churches had been organized. The meeting resolved that "no political party that in any way upholds or is committed to the interests of the liquor traffic is entitled to or should receive the support of Iowa Yearly Meeting or the Church at large; and our duty as a Church is to stand for the enforcement of every prohibitory liquor law." The statistical report showed that there were connected with the Yearly Meeting 103 churches, of which 66 were regularly organized, with monthly meetings, and 37 were small congregations and missions, with 11,415 members. Of the whole number of churches, 85 had "pastors" receiving partial or entire support.

**London Yearly Meeting.**—The reports presented at the London Yearly Meeting showed that there were in Great Britain 343 meetings or congregations of Friends, or 3 more than in 1892. In those meetings were 16,244 members,

showing an increase of more than 2,000 in the past twenty years; 6,216 attendants who have not yet reached the stage of membership; and nearly 400 recorded ministers, besides some hundreds who were not yet recognized. The report from Scotland showed a marked increase in Ayrshire, and many earnest inquirers were mentioned in Glasgow. In the discussion upon the state of the society, the chief interest settled upon the tendencies toward agnosticism and toward what was called ultra-evangelicalism. The process of the trial of an appeal from a member against the action of his meeting, which had disowned him, and of the quarterly meeting, which had confirmed its decision, illustrates one of the peculiarities of Friends' discipline. A court

was constituted of one member from each quarterly meeting, except the one appealed against, before which both parties were heard; at the close of the hearing, each party signed a statement that he had been fully and fairly heard; the court then gave its decision, which the Yearly Meeting always accepts as final. In matters of faith and doctrine the whole Yearly Meeting is constituted a court of appeal. The judgment of the Yearly Meeting was expressed against certain methods adopted by the Home Mission Committee, which had been objected to by many Friends as inconsistent and un-Quakerly; and it was decided that a mission committee should be appointed by popular elections in the various quarterly meetings.

## G

**GEOGRAPHICAL PROGRESS AND DISCOVERY.** But little of note occurred during the year to extend our knowledge of the surface of the globe. Wide fields for exploration still remain, not only in the polar regions, but in South America, Australia, New Guinea, and the interior of Africa, while great areas in Asia, including the northern half of the Tibetan plateau, much of the Kuen-Lun range, the valleys in the Sulimani range, and the sources of the great rivers, together with very extensive tracts in Arabia, are yet unknown. Perhaps one fourth of the land surface of the globe is still unexplored. The arctic expeditions of Dr. Nansen and Lieut. Peary have been followed with interest, but their outcome is still in the future. Some expeditions for discovery have been made in Asia and Africa, but the interest in those continents has centered in the French operations in Siam and the fighting in Matabeleland.

What will perhaps hardly be regarded as progress in this direction is the news from the Royal Geographical Society at London. A vote taken in August on the question of admitting women as fellows of the society on the same footing as men, was decided against the policy by a vote of 172 to 158. It was, however, shown by a plebiscite of the members of the society that but 500 were against the admission of women, while 1,200 were in favor of it.

**Polar Regions.**—The second expedition of Lieut. Peary sailed north in the summer. Its object is understood to be exploration of the archipelago lying north of Greenland, and a survey of the unknown parts of the northern and northeastern coasts of the island.

Dr. Nansen sailed for Bering Sea in the summer with his vessel, which is so built that pressure in the ice will raise it instead of crushing it. His study of the arctic currents has led him to believe that within three years the ship will be carried very near the pole. Starting from the point near the New Siberian islands, where the "Jeannette" was wrecked, Dr. Nansen hopes to make progress by drifting with the ice diagonally across the region of the north pole into the East Greenland Sea between Spitzbergen and Greenland, and that in this way he will pass by or near the pole, and so pass to that point, on the coast of Greenland, where articles from the

"Jeannette" were found, indicating the direction of the currents.

An arctic exploring party is partly made up for an expedition in the summer of 1894. It will be led by Robert Stein, of the United States Geological Survey, and will have for its main object scientific study of Ellesmere Land and the mapping of its western part. The eastern shore is fairly well known.

At the same time search will be made for traces of the Norwegian students J. A. Bjorling and E. Kalstinus and their three assistants, who disappeared somewhere near the mouth of Smith Sound, having gone there in 1892 to make natural-history collections for the University of Christiania. They were poorly equipped with supplies, and made the journey from Newfoundland in an old schooner, the "Ripple." This was found wrecked on one of the Cary islands in June, 1893. Near it was a grave containing the body of a man supposed to be one of the Newfoundlanders taken as assistants by the young men, and some documents, from which it was learned that they had found a *cache* of supplies left there in 1875 by the Nares expedition, and had gone in a whaleboat to Foulke Fjord, expecting to winter among the natives, as Dr. Hayes did, apparently ignorant of the fact that the Eskimos have not lived so far north for many years. They went as far north as Northumberland island, where they were within easy reach of Peary's house, Red Cliff; but, not knowing this, they returned to the Cary islands, and then set out for Cape Clarence or Cape Faraday in Ellesmere Land, to winter among the Eskimos. There were Eskimos there at the time of Nares's expedition, but it is believed that Ellesmere Land is now deserted. Nothing has been heard of the young men since.

From accounts during the past two years it seems that exploration will soon be renewed in antarctic regions. The International Geographic Congress at Bern, in 1891, warmly advocated the renewal of south polar research. An Australian-Swedish expedition is promised, and interest is aroused in England, which may lead to some results. The winter of 1892-'93 was marked by an enormous fleet of icebergs from antarctic seas. They were seen nearly as far north as the Cape of Good Hope, towering to



a height of 250 to 300 feet above the surface, and every foot above the water means 6 feet below it, the thickness of the great antarctic sheet may be gauged accordingly. Wherever approached, its face has not, as in the arctic regions, been at the head of a fjord, but is an enormous flat-topped precipice, stretching east and west as far as ships have traced it. This edge forms the great southern barrier.

**Africa.**—An account was given in the "Annual Cyclopædia" for 1892 of a journey by Dr. Oscar Baumann in Eastern Africa, in the course of which he discovered a salt lake hitherto unknown, called Eliassi, southeast of the Victoria Nyanza. On an expedition later in the year, accounts of which did not appear till 1893, he explored the highest sources of the Kagera, which Speke recognized as the most considerable tributary of Victoria lake, and therefore the ultimate source of the Nile. He also followed up its most southern tributary. These remote sources are in about 4° south latitude, so that the Nile in its whole course crosses more than 35 degrees of latitude.

A map is here given of the journey between Victoria and Tanganyika lakes.

Following are extracts from Dr. Baumann's account of his expedition, dated from Tabora, Nov. 8, 1892:

On Aug. 23 I crossed the route of Speke at the village of Kassusura, the present ruler of East Ussui. I went on through a well-watered, mountainous country, with ridges stretching to the north-northeast, to

Ujagoma or West Ussui, whose inhabitants have a large mixture of the Warundi, while East Ussui has a population almost purely Wazinka. The chiefs are everywhere Wahima (Watusi). Sept. 5 we crossed the Kagera, here called the Ruvuvu, and reached Urundi. The people thought I was a descendant of their former race of kings of the Mwesi, the moon, and they greeted us with great enthusiasm, gathering in vast crowds. The route lay farther through grassy steep mountain land to the Akanyaru, which is not a lake, but a river, forming the boundary of Ruanda. The Warundi are accustomed to call every large mass of water "Nyanza," and every lake—as the Victoria, Albert Edward, Urigi—"Tanganyika," which gives rise to errors regarding the lakes. The Mvorongongo, here called Nyavarongo, is a river flowing into the Akanyaru northward from my route. I found people in Ruanda who were well acquainted with the Mfumbiro, the Rusizi river, the Victoria and Albert Edward lakes; they all declared that there was no lake in all Ruanda reaching the size of the Urigi, and that the Akanyaru was the greatest river of Ruanda.

Passing southwest and crossing the river a day's journey below its sources, I again entered Urundi. Here lives a bandit tribe of the Watusi, with whom I had a bloody fight in the mountains. Sept. 19 we reached the head of the Kagera (Ruvuvu), which has its source in the high wooded ridge forming the watershed between it and the valley of the Rusizi. The Kagera, as the main tributary of Victoria lake, may be regarded as the principal branch of the Nile, and its source as the source of the great river. This place is the burial ground of the kings of the Warundi. They call the mountains *Misozi a Mwesi*, "Mwesi's Mountains," as the general name of Urundi is "Land of the Mwesi," or "Moon-land."



MAP SHOWING BAUMANN'S ROUTE.





GERMAN STATION ON THE SLOPE OF KILIMANDJARO.

Sept. 22 we crossed the water divide, over 2,000 metres in height, to the broad Rusizi valley, extending northward from Tanganyika and inclosed on both sides by lofty mountains. Judged by the direction of the valley, the Rusizi seems to come from the northwest; I was told that it comes from a water, possibly a lake, called Kiva, which is navigated by canoes, and lies southwest of the Mfumbiro mountains. Perhaps the Kiva is identical with the lake Oso of the maps, but I could not find out. Three days later we reached Tanganyika at Usige, where we saw flourishing oil palms and green parrots. The lake is manifestly subsiding.

From Usige we again ascended the height of the watershed of the Urundi mountains and took a direct southeasterly course toward Uha. On the way we had bloody combats with the Watusi (Wahima), and carried away over 200 head of cattle. The country is mountainous, traversed by southerly branches of the Kagera, the most easterly of which, Luvirosa creek, rises in 4° south latitude. Oct. 8, we ascended the divide from the Mlagarasi, which forms a remarkable climatic boundary; for while west of it rain falls almost daily, the land east of it we found to be completely dry, not a shower having fallen for weeks. The Mlagarasi rises only a day's journey north of Ujiji, forms a curve toward the north, and incloses the well-wooded land of Uha. On the other side is Muhambwe, and thence the route lay through light uninhabited woodland to Kirambo, the boundary district of Uniamwesi, and then through level wooded regions by way of the mission Urambo to Usagali and Tabora. Gombe river is only a succession of pools. Mr. Shaw, of Urambo, who has lived in the region for ten years, says the rivers are becoming smaller every year. May not this be connected with the falling of Tanganyika, since Mr. Shaw notices no great decrease in the rainfall.

In Unyamwembe are many Watusi, mostly emigrants from Ussui and Urundi. They speak pure Kirundi, called the Kitusi. I find that the name "Uniamwesi" is not national, but is applied to the country by the people on the coast, apparently be-

cause the Arabs supposed that there was in this part of Africa a "Moon Land."

The map also shows the route taken by the late Baron Fischer from Tabora to Victoria lake, a route followed by no other European.

The expedition of W. A. Chanler and Lieut. Ritter v. Höhnel, in 1892-'93, in the country eastward of Mount Kenia, has led through some hitherto unexplored regions. They passed up Tana river to the mouth of its tributary, the Mackenzie, followed that to its source, then traveled north and northwest until they struck the Guasso-Njiro, and followed it to its ending in a swampy region called Lorián, at 39° 38' east longitude. It has been supposed that this river was tributary to the Tana. This whole region seems to be uninhabited. Most of the land passed over is hilly, and extinct volcanic craters were observed. The Mackenzie is described as a charming little stream, rising in mountains called the Djambeni chain. This region is inhabited by a large population of farming people, the Wa-Embe. On the west of the mountains are the Wa-Msaara; at the southern foot of the chain the Wa-Daitscho live toward the east, the Ooti toward the west, and between them and the Wa-Msaara the Djanjai. The north is uninhabited. All these tribes speak Bantu dialects, varying from one another, and yet nearly related to the Kikuyu. Lieut. v. Höhnel estimated the entire population at about 30,000. The Djambeni mountains are of nearly uniform height, only a little higher in the south, estimated at about 2,100 metres.

The Guasso-Njiro flows through a deep bed of gneiss, scarcely observable at any distance, so that the travelers were obliged to follow all its



windings. On one side the landscape is a desolate volcanic region, but in places are parklike stretches where the valley widens out, and other trees besides the monotonous doom palm come into view. In one place it flows between high perpendicular walls of basalt, and forms two falls from 12 to 15 metres in height. These were named Chanler Falls. Farther down it passes along the foot of a remarkable plateau, 120 to 150 metres in height. This is flat, like a table, and falls away steeply on all sides. At points around it are bastionlike rocks, and the whole plateau has the appearance of a fortress. It is volcanic, and is called by the natives Mariss el Logworambo. Remains of old kraals of the Wadnorobbo were found in this deserted region.

Retracing the march up the Guasso-Njiro, the travelers took a return route farther west in order to visit the country of the Wa-Msaara, who were found very unfriendly, unlike the Wa-Embe, who had furnished guides to the lower river. The Djambeni mountains were here seen to be a chain of volcanic origin, running south-south-west and north-northeast, and outlying Mount Kenia toward the northeast, much as the Djulu chain is situated with regard to Mount Kilimanjaro. Numerous craters are found at the northeastern foot of Kenia. The ridge connecting it with the Djambeni is the water divide between the valleys of the Tana and the Guasso-Njiro.

The Msaara were hostile, refusing to provide supplies, and the attempt of Chanler's men to take some sheep and cattle led to a sharp encounter, in which the expedition lost 3 men, while several others were wounded. The main object of the expedition thereafter was to reach the country of the Borana-Galla.

Later advices are to the effect that Lieut. v. Höhnel was dangerously wounded by a rhinoceros Aug. 22, at Seja, at the southern end of the Boroghi range, about 180 kilometres north of Mount Kenia, and was obliged to give up the rest of the intended journey, and go to a mission station for treatment.

The report of the journey of Joseph Thomson in 1890-'91 appeared this year, having been delayed by his illness. Its most important point is that regarding Lake Bangweolo. He confirms the supposition that the southern part of the basin can not be regarded as lake proper, but that in the rainy season it is a great swamp region, called "Lunda," covered in places with water. Mr. Thomson could not visit the point where Livingstone died, in 1873, but determined its location by the aid of his interpreter.

The rapid development of Mashonaland is one of the most remarkable of recent geographical changes. While it had been visited six years ago by not more than 2 or 3 white men, it has at present more than 3,000 white settlers, attracted by the gold fields. A railroad in process of construction will connect it with the coast at the mouth of the Pungwe river, where there is a fine harbor. This is about 115 miles below the Zambesi delta. The harbor is about 2 miles wide and 6 miles long, and on its northern shore has arisen the town of Beira, where 500 Europeans, half of them British, are now living. Probably no white man six years ago had ever seen the barren promontory of sand now occupied by this town. Salisbury stands 5,000 feet

above the sea level, on a *kopje* rising from a large plain. Its neighborhood has been drained by the South Africa Company. Other towns are Victoria and Umbali. The country contains, according to Mr. Bent, about 40,000 square miles suitable for colonization, as having an improving climate, and as producing, even under native cultivation, excellent rice, tobacco, tomatoes, sweet potatoes, chillies, and groundnuts. But it is on its gold mines that the future of Mashonaland depends.

**GEORGIA**, a Southern State, one of the original thirteen, ratified the Constitution Jan. 2, 1788; area, 59,475 square miles. The population in 1890 was 1,837,353, of whom 858,996 were colored. Capital, Atlanta.

**Government.**—The following were the State officers during the year: Governor, William J. Northen, Democrat; Secretary of State, Philip Cook; Comptroller-General, William A. Wright; Treasurer, Robert U. Hardeman; Attorney-General, Joseph M. Terrell; Commissioner of Agriculture, Robert T. Nesbitt; State School Commissioner, S. D. Bradwell; Railroad Commissioners, Allen Fort, L. N. Trammell, and Virgil Powers; Chief Justice of the Supreme Court, Logan E. Bleckley; Associate Justices, Thomas J. Simmons and Samuel Lumpkin.

**Finances.**—The Comptroller's report for the year ending Sept. 30, 1893, shows the condition of the treasury to be as follows: Balance, Oct. 1, 1892, \$748,051.63; receipts from Oct. 1, 1892, to Sept. 30, 1893, \$2,855,974.24; amount, \$3,604,025.87; total payments by Treasurer, \$2,464,188.42; balance in treasury Oct. 1, 1893, \$1,139,837.45. Of the receipts, \$1,926,863.20 was from the general tax for 1892, and \$82,417.21 from that of 1891. The insurance tax for the year amounted to \$48,772.62, and the liquor tax to \$112,053.84. The railroad tax was \$143,547.29, and the rental from the Western and Atlantic Railroad, \$385,011. For convict hire in 1892 the State received \$25,000.

Among the larger items of disbursements were: On account of the civil establishment, \$119,383.86; of the fund for maimed soldiers, \$185,000; of the lunatic asylum, \$197,500.02; of the public debt, \$280,230; of the school fund, \$952,199.08; of colored schools, \$6,000; of widows' pensions, \$243,600; of special appropriations, \$195,488.80.

The total amount of valid interest-bearing bonds of the State is \$8,149,500, and the total interest to be paid on them in 1894 is \$368,835.

The school fund amounts to \$1,063,657.81. Of this, \$600,000 comes from direct assessment, and the remainder is made up from half the rental of the Western and Atlantic Railroad, the tax on liquor dealers, the net hire of convicts, the fees for inspection of oils, the lease of oyster lands, and other sources.

The assessed value of the whole property of the State subject to taxation amounted in 1893 to \$452,644,907, of which \$42,000,154 was of the taxable property of railroads. The property of railroads that is exempt by their charters from *ad valorem* taxation, and is therefore not included in the statement above, is estimated at \$20,000,000. Of the valuations of real estate, \$122,540,587 is of city and town property, and \$131,214,047 of agricultural lands. The property

owned by colored taxpayers is assessed at \$14,-960,675, having increased to that amount from \$5,182,398 in 1879. The whole assessment of taxable property amounted in 1879 to \$234,-959,548.

**Education.**—When the present system of common schools was inaugurated, in 1871, the school fund amounted to only \$174,107.02, not including the poll tax, which is kept in the counties and does not go into the State treasury. In 1893 the fund, not including the poll tax, was \$1,058,532.52. The enrollment in 1871 was 49,-578, of whom 6,664 were colored. In 1892 the total enrollment was 415,647, of whom 161,705 were colored. The number of schools in 1871 was 1,573, of which 221 were colored. In 1892 there were 5,047 white and 2,693 colored schools. During the same period the school population has increased from 314,973 to 604,971. Only since 1889 has any portion of the school fund been raised by direct taxation. In that year the amount raised by direct tax was \$165,000; in 1893 it was \$688,560. The educational tax proper is 1.4 mill. The expenses of the department of education in 1893 were \$5,125.29. There were in 1892 teachers to the number of 7,929, of whom 2,685 were colored. The percentage of illiteracy in the State is given as follows in the superintendent's report: White illiteracy, 11 per cent.; colored, 27 per cent.; average, 18 per cent.

The Normal-School act of 1891 provided for the acceptance of the Rock College building and 6 acres of land near Athens. With this gift was included the Gilmer fund of \$15,000, left by the late Gov. Gilmer for training teachers; and out of the Peabody fund for the year was \$800 set aside for an institute at Athens. In addition to this, 5 counties agreed to hold their county institutes there during the summer of 1892. In these ways a fund of \$1,925 was raised for the Normal-School work. A continuous session was held for seven weeks, during which time instruction was given to teachers from 32 of the counties. During the week of the county institutes there was an enrollment of 213, and the remainder of the session 112. No appropriation was made for 1893, and the means collected from available funds and by private subscription were only sufficient to provide for the expenses of a six weeks' term, with 9 instructors. There was a total enrollment of 116 students from 35 counties, with an average enrollment of 75, and an average daily attendance of 60.

The Technological School, which is in its seventh year, opened in September with 150 students.

The ninety-third session of the University of Georgia opened Sept. 20, with an attendance the largest for many years.

**Railroads.**—The year has been unusually hard for railways. Two thirds of the property of those in Georgia is said to be in the hands of receivers. The Atlanta and Florida was sold under foreclosure. The Georgia Central was put into the hands of a receiver in 1891, and a decree has been issued for its sale. It has been operated by the Richmond and Danville road.

A bill was filed in the United States court, Dec. 15, by the Central Trust Company of New York, praying for the foreclosure of a mortgage against the Chattanooga, Rome and Columbus

Railroad, and also the Savannah and Western Railroad. The complainant alleges that a principal of \$2,090,000 is due on the bonds of the two railroads, which are under the same management and practically one company, in addition to the interest up to Sept. 1, amounting to \$52,-250, and the interest on both amounts since that time and up to the filing of the bill.

The gross earnings of the Georgia Southern were reported to have been \$768,445 in 1892, and \$817,321 in 1893; but under the receivership the expenses were increased during 1893 by \$115,567. The road earned net, in 1892, \$243,-000, and in 1893, \$176,000. The reason of the apparent increase in expenses under the receivership is due to the law of the interstate commission, which requires all expenditures of the road, except court costs and taxes, to be charged to operating expenses.

At a meeting of the directors of the Southwestern, Dec. 27, the board authorized the president to take the road from the control of the Central and put it on an independent footing. It also declared that "it is the purpose of this company to provide the funds necessary to meet any liability that may be adjudged against it upon the so-called tripartite bonds." The president and treasurer were authorized to execute a mortgage or deed of trust, and issue bonds payable in gold after fifty years and bearing interest not exceeding 5 per cent.

The Savannah extension of the Florida Central and Peninsular Railroad was completed in December. The distance between Savannah and Jacksonville by this route is 138 miles, while by the older route it is 172.

The annual report of the Western and Atlantic shows the total receipts to have been \$1,396,-300.42; total expenses, \$955,640.95; net earnings, \$440,650.47; rental, \$420,012; taxes, \$9,-948.23; balance, \$10,699.24.

**Prisons.**—Convicts to the number of 102 were admitted to the Penitentiary in 1892. During the last three months of that year 181 had been sent to the camps. The report for October, 1892, showed that the number of convicts amounted then to 1,940, of whom 194 were white males and 1,690 colored males, 2 white females and 54 colored females. This does not include criminals in the chain gangs. There are 277 under sentence for life, 15 of whom were under seventeen when admitted, and 60 under twenty-one. Of the whole number of convicts, 130 were under seventeen when sentenced, and 632 under twenty.

The Governor urged the Legislature to establish a reformatory for youthful criminals, but a bill introduced for that purpose failed to pass.

**Atlanta.**—The capital city completed on Dec. 23 the first fifty years of its existence, having received its charter in 1843. Its first name was Terminus, the place having been fixed as the terminus of the Western and Atlantic Railway, which was then building, though it was not until 1845 that railway connection was carried to that point. When the charter was applied for, in 1843, the name Marthasville was chosen, suggested by the name of a daughter of Gov. Lumpkin; but when a new charter was granted, in 1847, the present name was substituted. A celebration had been planned for this year, but ow-



ing to the stringency in money affairs it was postponed until May, 1894. By the addition of West End the population of the city was increased to 120,000—according to the estimate of an Atlanta newspaper.

**Augusta.**—An exposition was opened in Augusta in December, which was well attended and highly successful. It was estimated that 30,000 visitors were present on the 12th.

The Cotton Spinners' Southern Association was organized in Augusta, Dec. 13. It was resolved to make it a permanent organization as soon as the number of 200,000 spindles shall be subscribed. The principal work proposed by the association is the arranging of freight rates. Weekly reports will be circulated regarding sales, output, and prices of yarns.

**Crawfordville.**—A statue of Alexander H. Stephens was unveiled May 24 at his grave at Crawfordville, his home and birthplace, in the presence of a large gathering of Georgians and amid great enthusiasm.

**Brunswick.**—Yellow fever broke out in this city in August, and the Mayor issued a proclamation advising all who could to leave the city, and free passes over the railroads were furnished to many otherwise not able to go. Refugees left in large numbers. Most of the cities of the State were quarantined against them, but Atlanta allowed free entrance, though precautions were taken to detect and isolate any possible cases of the disease. It was estimated that 1,000 citizens of Brunswick were there at the time trains were stopped running from the infected city. The stoppage of business caused great distress among those left behind, and help was freely sent from other cities. Four thousand people were dependent on the supplies thus received.

**Storms.**—A cyclone swept over Greenville, La Grange, and other towns in western Georgia, on the evening of March 3. Eighteen persons were reported killed, and a great number injured. Three fourths of Greenville was devastated, and the little villages of Piedmont and Odessa were almost completely destroyed. The storm of Aug. 27 and 28, that swept the southern Atlantic coast and caused great loss of life and property, was very severe at Savannah and on the Sea Islands, though its greatest fury was spent on the South Carolina coast. In Tybee roads and Savannah river large vessels were blown across the marshes and landed on the islands. At Savannah the streets were impassable from the *débris*. Twelve barks and barkentines that were anchored at quarantine station were blown upon the marsh, and some of them were carried across the marshes to an island 2 miles from the station. One vessel at Tybee was completely capsized, and 3 of the clubhouses on the island were blown down. Others were flooded, and the people sought shelter wherever they could. The ruin at quarantine was complete. Nothing was left standing where one of the finest stations on the south Atlantic was, except the doctors' house.

The "City of Savannah," a steamer of the Boston line, was wrecked and thrown ashore on Hunting island. The number of lives lost in Savannah was estimated at 40 to 50.

**Legislative Session.**—The annual session of the Legislature began Oct. 25, and ended Dec. 13, having lasted fifty days. More than 1,300 bills

and resolutions were acted upon. The most important measure of the session was a bill to create State banks of issue, called the Veach or Calvin-Veach bill. The general plan and purpose of the bill was thus described by Mr. Veach, its author: All the capital stock of the bank must be fully paid in lawful currency or coin of the United States. One half of this must be deposited in the vaults of the bank as a fund for the redemption of bills, and can be used for no other purpose, under penalty of imprisonment in the Penitentiary. The other half shall be invested in United States, State, county, and municipal bonds worth not less than par of their face value. These bonds are deposited with the State Treasurer as security for the bills of the bank. On the money so deposited in the vaults of the bank, and the bonds deposited with the State, such bank is allowed to issue and circulate bills to an amount equal to 3 times the fund required to be kept on deposit in the vaults of the bank.

A law was passed to do away, if possible, with mob violence and lynching. It authorizes any sheriff who may have reason to believe that violence of that character is contemplated to summon a posse of citizens, who must respond or be punished for a misdemeanor. It is also made a misdemeanor for a sheriff to fail to call a *posse* together in such an emergency; and these citizens so responding are authorized to carry weapons for the purposes of duty. To participate in a mob, or to band together for the purpose of inflicting punishment upon any citizen of the State is made a felony, punishable by one to twenty years in prison; and should death result from the violence of the mob, each participant is subject to indictment for murder.

A large number of convicts will be released from prison by the operation of a law providing that the Governor may order the release of any convict who has served what would now be the maximum sentence for his crime.

Two important bills for constitutional amendments provide that the General Assembly shall meet in June, instead of November, and for the increase of the supreme bench from 3 justices to 5. These proposed amendments are to be submitted to the people at the next general election.

Several bills relating to schools were passed, among them one reducing school boards from 5 to 3, and paying the members a regular salary; one abolishing monthly teachers' institutes, leaving the annual sessions as before; one providing for coeducation in the Normal School at Athens—a measure which was strongly opposed but finally passed; and one providing for payment of the school tax directly to the treasury. In 1892 the schools received but \$209,391.62 from the poll tax, while there were at least 400,000 voters, with 285,000 polls returned. By the new law, all money belonging to the common-school fund, beginning with the taxes for the year 1894, including poll tax and specific taxes, is to be paid direct into the State treasury.

Four of the bills passed concerned the State militia. The first was for the reorganization of the Governor's staff. The next is for the reorganization of the State militia itself. The third permits the Governor to appoint second lieutenants of volunteers from first-merit graduates of State

colleges giving military instructions. The fourth is that creating a battalion of naval militia.

A bill in relation to the dismissal of cases by the Supreme Court provides that no case shall be dismissed on account of errors in the record, or because too much or not enough of the record has been sent up. In such event time is to be allowed in which to make the necessary corrections.

Public executions were prohibited—a measure that met with general commendation.

A joint resolution for the codification of the laws was passed after a prolonged struggle.

Legislation affecting the city of Atlanta provided for the extension of the city limits, taking in the new water works for police purposes, and annexing West End, a suburb whose citizens had voted in favor of annexation, to go into effect Jan. 1.

The city was authorized to borrow annually \$200,000, instead of \$150,000. Certain officials heretofore chosen by vote of the council will now be elected by the vote of the people.

Resolutions were adopted declaring it to be the sense of the Legislature of Georgia that it is "to the interest of the people of the United States that the Government should coin both gold and silver as the money of final payment, without discriminating against either metal, the dollar unit of coinage of which shall be of equal intrinsic and exchangeable values." That it is "the constitutional right of the several States to enact their own banking laws, by which banking corporations within their borders shall be empowered to issue bank bills for circulation among their people for the necessary transaction of business, and that there is no constitutional right in the General Government to lay upon the States a prohibition against the exercise of such right, or to restrict, regulate, or control the exercise of such right." That "taxation, whether direct or indirect, is only justified as a means of raising revenue for the support of the Government, and that, therefore, customs duties should be laid for the purpose of revenue only; and we indorse the present Administration and the present Congress in their efforts so to readjust the tariff laws that they shall be upon a strict revenue basis only," and favoring a graduated income tax.

Other measures passed were these:

To create a board of pharmaceutical examiners.

To make all laws regulating the business of insurance in this State by companies apply to individuals, associations, and corporations in like business.

To permit foreign executors to transfer stocks, etc.

To provide for granting corporate powers to banking, insurance, railroad, canal, navigation, express, and telegraph companies.

To amend the general road law.

To make it penal to threaten to destroy property by fire.

To punish larceny of election returns.

To permit Confederate soldiers to peddle without license.

To extend certain privileges to all Confederate soldiers.

Requesting a continuance of Federal appropriations to the experimental station.

To require the Commissioner of Agriculture to publish statistics.

To prohibit commercial notaries public from issuing garnishments.

To amend the law relative to time of residence of applicants for divorce.

To allow county authorities to condemn land for drainage.

To forbid the sale of liquor in any prohibition county.

For the relief of holders of real-estate security for debt.

To define newspaper libel.

To amend the law in regard to pensions of widows of Confederate soldiers, designed to provide for such as have become widows since 1890, and soldiers' wives who may be widowed hereafter.

**Claim against the United States.**—Under an act of 1802, Georgia ceded to the General Government territory now embraced in Alabama and Mississippi, for which the sum of \$1,250,000 was to be paid to the State "out of the first net proceeds of the sales of the lands thus ceded, which net proceeds shall be estimated by deducting from gross amount of sales the expenses incurred in surveying and incident to the sale," as a consideration for the expense incurred in relation to the territory; "and, for the better securing as prompt a payment of the said sum as is practicable, a land office for the disposition of the vacant lands thus ceded shall be opened within twelve months." It is claimed that while \$1,000,000 or more has been paid, the records do not show that a complete settlement has ever been reached, the Government claiming certain offsets to whatever balance was left. The State has tried several times to secure a settlement. The subject is now brought up again, and a resolution was passed in the Legislature calling for an investigation.

**GERMANY**, an empire in central Europe, constituted at the close of the Franco-Prussian War, when the states of the North German Confederation, the Kingdoms of Bavaria and Württemberg, and the Grand Duchies of Hesse and Baden offered the crown and dignity of German Emperor to the King of Prussia. The proclamation of the empire took place at Versailles on Jan. 18, 1871. The Constitution of April 16, 1871, provides that all the states of Germany form a perpetual union for the protection of the *Reich* and the welfare of the people. The *Deutscher Kaiser*, or German Emperor, is the chief commander of the military forces; he can make treaties, declare war, and conclude peace; but for an offensive war he must obtain the consent of the Federal Council. All diplomatic representatives are accredited to him. The Bundesrath, or Federal Council, is composed of 58 plenipotentiaries, appointed by the sovereigns of the states forming the empire. Alsace-Lorraine is represented in the Bundesrath by 4 commissioners, appointed by the Statthalter, who have no vote. The Bundesrath can legislate, together with the Reichstag, upon all matters concerning military and naval forces, finances, commerce, domicile, communications, and justice. The Reichstag consists of 397 members, elected by universal suffrage for the term of five years. The Emperor has the right to prorogue or dissolve the Reichstag with the consent of the Bundesrath. All bills must receive an absolute majority of the Bundesrath and Reichstag, and bills thus passed can not be vetoed by the Emperor, but in order to become effective must have his consent and be countersigned by the Chancellor of the Empire.

The reigning sovereign is Wilhelm II, born Jan. 27, 1859, eldest son of Friedrich III, whom



he succeeded as German Emperor and King of Prussia on June 15, 1888. The heir apparent is Prince Friedrich Wilhelm, born May 6, 1882. The Chancellor of the Empire is Gen. Count Georg von Caprivi, appointed March 20, 1890. The Secretaries of State, who do not form a ministry or cabinet, but act independently of each other, under the supervision of the Chancellor, were the following, in the beginning of 1893: Foreign Affairs, Freiherr Marschall Bieberstein; Imperial Home Office and Representative of the Chancellor, Dr. von Boetticher; Imperial Admiralty, Herr Hollman; Secretary and Admiral, Freiherr von der Goltz, Commander-in-Chief; Ministry of Justice, Herr Hanauer; Imperial Treasury, Freiherr von Maltzahn; Post-Office, Dr. von Stephan; Railroads, Dr. Schultz; Imperial Exchequer, Herr von Wolff; Invalid Fund, Dr. Rösing; Imperial Bank, Dr. Koch; Imperial Debt Commission, President, Herr Meinecke.

**Area and Population.**—The area of Germany is 208,738 square miles, and the population on Dec. 1, 1890, was 49,428,470. The following table shows the area in square miles and the population of the different states comprising the German Empire, according to the definite results of the census of Dec. 1, 1890:

STATES.	Area.	Population.
Prussia.....	134,463	29,957,367
Bavaria.....	29,282	5,594,982
Württemberg.....	7,528	2,086,522
Baden.....	5,821	1,657,867
Saxony.....	5,787	3,502,684
Mecklenburg-Schwerin.....	5,135	578,842
Hesse.....	2,965	992,883
Oldenburg.....	2,479	354,968
Brunswick.....	1,424	403,773
Saxe-Weimar.....	1,388	326,091
Mecklenburg-Strelitz.....	1,181	97,978
Saxe-Meiningen.....	953	223,882
Anhalt.....	906	271,963
Saxe-Coburg-Gotha.....	755	206,513
Saxe-Altenburg.....	511	170,864
Lippe.....	469	128,495
Waldeck.....	433	57,281
Schwarzburg-Rudolstadt.....	363	58,863
Schwarzburg-Sondershausen.....	333	75,510
Reuss-Schleiz.....	319	119,811
Schaumburg-Lippe.....	181	39,163
Reuss-Greiz.....	122	62,754
Hamburg.....	158	622,530
Lübeck.....	115	76,455
Bremen.....	99	180,443
Alsace-Lorraine.....	5,668	1,603,506
Total.....	208,738	49,428,470

Of the total population, 24,230,832 were males and 25,197,638 were females. In 1890 the population was divided according to religion as follows: Protestants, 31,026,810; Roman Catholics, 17,671,929; other Christians, 148,532; Jews, 567,884; no religion, 13,315. The number of marriages in 1890 was 395,356; births, 1,820,264; deaths, 1,260,017; excess of births, 560,247. The population of the principal towns on Dec. 1, 1890, was as follows: Berlin, the capital, 1,579,244; Hamburg, 569,260; Leipzig, 357,147; Munich, 350,594; Breslau, 335,186; Dresden, 289,844; Cologne, 231,681; Magdeburg, 202,324; Frankfurt on the Main, 179,985; Hanover, 163,593; Königsberg, 161,666. In 1891 the number of emigrants was 120,089, of whom 113,046 were destined for the United States, 3,779 for Brazil, 2,130 for other American countries, 599 for Africa, 97 for Asia, and 438 for Australia.

**Finances.**—The expenses of the Government are covered by revenues derived from customs, certain excise duties, posts, telegraphs, and state railroads. The deficit remaining is made up by the individual states in proportion to their population. The ordinary revenue for 1892-'93 was estimated at 1,047,497,000 marks (1 mark = 23·8 cents), and the extraordinary revenue at 154,422,000 marks, making the total revenue 1,201,919,000 marks. The ordinary expenditure was estimated at 1,062,805,000 marks, and the extraordinary expenditure at 154,422,000 marks, giving a total expenditure of 1,217,227,000 marks. Of the total revenue for 1893, 603,834,000 marks were derived from customs, 37,109,000 marks from stamps, 21,222,900 marks from posts and telegraphs, 19,824,800 marks from railroads, 1,253,200 marks from the Government printing office, 4,772,700 marks from the Imperial Bank, 12,064,000 marks from receipts of the various departments, 25,164,600 marks from interest of the invalid fund, 295,000 marks from interest of imperial funds, 1,096,900 marks from various other sources, 154,422,000 marks from extraordinary receipts, and 320,859,700 marks from matricular contributions of the different states. Of the total expenditure, 423,200 marks were for the Reichstag, 150,400 marks for the Chancellory, 9,901,200 marks for the Foreign Office, 19,896,800 marks for the Home Office, 427,285,200 marks for the army, 45,298,800 marks for the navy, 2,048,800 marks for the Ministry of Justice, 356,059,700 marks for the imperial treasury, 308,200 marks for the railroads, 60,865,800 marks for the debt of the empire, 625,700 marks for the Audit Office, 42,646,500 marks for the Pension fund, 25,164,600 marks for the Invalid fund, and 226,552,100 marks for extraordinary and nonrecurring expenses. The funded debt of the empire amounted to 1,317,797,700 marks on March 31, 1891, bearing 3, 3½, and 4 per cent. interest.

The following table shows the budgets of the different German states, and their debts, in marks, in 1893:

STATES.	Revenue.	Expenditure.	Debt.
Alsace-Lorraine....	50,717,080	47,415,315	25,522,700
Anhalt.....	11,762,000	11,762,000	1,774,833
*Baden.....	69,128,447	76,469,126	330,805,849
Bavaria.....	306,292,271	306,292,271	1,323,340,157
*Bremen.....	16,718,749	22,493,778	80,283,600
Brunswick.....	13,010,000	13,010,000	27,885,588
*Hamburg.....	58,083,000	62,301,100	280,241,181
Hesse.....	27,016,985	26,664,238	35,246,151
*Lippe.....	1,101,909	1,076,469	810,398
*Lübeck.....	3,564,846	3,564,846	9,843,361
Mecklenburg-Schwerin.....	4,128,800	4,128,800	82,604,600
Mecklenburg-Strelitz.....	.....	.....	6,006,000
Oldenburg.....	5,997,151	6,671,131	36,719,202
Prussia.....	1,851,115,697	1,851,115,697	6,061,747,916
Reuss-Greiz.....	1,225,541	1,225,541	159,000
*Reuss-Schleiz.....	1,771,220	1,754,341	1,040,550
*Saxe-Altenburg.....	3,322,554	3,322,539	87,450
Saxe-Coburg-Gotha.....	1,647,800	2,074,408	3,458,299
*Saxe-Meiningen.....	6,398,780	5,716,280	12,394,127
Saxe Weimar.....	8,738,584	8,738,584	5,083,671
Saxony.....	45,841,554	45,841,554	631,967,250
Schaumburg-Lippe.....	1,091,912	794,800	510,000
Schwarzburg-Rudolstadt.....	2,542,950	2,542,950	4,018,688
Schwarzburg-Sondershausen.....	2,764,455	2,764,455	3,547,860
*Waldeck.....	1,186,802	1,186,802	2,189,400
Württemberg.....	65,643,603	66,193,657	426,236,553

\* Budget estimates for 1892.

**The Army.**—Service in the army is compulsory on every able-bodied German citizen between the ages of seventeen and forty-five. Every young German, after finishing his twentieth year, is called upon to present himself for the medical examination, which is held twice a year, and those who are found fit for active service are assigned to a regiment in any part of the country to which they thenceforward belong. The recruits report for active duty in the fall of the year, and have to serve with the colors for three years, except those who by superior education have been able to pass a rigid examination, and these are called volunteers, because they may choose the regiment in which they desire to serve, their service lasting only one year. Owing to the limited amount of money granted by the Reichstag for the army a large number of able-bodied recruits can not be received in the active army, and they are therefore placed among the *Ersatztruppen*, in which the term of service is twelve years. Having served three years in the active army, or where proficiency has been gained in two years, the men are transferred to the reserve, where they remain for four more years. The active troops together with the reserve form the standing army. Passing out of the standing army, the men belong to the first ban of the Landwehr for another five years, and to the second ban of the Landwehr until they have reached the age of thirty-nine years. All men not belonging to any of the above branches of the army between the ages of seventeen and forty-five form part of the Landsturm; those between the ages of seventeen and thirty-nine belong to the first ban, and those from thirty-nine to forty-five years of age to the second ban of the Landsturm.

According to the laws of Jan. 27 and July 15, 1890, the army is composed of 20 army corps, of which Prussia has 15, Bavaria 2, Saxony 1, Würtemberg 1, and 1 corps, the guards, is common to all states. Each army corps consists of 2 divisions of infantry and cavalry, 1 brigade of field artillery, 1 regiment or 1 battalion of foot artillery, 1 battalion of pioneers, and 1 battalion of train. Every division is composed of 2 brigades of infantry and 1 brigade of cavalry. Each brigade has 2 regiments; a regiment has 3 battalions, and a battalion has 4 companies of 134 men each in time of peace, which number is increased to 250 in time of war. The peace effective for 1893 was as follows: 173 regiments of infantry, numbering 10,574 officers and 317,354 men; 19 battalions of rifles, numbering 410 officers and 11,164 men; 277 *Bezirkskommandos*, numbering 570 officers and 5,211 men; 2,192 surgeons, instructors, etc.; 93 regiments of cavalry, numbering 2,350 officers and 66,145 men, with 63,620 horses; 43 regiments of field artillery, numbering 2,369 officers and 49,109 men, with 26,104 horses; 14 regiments and 3 battalions of foot artillery, numbering 728 officers and 17,256 men, with 30 horses; 20 battalions of pioneers; 2 railroad regiments, consisting of 1 balloon detachment, 1 railroad battalion, and 2 railroad companies, numbering in all 588 officers and 12,821 men; 21 battalions of train, numbering 299 officers and 6,905 men, with 3,906 horses; and 2,636 officers and 3,113 men in special formations and unattached; giving the grand total

of 20,524 officers, 491,220 men, and 93,750 horses. The war strength of the German army is estimated at 2,234,631 men, 3,358 guns, and 439,759 horses. Adding the men of the Landsturm, about 700,000, Germany could put nearly 3,000,000 men into the field.

**The Navy.**—The German navy, on April 1, 1892, consisted of 15 seagoing ironclads, 17 coast-defense ironclads, 3 frigate cruisers, 9 corvette cruisers, 6 cruisers, 3 gunboats, 8 avisos, 9 schoolships and boats, 8 vessels for miscellaneous purposes, 6 torpedo gunboats, 8 torpedo dispatch vessels, 1 torpedo ship, 1 tender, and 116 torpedo boats. The navy was commanded in 1892 by 12 admirals and 960 officers; the noncommissioned officers, marines, and sailors numbered 17,290.

**Posts and Telegraphs.**—The imperial post-office and the separately administered royal post-offices of Bavaria and Würtemberg in 1891 carried together 1,146,939,460 letters, 376,847,420 postal cards, 457,211,140 pieces of printed matter, 28,564,880 samples, and 861,449,999 newspapers. The money remittances amounted to 22,555,537,807 marks. The receipts of the united postal and telegraph offices in 1892 amounted to 265,464,036 marks, and the expenses to 246,423,643 marks, leaving a surplus of 19,040,393 marks.

The length of the telegraph lines of the empire, in 1891, was 67,536 miles, with 238,355 miles of wire. There were transmitted over the wires 28,114,373 messages, of which 19,461,174 were inland telegrams and 8,653,199 were foreign. There were 147,303 persons employed in the united postal and telegraph offices in 1891.

**Commerce.**—The general commerce for 1891 was valued at 4,970,754,000 marks for imports and 3,731,759,000 marks for exports. The value of the special commerce was 4,403,404,000 marks for imports and 3,339,755,000 marks for exports.

The following table shows the imports and exports of the special commerce for 1891 of the various classes of merchandise, in marks:

MERCHANDISE.	Imports.	Exports.
Animals.....	246,833,000	22,708,000
Animal products.....	120,491,000	22,549,000
Articles of consumption.....	1,266,474,000	416,226,000
Seeds and plants.....	40,469,000	25,973,000
Fuel.....	116,234,000	155,230,000
Fats and oils.....	244,970,000	29,695,000
Chemicals, drugs, etc.....	264,670,000	277,973,000
Stone, clay, and glass.....	59,864,000	112,664,000
Metals and metal wares.....	447,949,000	528,895,000
Wooden wares.....	204,088,000	108,942,000
Paper goods.....	14,296,000	88,237,000
Leather, etc.....	196,448,000	231,690,000
Textiles.....	1,016,644,000	954,867,000
India rubber, etc.....	84,567,000	25,023,000
Machinery and instruments....	65,343,000	156,901,000
Hardware, etc.....	33,414,000	56,898,000
Literature, art, etc.....	30,710,000	93,755,000
Various.....	.....	529,000
Total.....	4,403,404,000	3,339,755,000

The value of horses imported in 1891 was 73,525,000 marks; of swine, 71,996,000 marks; of wheat, 163,412,000 marks; of rye, 137,155,000 marks; of barley, 103,916,000 marks; of coffee, 219,820,000 marks; of petroleum, 65,391,000 marks; of raw hides, 98,890,000 marks; of raw cotton, 234,006,000 marks; of wool, 245,507,000 marks; of woolen yarn, 85,357,000 marks; of raw silk, 94,492,000 marks. The value of hops exported in the same year was 26,228,000 marks; of



sugar, 227,806,000 marks; of coal and coke, 148,398,000 marks; of aniline dyes, 44,267,000 marks; of wooden goods, 47,123,000 marks; of paper, 54,936,000 marks; of leather goods, 108,652,000 marks; of cotton cloth, 56,300,000 marks; of mixed silk and cotton cloth, 114,790,000 marks; of woolen fabrics, 148,140,000 marks; of hosiery, 87,155,000 marks; of ribbons and trimmings, 113,289,000 marks.

The commerce with the different foreign countries and the German free ports in 1891, in marks, is set forth in the following table:

COUNTRIES.	Imports.	Exports.
German free ports.....	17,636,000	54,472,000
Great Britain.....	676,810,000	696,066,000
Austria-Hungary.....	598,559,000	347,899,000
Russia.....	580,396,000	262,605,000
Netherlands.....	282,116,000	263,404,000
France and Algeria.....	261,878,000	237,998,000
Belgium.....	251,759,000	153,315,000
Switzerland.....	144,895,000	184,616,000
Italy.....	134,143,000	83,654,000
Norway and Sweden.....	71,997,600	113,541,000
Denmark.....	75,404,000	73,458,000
Balkan Peninsula.....	52,629,000	105,135,000
Spain.....	34,872,000	49,265,000
Portugal.....	12,417,000	16,192,000
British India.....	157,001,000	33,094,000
Rest of Asia.....	47,244,000	63,817,000
Africa.....	56,643,000	29,771,000
North and Central America....	473,096,000	333,605,000
South America and West Indies	411,934,000	132,327,000
Australia.....	39,185,000	23,487,000
Other countries.....	22,470,000	10,629,000
Total.....	4,403,404,000	3,339,755,000

**Navigation.**—During 1891 there were 68,747 vessels, of 14,799,937 tons, entered at all the German ports, and 68,652, of 14,795,738 tons, cleared. Of the vessels entered, 58,204, of 13,558,073 tons, were with cargoes, and 10,543, of 1,241,864 tons, came in ballast; of those cleared, 49,113, of 9,965,804 tons, were with cargoes, and 19,539, of 4,829,934 tons, went in ballast. Of the vessels entered, 5,484, of 4,440,819 tons, were British; 6,282, of 830,016 tons Danish; 3,068, of 646,496 tons, Swedish; 1,299, of 204,444 tons, Dutch; 1,104, of 450,816 tons, Norwegian; and 569, of 160,513 tons, Russian; while 43,620 vessels, of 7,529,700 tons, were flying the German flag. Of the vessels cleared, 5,483, of 4,450,132 tons, were British; 6,332, of 830,006 tons, Danish; 3,082, of 650,956 tons, Swedish; 1,256, of 202,002 tons, Dutch; 1,105, of 451,455 tons, Norwegian; and 630, of 181,808 tons, Russian; while 48,562, of 7,514,002 tons, sailed under the national colors.

The merchant navy, on Jan. 1, 1892, consisted of 3,639 vessels, of 1,468,985 tons. There were 809 sailing vessels, of 172,524 tons, and 387 steamers, of 154,605 tons, belonging to the Baltic ports, while 1,889 sailing vessels, of 531,750 tons, and 554 steamers, of 610,106 tons, belonged to the North Sea ports. The total number of sailors in the merchant navy in 1892 was 40,899.

**Railroads.**—The length of the German railroads open for traffic in 1892 was 26,627 miles, of which only 3,057 miles belong to private companies, and of these the Government worked 293 miles. The capital expended on railroads up to 1891 amounted to 10,510,359,000 marks; the receipts to 1,307,416,000 marks; the running expenses to 805,339,000 marks. In 1890-'91 there were 215,911,000 metric tons of goods and cattle

transported, paying 858,169,000 marks, while 426,056,000 passengers were conveyed, paying 345,832,000 marks.

**The Prussian Landtag.**—During the session of the Prussian Reichstag for 1893 additional measures were introduced to carry out the reforms in taxation which Dr. Miguel began two years before, when a new income-tax bill was passed (see "Annual Cyclopædia" for 1891). It went into effect at once, and its results exceeded the most sanguine expectations. It was estimated to yield 80,000,000 marks annually. Its actual yield exceeded 124,000,000 marks for the first year, which amount will be increased as the workings and requirements become better understood and enforced. A second bill, forming part of the financial reforms, passed in the same year, but not taking effect until Jan. 1, 1893, completely transforms the system of taxation on trades. According to this measure petty traders whose annual profits do not amount to 1,500 marks, or whose working capital is less than 3,000 marks, are free from taxation. Commencing with annual profits of 1,500 marks and a stock in trade or working capital of 3,000 marks, a progressive scale of taxation is provided for, divided into 4 classes, graduated according to annual profits and working capital up to 50,000 marks and 1,000,000 marks respectively. The highest class pays 1 per cent. in each case upon actual profits. The object of this measure was the relief of small traders and the heavier taxation of large undertakings.

The third link in Dr. Miguel's scheme of financial reforms was introduced and passed in 1893. The income tax having once been established, it was found equitable to deal differently with incomes derived from funded capital and those from unfunded capital, especially with a view of relieving incomes dependent upon the exercise of physical and intellectual abilities. Dr. Miguel called his bill supplementary to the income-tax bill, although in fact it is nothing less than a property tax. The bill fixes the rate of taxation on the capital value of all property at  $\frac{1}{2}$  of 1 per mille, which, taking 4 per cent. as a normal rate of interest, is equivalent to  $1\frac{1}{4}$  per cent. on the funded income represented by such capital. An approximate basis for this tax is derived from a calculation of the proportion of a man's average earnings, which during the thirty years of his life when he may be credited with the maximum power of productive work, he must set aside in order to secure, at compound interest, a capital producing the same funded income as he has previously derived from his earnings. A man having an unfunded income of 14,457 $\frac{1}{2}$  marks must set aside 4,457 $\frac{1}{2}$  marks annually at compound interest of 4 per cent. to have at the end of thirty years a capital of 250,000 marks yielding him a funded income of 10,000 marks, the same which he enjoyed during the thirty years of active life, deducting the 4,457 $\frac{1}{2}$  marks set aside annually; so that an unfunded income of 14,457 $\frac{1}{2}$  marks is equivalent to a funded income of 10,000 marks. Owners of property amounting in the aggregate to 6,000 marks, are exempt from the property tax. Due allowance being made for such exemptions, the total value of ratable property in Prussia is estimated at 73,800,000,000 marks, and the annual

yield of this tax is estimated at from 35,000,000 to 36,000,000 marks. Not only did Dr. Miguel insist that the property tax was advisable, but declared it absolutely necessary to enable him to carry out his last scheme of reform, which is that of a radical change of the system of local taxation. By this last measure the state relinquishes to the communes the whole of the direct taxes heretofore levied on real property, which yielded an annual revenue of 102,000,000 marks. This source of revenue is in future to be subjected only to local taxation as the requirements of local expenditures may appear. As a return for this concession the state will retain the whole amount of the surplus accruing to Prussia from the imperial duties on grain and cattle—about 45,000,000 marks—which was formerly in part granted in aid of the communes. This whole system of taxation reform in Prussia, when fully developed, is regarded as the most equitable and just mode of taxation in Europe.

A bill was introduced and passed which had in view a reform of the election laws. The electoral system in Prussia is of a highly plutocratic type. There are three distinct classes of electors in each district, as many of the largest taxpayers as together pay one third of the total amount of direct taxes forming the first class, as many of the smaller taxpayers as together pay the second third forming the second class, and the smallest taxpayers who together pay the remaining third of direct taxes forming the third class. These three groups each have an equal number of votes in returning the representatives of the district, who in turn elect the member of the Diet. The new bill does not by any means intend to abolish this, as Prince Bismarck called it, "most miserable of all electoral systems," but only introduced certain modifications which became necessary in view of the financial reforms. The only alterations made in the former system are that the contributions of the first, second, and third classes shall in future stand in the proportion of 5, 4, and 3. Instead of making only the direct state taxes the basis for the division of the three classes, the communal and provincial taxes will be included. A fictitious contribution is to be ascribed to every person who does not pay any income tax to the state, so that those persons who are not assessed will form the third class, and consequently five ninths of the total amount of direct taxation will fall on the first, and four ninths on the second class.

General elections were held on Oct. 31, 1893, for the lower house of the Prussian Diet. The elections went off quietly, the only parties carrying on an active campaign were the Conservative and the Radicals. The Conservatives made a strong propaganda on the ground of agrarian interests, and received the full support of the Agrarian League. The split in the Radical party showed itself to be as fatal in this election as it had been in the elections for the Reichstag. The final results show comparatively small changes. The Conservatives carried 148 seats, against 125 in the former Diet; the Free Conservatives, 62, against 66; the National Liberals, 88, against 87; the Ultramontane Center, 94, against 99; the Radicals, 20, against 29; the Poles, 18, against 15; the Danes, 2; and 1 member belongs to no party.

**The Army Bill.**—The all-absorbing question in German politics during the first half of the year 1893 consisted of the parliamentary struggle against the Army bill. The Government, considering an increase of the military forces necessary, introduced a bill into the Reichstag increasing the peace footing of the army from 486,983 men to a yearly average of 492,068 men. This increase on its face would not seem to be very important, but inasmuch as in the new peace effective noncommissioned officers and the one-year volunteers are excluded from its list—and, furthermore, taking into account the reduction of the time of active service from three to two years—the actual number of recruits every year demanded by the new bill was nearly 83,000. The additional expense for carrying the proposed plans into effect was estimated at 69,000,000 marks annually. The Government, in offering the two-year service for the former three-year active service, was unwilling, however, to make this provision legally binding, but wanted to make it optional with the Government to dismiss such men as it might think proficient in military drill after two years with the colors, and retain those for a third year who through bad behavior or inefficiency were not entitled to dismissal.

At the first reading of the bill it became apparent that the measure was opposed by considerable forces in the Reichstag. The only parties which pledged their support to the bill were the two branches of the Conservative party, and even these parties were dissatisfied with the bill on account of the two-year service clause. The National Liberals, the Radicals, the Social Democrats, and other smaller factions opposed the bill. The numerically strongest party by far in the Reichstag—the Centrum or Clerical party—did not commit itself either way at the first reading, but the speeches of the leaders of the party showed that the sentiment was strongly against the measure. In spite of this strong opposition, the Government hoped to secure a majority for the bill, and pointed out and urged the necessity for the increase of the military forces in order to put the army on an equal footing with that of France, which under existing circumstances was numerically stronger. The Opposition insisted that the people were unable to stand the increased taxation, and that the present taxes were already unbearable. The bill was referred to a committee, and discussed in detail and at length. Chancellor von Caprivi defended his measure heroically, and declared that the Government would not recede from its position, and would not agree to any compromise. Several compromises were offered, of which the most important were the one advanced by Dr. von Benningsen, the leader of the National Liberals, who offered to increase the army by 48,000 men, but insisted on the positive adoption of the two-year service clause; the other compromise offered originated with Eugen Richter, the leader of the Radicals, who offered to leave the army at its present strength, with the term of active service legally fixed at two years. Both compromises were rejected. Dr. von Benningsen's offer was rejected mainly because the National Liberals did not hold the balance of power, and even had his offer been accepted it would not have reconciled the Centrum, which held the



balance of power in the Reichstag. The committee on the Army bill finally rejected the important sections of the bill, and handed in its report. Shortly before the second reading of the bill, in the beginning of May, 1893, Freiherr von Hüne, a member of the Centrum, arrived at an agreement with Chancellor von Caprivi regarding a compromise. The compromise as agreed upon increases the army by 54,000 men for the first year, and progressively in installments up to 70,000 men, instead of the 83,000 which the Government wanted to add in a more rapid manner. The estimates of the additional expenses would thereby be reduced to 60,000,000 marks. The two-year term of service is legally fixed for five years, during which the new bill will be in force.

The Government hoped by accepting this compromise to win over a number of the more moderate members of all the opposing parties, and relied also upon members from the Centrum following Freiherr von Hüne. The Government was doomed to disappointment, however, as far as the Centrum was concerned. In a meeting held by the members of that party, on May 3, the Hüne compromise was rejected by a large majority. Count von Ballestrem, the leader of that party, resigned his leadership, and Count von Preysing-Lichtenegg-Moos, of Straubing, was elected to succeed him. It was then decided that the members should vote according to their individual convictions. On May 6 the final vote on the second reading of the bill was taken, and the Reichstag rejected the measure by a vote of 210 to 162. The minority supporting the bill was composed of the whole Conservative, Free Conservative, and National Liberal parties, reinforced by the Polish group, by 12 dissident members of the Centrum party, by 6 Radicals, and by a few members belonging to no recognized organization, among them the notorious Ahlwardt and 2 other professed Anti-Semites. Although the National Liberals had at first opposed the bill and their offer of compromise had been rejected, yet when it came to a vote they supported the Government to a man; the Polish group, consisting of 17 members who had formerly been identified with the Centrum, gave their votes for the Government by reason of certain concessions made to them in regard to educational matters. The Opposition majority was comprised of the whole Social Democratic vote, the great bulk of the Clerical party, the majority of the Radicals, 3 Anti-Semites, 4 clerical members from Alsace-Lorraine, and a few other unattached members.

As soon as the result of the vote was announced in the Reichstag, Chancellor von Caprivi arose from his seat and read an imperial message decreeing the dissolution of the Reichstag. New elections were ordered to be held on June 15.

**The Elections.**—Although the dissolution of the Reichstag was the result of the rejection of the Army bill by that body, yet that fact was largely lost sight of in the campaign. The different parties fought the election battles on party lines and principles, taking up the question of the Army bill only in cases where the voters demanded an exposition of the candidate's views. In their programme of elections, the German Conservatives, National Liberals, and

the Reichspartei favored the bill, while the Clericals and the Freisinnige, or Radicals, expressly declared against it. The large number of parties was further augmented by a split in the Radical party, and that in the Centrum or Clerical party. On June 15, on which day the elections took place, a decisive result was obtained in only 217 districts, while in 180 districts a second ballot became necessary, inasmuch as no candidate had received the required absolute majority of votes. The final distribution of seats among the different parties was as follows: Centrum, 100; German Conservatives, 68; Reichspartei, or Free Conservatives, 27; German Reform party, or Anti-Semites, 17; Poles, 19; National Liberals, 52; Radical People's party, 22; Radical Union, 13; Social Democrats, 43; South German Volkspartei, 11; Alsations, 8; Bavarian Farmers' Alliance, 4; Guelphs, 2; Danes, 1; and 5 members who are not connected with any party. An interesting feature of the elections was the decline of the Freisinnige or Radical party, which had split after the dissolution of the Reichstag and formed the Volkspartei and the Radical Union. Together the parties had held 68 seats, but in the new elections they only carried 35 seats together, of which 22 went to the Volkspartei and 13 to the Radical Union. Of the Volkspartei not a single candidate was elected on the first ballot. The Social Democrats gained 8 seats; they worked harder than any other party, and had their own candidate in almost every district. Among the prominent members of the old Reichstag who were defeated were Freiherr von Hüne, the originator of the compromise on the Army bill, and Dr. Stoecker, the leader of the Anti-Semites.

According to official statistics, the following were the total polls of the different parliamentary parties in the order of their aggregate numerical strength: Social Democrats, 1,786,738; Ultramontane Centre, 1,468,501; Conservatives, 1,038,353; National Liberals, 996,980; Advanced Radicals, or Volkspartei, 666,439; Free Conservatives, 438,435; the Anti-Semitic party of German Reform, 263,861; Dissident or Radical Unionists, 258,481; Particularists, 234,927; Poles, 229,531; South German Democrats, 166,757. The Social Democratic poll shows by far the largest absolute increase since 1890, viz., 359,440. The Center poll, after due allowance for the normal increase of population, remains stationary. The same condition exists as regards the Conservatives, with the qualification that they are credited in these returns with at least 200,000 Anti-Semitic votes which were cast in favor of candidates calling themselves Conservative Anti-Semites. The Radicals of both sections show an aggregate increase of 100,000, although the split cost them nearly half their seats, while the National Liberals have actually lost about 180,000 votes. A slight reduction is to be noted in the Particularist and the South German Democratic vote. Next to the Social Democrats, the Anti-Semites record the largest gains; and if the votes given to the Conservative Anti-Semites, as explained above, are added to those given to the more Radical faction of the so-called German Reformers, the Anti-Semitic vote will be found to have multiplied almost tenfold within the last three years.

As a plebiscite on the Army bill, the returns show that the people as a whole were against that measure. If the Conservatives, the Free Conservatives, the National Liberals, the Anti-Semites, the Dissident Radicals, and the Poles be counted as supporters of the bill, and the other parties as opponents, the latter obtained 4,323,362 votes, as against 3,225,641 of the former. In view of this fact, it is astonishing that, in spite of this popular feeling against the bill, the Government should have succeeded in passing the identical measure in the new Reichstag and obtaining a majority of 15 votes.

**The Adoption of the Army Bill.**—The new Reichstag was convened for July 4, 1893, and was opened in person by Emperor Wilhelm. In his opening speech the Emperor again called the attention of the Reichstag to the necessity of strengthening the military forces of the empire, and announced that a bill similar to the Hüne compromise would be introduced, which he asked the Reichstag to pass without unnecessary delay. The measures dealing with taxation were still under consideration, and would not be submitted until the fall session. He promised that the wishes regarding taxation, manifested during the debate on the former bill, should be complied with as far as was feasible without endangering the object in view. Accordingly, a bill was introduced by Chancellor von Caprivi by which the peace footing of the German army is to consist of 538 battalions and 173 half battalions of infantry, 465 squadrons of cavalry, 494 batteries of field artillery, 37 battalions of foot artillery, 23 battalions of pioneers, 7 battalions of railroad troops, and 21 battalions of train. The law was to go into effect Oct. 1, 1893, and to last for five years. Two years of active service are legally fixed as the term for five years. The discussion over the bill did not occupy much time, the arguments pro and con having been exhausted in the former session; and on July 15 the bill was adopted by a vote of 201 against 185. After the vote was taken the Reichstag immediately adjourned.

**Political Parties.**—The political parties in Germany have been growing in numbers to such an extent, and with so little difference in principles among some of them, that it is almost impossible to distinguish them. There are, however, 6 leading groups in the Reichstag, of which 2 are again subdivided, thus making 8 in all. None of these groups come near forming a majority, and the Government has to depend upon a coalition, formed through compromise, to carry on business. The foremost party and numerically the strongest is the Centrum, also called the Clerical or Ultramontane party. It consists of Roman Catholics, chiefly from south Germany and the Rhine provinces. During its struggle against Prince Bismarck on account of the Kulturkampf it gained success only by its unity and harmony, but since the death of its leader, Dr. Windhorst, it commences to show signs of disintegration. The numbers steadily increased from 63 in 1871 to 117 in the election of 1890, but at the election on June 15, 1893, it lost 17 seats, succeeding in electing only 100 members. The Conservative group is subdivided into German Conservatives and Free Conservatives or Reichspartei. The two parties, although formerly fol-

lowing practically the same principles, have of late years gone further apart than ever, so that to-day the Free Conservatives can hardly be distinguished from the National Liberal group, its principles having more in common with that party than with the German Conservatives. The Free Conservatives form the main support of the Government against parliamentary rule; they desire maintenance of the present relation of state and Church on the basis of the Protestant religion; they support the confessional character of the public schools, and the authorization of the Church to control religious instruction; they demand the reform of the state and local taxation system to the exemption of real property and building from taxation. Their numbers steadily decreased from 38 in 1871 to 20 seats in 1890. In the elections of June 15, 1893, they gained 7 seats, so that they will form a group of 27 members in the new Reichstag. The German Conservatives are equally strong adherents of the monarchy, and as such pledge themselves for the strengthening of the German empire, but inside of that unity demand that the independence and peculiarity of the various states be preserved; they further demand participation of the nation in legislation; local self-government on the basis of natural groups and organizations of the people; a confessional Christian school; an independent Protestant Church; and protection of the agricultural interest by a high protective tariff for cereals. In a convention held in 1892 Anti-Semitism was adopted in their platform. Their number in the Reichstag has varied between 21 in 1874 and 78 in 1887: they have since lost a few seats. In the elections of 1893 they carried 68 seats. The National Liberal party, standing for moderation, progress, independent thought, constitutional liberty and rights, and, as its name indicates, liberal tendencies, has seldom had the courage to stand up for its convictions. It once had a commanding number of deputies, namely, in 1874, when it held 150 seats. In the last Reichstag this number had dwindled down to 41, while in the elections of 1893 it carried 52 seats. The Freisinnige or Radical party is divided again into the Freisinnige Volkspartei or Radical People's party, and the Freisinnige Vereinigung or Radical Union. The larger of the two is the Volkspartei, following Eugen Richter. The principles of the two parties are practically the same; they stand for constitutional and parliamentary government, manhood suffrage, a secret ballot, freedom of speech and of the press, parliamentary control of finances, and a ministry responsible to the Reichstag. The Freisinnige party was formed in 1884 by the union of the Fortschrittspartei or Progressists and the Liberal Unionists, and consisted then of 64 members, in 1887 their number was reduced to 32, but in 1890 they succeeded in electing 66 of their members, while in the elections in 1893 both branches carried only 35 seats, of which 22 belong to the Volkspartei and 13 to the Radical Union. The Social Democrats now form quite a considerable party in the Reichstag; their principles are sufficiently indicated by their name, and their number increased from 2 members in 1871, and 11 in 1889, to 35 in 1890, and in 1893 they carried 43 seats. The last of the parties which require attention is the Anti-



Semites; their principles are set forth in their name. Although only a small party in the former Reichstag, they succeeded in electing 17 members to the Reichstag in the elections that were held in 1893.

**The Agrarian Movement.**—Ever since the retirement of Prince Bismarck, in 1890, the farming element of the empire has had cause to complain. Prince Bismarck's policy was that of protecting home produce, and of high duties on all cereals, so as to enable the German farmer to compete with the importers of foreign grain. The German soil, although fertile, requires careful preparation, and good results can only be acquired by hard work and at great expense, while the vast grain fields of Hungary, Russia, and India, not to speak of those of the United States, are comparatively virgin soil, yielding large crops with little outlay. As long as the protective tariff was kept up prices were fair; but since the so-called new *régime* negotiated the commercial treaties in the beginning of 1892, especially those with Austria-Hungary, by which the tariff on cereals was reduced in exchange for industrial advantages, large quantities of grain were put on the market at prices which threw the German farmer out of competition. In the fall of 1892 negotiations for a commercial treaty with Russia were opened, and the prospects of further concessions at the expense of the agrarian interests aroused the German rural economists to action. Farmers' alliances and leagues were formed in every part of the empire, and on Feb. 18, 1893, some 8,000 delegates from all parts of Germany gathered in Berlin to found a German Agrarian League.

The new league professes itself ready to receive co-operation from all parties except Radicals and Social Democrats. Its object is to protect and strengthen the German agrarian interests. Its programme is as follows: 1. Sufficient tariff protection for the produce of agriculture and its side branches. 2. No reduction of existing tariff duties; no commercial treaties with Russia or other countries by which agrarian duties may be reduced, and a corresponding regulation of the relations with the United States. 3. Indulgence with the agricultural trades respecting taxation. 4. Exclusion of animal imports from countries suspected to be infected with plagues. 5. Adoption of bimetallism as an effective protection against the retrogressive prices of agricultural produce. 6. Lawfully regulated representation of agrarian interests by the formation of chambers of agriculture. 7. Revision of the laws dealing with domicile, the right of emigrating without paying duty, and breach of contract on the part of workmen. 8. Revision of the laws dealing with the protection of workmen, abolition of the stamp duty, and cheaper administration. 9. Closer control of the grain exchange by the Government, to prevent the arbitrary fixing of prices. 10. Improvement of private and public rights as well as of the mortgage system of the real-estate and homestead laws. 11. Disincumbrance of the branches of rural local administration. By a resolution adopted in the same meeting, it was determined that in future parliamentary elections no candidate should receive the support of the league who did not pledge himself to its programme, and

promise to subordinate all other considerations to the defense of agrarian interests.

After the elections for the new Reichstag, on June 15, it was found that of the 392 members constituting the body, 130 belonged to or had joined the German Agrarian League. Of these, 60 belonged to the German Conservative party, 25 to the Reichspartei, 19 to the National Liberals, and 26 to the Anti-Semites and the Wilden or Independents.

**Session of the Reichstag.**—The regular session of the new Reichstag was opened on Nov. 16, 1893. In his speech from the throne Emperor Wilhelm thanked the members of the Reichstag for passing the Army bill, and for their patriotism in providing for the development of military institutions, which, for the security of the empire, had become necessary. He then announced the introduction of measures which are to regulate the financial relations between the empire and the single states, and to provide for the additional expenditures occasioned by the increase of the military forces. The Emperor concluded by expressing the hope that, with God's aid, the blessings of peace would be in the future preserved to Germany. The bill dealing with the regulation of the financial relations between the empire and the single states was submitted to the Reichstag shortly after the opening of the session. Hitherto the states supplied the deficiency in the imperial treasury by matricular contributions, while the Federal Government turned over to the states the surplus of the customs over and above the amount of 130,000,000 marks. Under the new bill the credit to the single states in the annual accounting is fixed at 40,000,000 marks. Any surplus over and above that sum shall be devoted to the formation of a fund to provide for deficiencies which may occur in other years, and for creating a sinking fund for the public debt of the empire. In case the new sources of revenue should prove inadequate to cover the ordinary expenditures of the Government, the imperial treasury is empowered to levy additional percentages on the excise duties.

The bills dealing with the opening up of new sources of revenue to the Government provide for taxes on tobacco and wine, bourse taxes, and taxes on lotteries, and on receipts, check stamps, and bills of lading. It is estimated that the tobacco tax will yield 45,000,000 marks, wine, 17,000,000 marks; bourse taxes, 11,000,000 marks; lotteries, 5,400,000 marks; receipts, 7,000,000 marks; check stamps, 800,000 marks; and bills of lading, 9,000,000 marks.

On Dec. 1 Count Hompesch, a member of the Clerical party, moved the revocation of the decree ordering the expulsion of Jesuits from Germany, which was issued in 1872. The motion was opposed by the members of the National Liberal party, the Free Conservatives, the bulk of the Conservatives, and a section of the Radicals. The Centrum, the Poles, Alsatians, Socialists, most of the Radicals, and two Conservatives supported the motion, which, being put to a vote, was carried by 173 to 138.

**Commercial Treaties.**—During the summer of 1892 the Russian Government approached the German Government for closer commercial relations. Delegates of both empires met at Berlin

and endeavored to arrive at an understanding. Russia finally proposed a provisional treaty until Dec. 31, 1893, and in the meantime to appoint another committee to arrive at some definite understanding. The Russian proposals were not acceptable to Germany, and, as a consequence, Russia declared her maximum tariff in force against Germany, beginning with Aug. 1, 1893. This maximum tariff raised the duties 15, 20, and 30 per cent. over the ordinary tariff. Germany retaliated by raising her tariff 50 per cent. on all Russian imports. Russia, in reply, raised her duties another 50 per cent. and added 1 ruble per ton on the lastage of vessels under the German flag entering Russian ports and harbors. Although in some respects Germany suffered under this tariff war, yet it had not the effect expected by Russia, inasmuch as the principal import from Russia, viz., grain, was procured from other sources, principally the United States. The German industry suffered somewhat, but, on the whole, Russia seemed to be the heaviest loser. In the meantime negotiations were taken up again, and an agreement was finally arrived at between the two governments. Germany grants the same concessions to Russian grain which Austria enjoys, and a reduction of taxes on oats and rye is conceded. Russia reduces her tariff on iron, zinc, and steel 10 per cent., and on agricultural machinery 20 per cent. A reduction of the tariff on coal is also granted; however, the tariff on sea-borne coal and steel rails is not reduced. The bitter opposition to the Russian treaty inaugurated by the Agrarians and taken up by the Conservatives makes the adoption of this treaty by the Reichstag uncertain, and a union formed between the Conservatives and the Clericals to oppose the treaty, formed on Dec. 30, 1893, might determine its fate adversely.

Commercial treaties with Spain, Roumania, and Serbia were concluded and adopted by the Reichstag, Dec. 15, 1893, in spite of the opposition of the Agrarians.

**International Sanitary Conference.**—An International Sanitary Conference was held in Dresden in March, 1893, and formed the sequel or development of that held in Venice in 1892 (see ITALY, "Annual Cyclopædia" for 1892). The work accomplished may be divided into two sections. The first section contains preventive measures to be taken against cholera as regards passenger and goods traffic. The second section deals with the sanitation at the mouth of the Danube, similar to the regulations adopted at the Venice Conference for Alexandria and the Red Sea. The first section contains provisions for the interchange of official information between the signatory powers as to the appearance, progress, and preventive measures adopted by the several states. In future old clothes, bedding, soiled linen, and rags shall alone become immediately liable to exclusion; importation of other articles shall only be prohibited under special regulations. Land quarantine is regarded as futile by the conference, while quarantine upon arrivals by sea is fixed within certain limits. Ships are to be regarded as infected only if cases have actually occurred on board during the last seven days of the voyage, and as suspect where cases have occurred prior to the last seven days. Other ships, although arriving

from infected ports, are not to be detained as long as they are free from suspicious cases, subject to the right of the local authorities to impose reasonable measures of disinfection and a term of medical observation not to exceed five days from the date of sailing. The term of five days' medical observation from the date of landing is fixed for passengers and crews arriving on infected ships or such as are classed as suspect. The following countries were represented at the conference: Germany, Russia, France, England, Italy, Spain, Portugal, Sweden and Norway, Denmark, the Netherlands, Belgium, Austria-Hungary, Montenegro, Serbia, Turkey, Greece, Roumania, Switzerland, and Egypt.

**The Duke of Saxe-Coburg-Gotha.**—The death of Duke Ernest II of Saxe-Coburg-Gotha, on Aug. 22, 1893, brought to the throne of that duchy an English prince. Duke Ernest was born June 21, 1818, and succeeded to the throne on the death of his father, Jan. 29, 1844. He was a brother of Prince Albert, the husband of the present Queen Victoria of England. According to the latter's marriage settlement, their second son was to succeed to the throne of Coburg in case Duke Ernest should die childless. This event having taken place, Queen Victoria's second son, the Duke of Edinburgh, ascended the throne of Coburg on Aug. 23, 1893. Alfred Ernest Albert, Duke of Edinburgh, was born at Windsor Castle, Aug. 6, 1844, studied modern languages at Geneva, entered the naval service in 1858, and after long years of distinguished service was promoted in 1882 to the rank of vice-admiral of the British fleet, which position he resigned on becoming Duke of Saxe-Coburg-Gotha. In 1862 he was offered the throne of Greece, but declined the offer. On Jan. 23, 1874, he married the Grand Duchess Marie Alexandrovna, only daughter of Czar Alexander II of Russia. Of the marriage there are issue surviving one son, Prince Alfred, and four daughters. The Duke of Edinburgh took the oath of allegiance to the Constitution on Aug. 23, 1893, in the presence of the whole ministry and Emperor Wilhelm II of Germany.

**Foreign Dependencies.**—Since the year 1884 Germany has extended her territory beyond that of Europe, and although she has not what might be properly called colonies, yet the German Government has established a protectorate over areas in Africa and the western Pacific. All told, Germany's foreign dependencies may be estimated at 966,150 square miles, having a population of 5,510,000. Togoland, Little Popo, and Porto Seguro have an estimated area of 16,000 square miles, being inhabited by about 500,000 people. The budget of 1892-'93 for Togoland places the receipts at 116,000 marks, of which 112,000 marks is derived from customs and other taxes, and 4,000 marks from different administrative sources. The expenses amount to 116,000 marks, of which 8,700 marks were for the administration—i. e., salaries, etc.—48,800 marks for materials, 160,000 marks for extraordinary expenses for public works, and 2,500 marks went to the reserve fund. The imports into Togoland in 1891 amounted to 1,374,950 marks, and the exports to 1,946,656 marks. The principal articles of export and their values were: Palm seeds, 1,181,000 marks; palm oil, 493,000 marks;



ivory, 267,000 marks; corn, 43,000 marks. In 1891 the number of vessels which entered and cleared the ports of Togaland was 167, of 161,820 tons; of which 72, of 74,847 tons, were German.

The Cameroons, on the Bight of Biafra, has an estimated area of 130,000 square miles, and a population of about 2,600,000. The protectorate was established in 1884, and the country is governed by an imperial governor, assisted by a chancellor, two secretaries, and a local council of three representative merchants. The country is fertile; cacao and tobacco are cultivated advantageously, and ivory and palm oil form the chief articles of trade. The revenues and expenditures for 1893 amounted to 566,000 marks. The imports for 1891 amounted to 4,547,406 marks, while the exports amounted to 4,306,625 marks. The principal articles of export and their values were: India rubber, 1,234,000 marks; palm oil, 1,181,000 marks; palm seeds, 1,155,000 marks; ivory, 597,000 marks; tobacco, 53,000 marks. In 1891 there were 82 vessels of 92,832 tons, entered and cleared at the ports of the Cameroons. In the beginning of 1893 Baron von Stetten was sent on a mission into the *Hinterland* of the Cameroons. He set out from Balinga on March 23, and went to Kifi, whence he was summoned by the Emir of Adamawa to Yola. In his report of this interview Baron von Stetten states that the Emir of Adamawa expressly acknowledged the predominant German influence over his territory, and that only Germans would be allowed to acquire any rights or build any stations in his territory. This declaration on the part of the Emir is important, on account of the endeavors of the French to gain influence over that section of the country; and when Lieut. Mizon, in behalf of the French Government, arrived at Yola some six weeks later, an interview with the Emir was denied him; and, furthermore, Baron von Stetten communicated to him the results of his negotiations with the Emir. Lieut. Mizon gave a written acknowledgment of the receipt of the communication. Baron von Stetten returned to the coast in October. The frontier question between Germany and Great Britain, regarding the frontier between the Cameroons and the Oil Rivers Protectorate, was finally settled by an agreement signed by the two powers on April 30, 1893. By the Anglo-German agreement of 1886 the boundaries between the British and German spheres of influence gave to Germany both banks of the Rio del Rey, which was then believed to be a river. Since then it was discovered that the so-called river was nothing but a creek about nine miles long, and a new delimitation became necessary. In 1890 a provisional boundary was established, running from the northernmost point of the Rio del Rey creek to the rapids of the Cross river, and thence to Yola, on the Benue. The new agreement is officially declared to be for the settlement of various questions affecting the fiscal interests of Germany and Great Britain in their respective territories in the Gulf of Guinea.

The agreement consists of the three following articles:

I. That the point named in section 2. Article IV, of the Anglo-German agreement of July 1, 1890, as the head or upper end of the Rio del

Rey creek, shall be the point at the northwest end of the island lying to the west of Oron, where the two water ways named Urifian and Ikankan on the German Admiralty chart of 1889-'90 meet.

II. From this upper end of the Rio del Rey to the sea—that is to say, to the promontory marked West Huk on the above-mentioned chart—the right bank of the Rio del Rey water way shall be the boundary between the Oil Rivers protectorate and the colony of the Cameroons.

III. The German colonial administration engages not to allow any trade settlements to exist or be erected on the right bank of the Rio del Rey creek, or water way. In like manner, the administration of the Oil Rivers Protectorate engages not to allow any trade settlements to exist or be erected on the western bank of the Bakassy peninsula from the first creek below Arsibon's village to the sea, and eastward from this bank to the Rio del Rey water way.

This agreement was made mainly for the purpose of enabling the German and British administrations to cope with the widespread smuggling which was carried on in the district.

German Southwest Africa extends for about 930 miles along the coast. It has a total area of 340,000 square miles, and the population is estimated at 250,000. The southern half of the territory is called Deutsch Namaland, and the northern half Deutsch Damaraland. The budget for 1893 places receipts and expenditures at 297,000 marks. On July 10, 1893, an engagement took place near Naos in Damaraland, between the German colonial troops and the followers of the chief Hendrick Witbooi, who had been engaged in destroying German property since the storming of his stronghold Homkranz, on April 12, by Capt. von François, the German Imperial Commissioner for Southwest Africa. Witbooi's followers were routed, but the troops were unable to capture the chief. The German Government decided to adopt strong measures to free the country from the depredations of Witbooi and his followers.

(For German East Africa, see EAST AFRICA.)

The German possessions in the Pacific are: Kaiser Wilhelm's Land, the Bismarck Archipelago, the Solomon Islands, and the Marshall Islands, altogether with an area of about 251,420 square kilometres, and a population of about 400,000.

**GIFTS AND BEQUESTS.** The following list comprises the most notable gifts and bequests for public purposes, of \$5,000 each and upward in amount or value, that were made, became operative, or were completed in the United States during the year 1893. The known value of all exceeds \$29,000,000.

**Alexander, Mrs. Charles**, of New York city, gift to the College of New Jersey, a new commencement hall, cost more than \$300,000, completed in 1893.

**Alumni and Friends** of the College of New Jersey, gift to the college, a hospital, to be known as Isabella McCosh Infirmary, completed in 1893.

**Alumni Association**, School of Mines of Columbia College, gift for establishment of a Trowbridge fellowship in engineering, \$10,000.

**Alumni** of Yale University, gift of a gymnasium, cost \$220,000, formally presented Jan. 23, 1893.

**Anonymous friend**, through Prof. Hewett, gift, to Cornell University, the library of 18,000 volumes on

philology and linguistics, of Prof. Zarueke, of the University of Leipsic.

**Argentine Republic**, Government of, gift to the School of Biology of the University of Pennsylvania, the collection of native woods exhibited at the World's Fair; estimated value, \$150,000.

**Ashmead, Clara B.**, of Philadelphia, Pa., bequests to charitable, religious, and Lutheran Church institutions \$61,000, and to Germantown Hospital and Lutheran Orphan Home, improved real estate.

**Babcock, George H.**, of Plainfield, N. J. (died Dec. 16, 1893), bequests for establishment of the Plainfield Public Library, \$10,000; for the support of the Babcock Scientific Library, three brick houses; and to the trustees of the Seventh-Day Baptist Memorial fund, for schools and institutions, \$200,000.

**Bachman, Mrs. Margaret**, of Hudson, N. Y., bequest to the Board of Church Extension of the Lutheran Church, \$6,500.

**Ballentine, Robert F.**, of Newark, N. J., gift to Rutgers College, New Brunswick, N. J., of a gymnasium building and apparatus, cost \$50,000.

**Beck, Charles Bathgate**, of New York city (died Oct. 11, 1893), specific bequests to charitable and educational institutions, \$163,000; and residuary estate, expected to aggregate \$3,500,000, to Columbia College, the Board of Home Missions of the Presbyterian Church, the Presbyterian Hospital, the New York Hospital, and the Society for the Prevention of Crime.

**Beckwith, Henry T.**, of Providence, R. I., bequests to institutions of the Prot. Episcopal Church, \$13,000.

**Bemis, George**, bequest to Harvard University, for a professorship of international law, made available by the death of Mrs. Sarah W. Bemis, \$50,000.

**Benham, Sarah**, of Greenport, N. Y., bequests to societies of the Reformed Church, \$25,000, and, conditionally, 14 per cent. in addition.

**Billings, Edward C.**, United States District Judge for Louisiana, bequest to Yale University for establishment of the Emily Sanford professorship of English Literature, \$70,000. See OBITUARIES, AMERICAN.

**Blake, Rev. John**, of New York city, specific bequests to institutions of the Protestant Episcopal Church, \$55,000, and residuary estate to specified charitable societies of that Church in New York city.

**Bliss, George**, of New York city, gift to St. John's Protestant Episcopal parish of Northampton, Mass., a granite church building furnished, \$100,000.

**Boardman, Judge, A. M.**, widow and daughter of, gift to the Law School of Cornell University, in Boardman Hall, Feb. 14, 1893, the law library of the late Nathaniel C. Moak, of 13,000 volumes, said to have cost him \$75,000. For sketch of Mr. Moak and description of his library, see OBITUARIES, AMERICAN, in "The Annual Cyclopædia for 1892."

**Bradbury, Mrs. Sarah C.**, of Saco, Me., bequests to Hon. Hampden Fairfield, as trustee, for distribution among specified religious, benevolent, and educational institutions, her entire estate of \$200,000.

**Brokaw, Isaac V.**, of New York city, gift to the Madison Avenue Reformed Church, a mission building to accommodate the industrial school and day nursery of the church, and also to contain a chapel, meeting, and reading rooms.

**Brown, Mrs. Anna E.**, of Quincy, Ill., bequests for the establishment in Quincy of a Home for Friendless Aged People, her residence property and \$55,000; to the Quincy Humane Society, her diamonds and \$5,000; to Illinois Humane Society, \$25,000; to Connecticut Humane Society, \$15,000; to Louisiana Humane Society, \$15,000; to Massachusetts Humane Society, \$5,000; and to local orphanages, \$10,000.

**Brown, Mrs. Harriet E.**, of Baltimore, Md., bequests to Presbyterian Church charities, \$42,000.

**Burrage, Alvah H.**, of Boston, Mass., bequest to the New England Hospital for Woman \$10,000, and the Leominster Public Library, \$5,000.

**Capen, Mrs. Margaret A.**, of Boston, Mass., bequests to benevolent institutions in the State, \$50,000.

**Carleton, James H.**, of Haverhill, Mass., bequests to religious and educational institutions, \$131,800.

**Carnegie, Andrew**, of New York, gift for relief of the needy in Pittsburg, Pa., a duplication of the amount otherwise raised for that purpose; value of pledge on Dec. 28, \$60,794.90.

**Carpenter, Mrs. George W.**, of Philadelphia, Pa., gift to the Academy of Natural Sciences of a collection of birds, minerals, and fossils, the life work of her husband.

**Collins, William**, of Brooklyn, N. Y., bequests to congregations and institutions of the Methodist Episcopal Church, \$150,000.

**Converse, E. S.**, of Malden, Mass., gift to the Young Men's Christian Association for a new building, \$10,000 if the cost is fixed at \$40,000, and \$5,000 for every \$10,000 additional cost up to \$80,000. He had previously given the city a costly park and a library as a memorial of his son, and bore half the cost of the new Baptist church.

**Corean Government**, gift to the Peabody Academy of Sciences, Salem, Mass., of its World's Fair exhibits of musical instruments and other articles.

**Crerar, John**, of Chicago, Ill. (died Oct. 19, 1889), bequest, residue of his estate, estimated at \$2,500,000, to trustees for erection and endowment in Chicago of the John Crerar Public Library, from which sensational and skeptical works are to be excluded. The will was contested on account of this bequest, but was sustained by the Supreme Court, June 20, 1893.

**Outler, Henry**, of North Wilbraham, Mass., gift to Colorado College, \$7,500.

**Dahlgren, Mrs. John Vinton**, of New York city, gift to Georgetown University, Washington, D. C., of the Chapel of the Sacred Heart, cost of building and furnishings, \$50,000.

**Dales, Rev. John B.**, D. D., of Philadelphia, Pa., specific bequests to institutions of the United Presbyterian Church, \$11,500, and his residuary estate to the Board of Foreign Missions of that Church.

**Dougherty, Catharine L.**, of Philadelphia, Pa., bequests, subject to the life interest of a sister, to benevolent institutions, principally of the Presbyterian Church in Philadelphia, \$8,500.

**Drexel, Anthony J.** See OBITUARIES, AMERICAN.

**Eckert, Emily**, of Philadelphia, Pa. (died December, 1891; will executed February, 1893), bequests to city, State, and Presbyterian charitable and benevolent institutions, \$271,000, and to the Presbyterian Hospital and the Presbyterian Home for Women, her residuary legatees, \$206,213 each.

**Eldridge, Mrs. Ellen Battell**, of Yarmouth, Mass., bequests to Yale University for a professorship of music, \$20,000; for graduate scholarships, \$24,000; for the library, \$10,000; and to religious organizations, \$50,000.

**Feenan, Mary**, of Salem, Mass., bequests to Roman Catholic institutions, \$27,000, and to the city of Salem, to furnish coal for the poor in South Salem, \$6,000.

**Field, Marshal**, of Chicago, Ill., gift to found the Columbian Memorial Museum of Natural History, in Chicago, \$1,000,000, on condition that other citizens subscribe \$500,000, and that holders of World's Fair stock contribute \$2,000,000 of their holdings.

**Fish, Hamilton**. See OBITUARIES, AMERICAN.

**Fiske, Josiah M.**, of Newport, R. I., bequests to the Hahnemann Homœopathic Hospital, the Ladies' Christian Union, and the Society for Relief of the Ruptured and Crippled, New York city, \$5,000 each.

**Fiske, Mrs. Josiah M.**, of Newport, R. I., gift to Barnard College, for the endowment fund, \$5,000.

**Foster, Mrs. Nancy S.**, of Chicago, Ill., gift to the University of Chicago, for a woman's dormitory, \$10,000 added to a previous gift of \$50,000.

**Freeman, Mrs. Clarissa A.**, of Stoneliam, Mass., bequests to benevolent institutions, principally in Massachusetts, \$14,000.

**French Government**, gift to the State of New York, the French educational exhibit at the Columbian Exhibition.

**Friends of the Teachers' College** of New York city, gifts, including building lots valued at \$125,000 from George W. Vanderbilt, and pledge from a lady whose



name is withheld, to build and equip quarters for a department of mechanic arts and of farm study and drawing (to cost \$200,000), \$500,000.

**Friends of Tufts College**, College Hill, Mass., pledge to build and equip a new structure for the Emergency Hospital of the College, to cost \$100,000.

**Gage, Alva**, of Charleston, S. C., gift to the Unitarian church, a brick parish house, cost over \$11,000.

**Gardner, Dr. Joseph**, of Bedford, Ind., gift to the American Red Cross Association, for a national base of supplies, a stocked farm of 700 acres in Indiana.

**General Theological Seminary**, New York city, friends of the, gift to the seminary of the Copinger collection of Latin Bibles, comprising 543 editions in 1,364 volumes, believed to be the largest collection of its kind in the world.

**German Government**, gift to the States of New York, Pennsylvania, and Wisconsin, portions of its educational exhibit at the World's Fair.

**Gerry, Elbridge T.**, of New York city, gift to the Commissioners of Charities and Correction, a solarium for the benefit of the inmates of the Charity Hospital, on Blackwell's Island, as a memorial to a dead daughter; cost, equipped, about \$7,000.

**Gillies, William**, of New York city (died March 4, 1893), bequests to the American Bible Society and the American Tract Society, \$5,000 each, and to the Howard Mission and the American Missionary Association, \$150,000, in equal parts.

**Glover, Henry R.**, of Cambridge, Mass., bequests to institutions in the Baptist Church, \$26,500.

**Goldthwaite, Willard**, of Salem, Mass., bequest to Tufts College, for establishment of a professorship of rhetoric, \$25,000; to the same, his residuary estate, to enable needy students to obtain an education.

**Gratz, Hyman**, of Philadelphia, Pa., bequest to the Mickoe Israel Congregation, to perpetuate the memory of his sister Rebecca, a sum exceeding \$100,000; bequest became operative in October, 1893.

**Green, Mrs. John C.**, of New York city, bequests to the Lawrenceville (N. J.) Preparatory school, John C. Green foundation, \$100,000; the New York Society for the Relief of the Ruptured and Crippled, \$50,000; the New York Female Bible Society, \$20,000; and the University Place Presbyterian Church, \$10,000 and her pew, valued at \$1,000.

**Gurney, Mrs. Lillie**, of Waterville, Me., bequest, of residue of estate to Colby University, \$275,000.

**Hart, Mrs. Dr. E.**, of Hartford, Conn., bequest to the medical school of Yale University, \$25,000.

**Hecker, John V.**, for the Hecker-Jones-Jewell Milling Company, of New York city, gift, for distribution among the needy under the direction of the Charity Organization Society, 25,000 bags of flour.

**Hitchcock, Hiram**, of New York city, gift to Dartmouth College, a hospital comprising three buildings and a surgical operating theater, erected in memory of his wife, and dedicated May 3, 1893.

**Hubbard, Thomas H.**, of Boston, Mass., gift to Hallowell, Me., a public library building, cost \$50,000.

**Hunt, Mrs. E. K.**, of Hartford, Conn., bequest to the Medical School of Yale University, \$25,000.

**Hussey, Curtis G.**, of Pittsburg, Pa., bequests for the destitute women of Pittsburg and Allegheny, \$50,000; to the Peace Association of the Society of Friends in the West, the Hussey School in Matamoros, Mexico, the Asylum for Colored Children in Allegheny, and the Foreign and Christian Missions Societies in Mexico, \$5,000 each.

**Ickelheimer, Isaac**, of New York city, bequests to local Hebrew benevolent institutions, \$10,000.

**Ingalls, David**, Springfield, N. Y., bequests to Presbyterian Missions, \$350,000; and to Presbyterian Board of Relief, \$50,000; will contested and sustained.

**Jeanes, William C.**, of Philadelphia, Pa., bequest to the Wills Eye Hospital, \$25,000.

**Johnson, Mrs. Catharine**, of California, bequest to Archbishop Riordan, of San Francisco, for the endowment of a free hospital in that city, one third of her estate of \$2,000,000.

**Keeney, Mrs. Mary Jeanette**, of Hartford, Conn., bequests to Christ Church, \$30,000; to Trinity College, \$25,000; to the Wadsworth Athenæum, as a fund the interest of which is to be used for the purchase of art works, \$25,000; to six local institutions, \$10,000 each; and to the new building fund of Trinity Church, \$10,000.

**Kennedy, John Stewart**, of New York city, gift to a board of trustees representing the Children's Aid Society, the New York City Mission and Tract Society, the Association for Improving the Condition of the Poor, and the Charity Organization Society, a building for the joint use of the societies, on the corner of Fourth Avenue and Twenty-second Street, to be known as the United Charities Building, which cost, with the ground, \$700,000. Dedicated March 6, 1893.

**Kessler, Henry**, of Philadelphia, Pa., bequests to institutions in the Methodist Church, \$80,000; also to the Methodist Hospital his residuary estate.

**Lafon, Thomas**, colored, of New Orleans, La., bequests to local and State charitable institutions, in sums of \$5,000 to \$20,000, the greater part of his estate, estimated to be worth from \$400,000 to \$600,000.

**Leiter, L. Z.**, of Chicago, Ill., gift to the Columbian Memorial Museum, \$100,000. See FIELD, MARSHAL.

**Lippincott, William V.**, of Philadelphia, Pa., bequests to the Protestant Episcopal Church of St. Mathias, \$33,500; the Hospital of the Protestant Episcopal Church, \$15,000; to sixteen denominational and public institutions, \$5,000 each; to four institutions, conditionally, \$5,000 each; and to the Protestant Episcopal Hospital, the residue of his estate, if any.

**Lord, Helen A.**, of Philadelphia, Pa., bequests for specific charitable endowments, \$10,500.

**Low, Abiel Abbott**, of Brooklyn, N. Y. See OBITUARIES, AMERICAN.

**Low, Seth**, President of Columbia College, gift to the Phillips Brooks Memorial fund of Harvard University, \$5,000.

**Lyman, E. H. R.**, of New York city, gift to the city of Northampton, Mass., an Academy of Music costing \$100,000, accepted Feb. 7.

**March, Mrs. Mary T.**, of Poughkeepsie, N. Y., bequests to Porter Academy, Charleston, S. C., \$10,000; Bellevue Hospital, New York city, \$10,000; Louise Home, Washington, D. C., \$10,000; and Grace Church, New York city, for erection of "John Payne March Memorial Hospital," residue of her estate.

**Metcalf, Jesse**, of Providence, R. I., gift to the Rhode Island School of Design, a new building; dedicated Oct. 24, 1893.

**Montgomery, Alexander**, of San Francisco, bequest to the Presbyterian Theological Seminary of the Pacific, greater part of estate, estimated at \$3,000,000.

**Page, Mrs. Thomas Nelsen**, of Washington, D. C., gift, to the Chicago Institute, the gallery of pictures collected by her first husband, Henry Field; value, \$300,000. The paintings are to be kept together in a special "Henry Field Memorial Room."

**Palmer, Potter**, of Chicago, Ill., pledge, to the Board of Lady Managers of the World's Columbian Exhibition, to erect a permanent Women's Memorial building at a cost of not less than \$200,000, as soon as a site is obtained.

**Pardee, S. W.**, of Hartford, Conn., bequests to Trinity College, \$25,000, and contingent interest.

**Peddie, Mrs. Sarah Ogden**, of Newark, N. J. (died May 29, 1893), bequests to the Peddie Institute in Hightstown, N. J., \$100,000; the Peddie Memorial Baptist Church in Newark, \$50,000; the New Jersey Baptist Home, \$10,000; and local institutions, \$6,000. The Peddie Institute and Peddie Memorial Church were founded by her husband, Thomas B. Peddie.

**Perkins, Katherine Page**, of Boston, Mass., bequests to Harvard University, for a dormitory, as a memorial to Daniel, Richard, and William Foster Perkins, \$150,000; to the Boston Homœopathic Hospital, \$12,000; to various religious and charitable organizations in Boston, \$13,000; and to the Massachusetts Institute of Technology, Boston Museum of Fine Arts, Women's Educational and Industrial Union, and the Harvard



Annex (now Radeliffe College), the residue of her estate.

**Perry, Mrs. Frances D.**, of Southport, Conn., bequests to Trinity Episcopal Church, \$10,000 in cash and \$24,000 as a fund, for charitable purposes, and to the Methodist Episcopal and Congregational churches, all of Southport, \$10,000 each.

**Piersen, Mrs. Martha A.**, of Philadelphia, Pa., bequests to Presbyterian institutions, \$4,500, and to the Hahnemann Medical College, \$1,000.

**Plumb, Horace S.**, of Bridgeport, Conn., gift for the purchase of a lot and the erection of a library in Shelton, Conn., in memory of his brother, David W. Plumb, \$25,000.

**Pend, Mrs. Harriet N.**, of Hartford, Conn., bequests to the Connecticut Prison Association, \$15,000; to missionary, educational, and benevolent organizations, \$20,000; and to Center Church, for a home for indigent men of American birth, the reversion of \$30,000.

**Pulitzer, Joseph**, of New York city, gift to the new building fund of Columbia College, \$100,000.

**Pullman, George M.**, of Chicago, Ill., gift to the city, a bronze memorial group commemorating the Fort Dearborn massacre in 1812; unveiled June 22, 1893.

**Rockefeller, John D.**, of Chicago, Ill., gift to the University of Chicago, for the equipment fund, \$150,000.

**Rogers, George P.**, Prohibition candidate for Governor of Connecticut, bequests, to prohibition, temperance, and Congregational organizations, \$11,000.

**Rogers, Henry H., Jr., Rogers, Mary H., Reger-Duff, Mrs. Clara, Rogers-Benjamin, Mrs. Annie E.**, children of the late Henry H. Rogers, of New York city, united gift to the town of Fairhaven, Mass., of a free public library, as a memorial of their sister, Millicent G. Rogers; estimated cost, \$185,000.

**Rosenberg, Henry**, of Galveston, Texas, (died May 12, 1893), bequests to the Benevolent Administration Waisenamt Bilten, Canton Glarus, Switzerland, for educational and charitable purposes, \$50,000; to the Gemeinde Bilten, same place, for the same purposes, \$30,000; to the Island City Protestant and Israelitish Orphan Home in Galveston, for building, \$30,000; to Grace Church parish (Protestant Episcopal), Galveston, for a new church, \$30,000; to the Ladies' Aid Society of the German Lutheran Church, Galveston, \$10,000; to procure and furnish a women's home in Galveston, \$30,000; to purchase or erect a building for the Young Men's Christian Association of Galveston, \$65,000; for the erection in Galveston of a monument to the memory of the heroes of the Texas revolution (1836), \$50,000; for the erection of at least ten drinking-fountains in Galveston for man and beast, conditionally, \$30,000; and for the endowment of a free public library and free lectures on practical subjects in Galveston, at the end of two years after his death, the residue of his estate, which, it was thought, would amount to \$275,000.

**Rethschild, Max M.**, of Chicago, Ill., bequest to local charities, \$100,000, carried out by his widow.

**Rowland, Mrs. Anna**, of Boston, Mass., bequests to Roman Catholic charitable and educational institutions, \$6,500.

**Buppaner, Antoine, M. D.**, of New York city (died July 30, 1892; will declared valid April 20, 1893), bequests to the town of Alstetten, Canton of St. Gall, Switzerland, for distribution of bread to the poor twice a year, \$25,000; to the Medical School of Harvard University, \$10,000.

**Russell, Henry E.**, of New York city (died Jan. 26, 1893), bequests to the Berkeley Divinity School, Middletown, Conn., \$5,000; to the Bishop Seabury Mission, Faribault, Minn., \$5,000; to the Society for Donations and Bequests for Church Purposes of Connecticut, \$10,000; to Trinity College, Hartford, Conn., for establishment of the H. E. Russell fellowship, \$10,000; and to the Society for Donations and Bequests for Church Purposes, the income to be used for St. Mark's Church, New Britain, Conn., and the whole fund, if desired, for a new church edifice, \$10,000.

**Ryersen, Martin A.**, of Chicago, Ill., gift to the University of Chicago toward a fund for general

equipment of \$500,000, conditional on \$400,000 being raised, \$100,000; time extended to July 1, 1894.

**Sage, Russell**, of New York city, gift for himself and wife to the Troy (N. Y.) Female Seminary, a dormitory to cost \$100,000, to be erected in 1894.

**Sampsen, C. T.**, of North Adams, Mass. (died in Sept., 1893), bequests to the Baptist Home Mission Society, \$100,000; the Baptist Missionary Union, \$100,000; and to various Baptist churches, societies, and educational institutions, in sums ranging from \$10,000 to \$50,000 each, \$295,000.

**Scott, Charles**, of Washington, D. C., bequest to Trinity College, Hartford, Conn., \$10,000.

**Searles, Edward F.**, of San Francisco, Cal., gift to the regents of the University of California, for an art school and museum, the Hopkins mansion on California Street, valued at \$1,500,000; also \$5,000 per annum for five years toward its support.

**Shepard, Elliott F.** See OBITUARIES, AMERICAN.

**Sibley, Hiram W.**, of Rochester, N. Y., gift to Cornell University, for a new building for Sibley College, founded by his father, \$50,000.

**Simonds, Susan W.**, of Boston, Mass., bequests to national and local missionary societies, \$5,000.

**Smith, Elizabeth J.**, of Brooklyn, N. Y., bequests to missionary and charitable organizations, \$8,000.

**Smith, Horace.** See OBITUARIES, AMERICAN.

**Spaulding, Lucy**, of Nashua, N. H., bequests to Dartmouth College, \$10,000; the American Board of Commissioners for Foreign Missions, \$10,000; the New Hampshire Bible Society, \$10,000; and the New Hampshire Orphans' Home, \$10,000.

**Spicer, Elihu.** See OBITUARIES, AMERICAN.

**Spinney, Joseph S.**, of Brooklyn, N. Y. (died May 3, 1893), bequests to specified institutions, \$30,000; to Wesleyan University, on the death of his sister, reversion of \$25,000; and to Wesleyan University, the American Seaman's Friend Society, and his sister, his residuary estate. He left an estate estimated at \$2,000,000.

**Stanford, Mrs. Leland**, of San Francisco, Cal., gift to Sarah B. Cooper, President of the Golden Gate Kindergarten Association, of San Francisco, for free kindergarten work in that city, \$174,000.

**Stanford, Thomas Welden**, of Melbourne, Australia, brother of the late Leland Stanford, pledge to give to the endowment fund of Leland Stanford Junior University, the legacy of \$300,000 left him by his brother.

**Starr, Charles J.**, of New York city (died in November, 1893), bequest to Middlebury College, Vt., \$150,000. He had given it in life \$85,000.

**Starr, Lydia**, of Philadelphia, Pa., bequests to Catholic religious and benevolent institutions, \$13,954.

**Stewart, Mrs. Mary Rhinelander**, of New York city, bequest to charitable institutions, \$25,000.

**Stickney, John N.**, of Rockville, Conn., bequests to Congregational Church societies, \$12,000.

**Stickney, J. Henry**, of Baltimore, Md. (died in May, 1893), bequests to the American Home Missionary Society, on condition that the name be changed to Congregational Home Missionary Society, \$150,000; Massachusetts Missionary Society, \$15,000; American Missionary Association, \$15,000; American Congregational Association, \$10,000; New West Education Commission, \$25,000; Congregational Sunday and Publishing Society, \$20,000; Colorado College, \$20,000; Beloit College, \$10,000; Howard University, Robert College in Constantinople, Talladega College, and Washburn College, \$5,000 each; for memorials of the New England Pilgrims, chiefly in Plymouth, \$70,500; to various institutions in Baltimore, \$69,000; and to the Congregational Church Building Society the residue of his estate.

**Streud, William E.**, of Philadelphia, Pa., bequest for establishment of the Eliza Cathcart Home for Incurables, \$200,000.

**Stuart, Mary Maerae**, of New York city (died Dec. 30, 1891), widow of Robert L. Stuart, from her unconditional bequests to the Boards of Home and Foreign Missions of the Presbyterian Church, applica-



tion by a joint committee of the boards of \$670,000 for the purchase of ground on Fifth Avenue, and of \$1,000,000 for the erection of a building; also from bequests to the College of New Jersey, a new dormitory, cost about \$100,000, named Hodge Hall, dedicated Sept. 22, 1893.

**Taylor, Mrs. Moses**, of New York city, bequest to the church in Elberon, N. J., \$100,000 and her summer residence there.

**Todd, William C.**, of Atkinson, N. H., gifts to the public library in Newburyport, Mass., on condition that the city appropriates to it annually \$400 for the purchase of newspapers, \$10,000; also to the Boston Public Library the first of an annual gift of \$2,000 for the purchase of newspapers from all parts of the world for its reading-room; pledged himself to give the latter library "sooner or later," to secure forever this annual payment, \$50,000.

**Trefz, Mrs. Christina**, of Newark, N. J., gift to the German Hospital in that city, a building for the School for Trained Nurses, cost \$20,000.

**Trowbridge, Ezekiel Hayes**, of New Haven, Conn. (died Nov. 24, 1893), bequest to the Divinity School of Yale University, \$5,000.

**Vanderbilt, Cornelius**, of New York city, gift, for himself and wife, to Yale University, a new building for students' rooms on the college campus, as a memorial to their son, William H. Vanderbilt, a former student, estimated cost \$500,000.

**Walker, Joseph**, of Portland, Me., bequest to trustees, to be applied to charitable and educational purposes, \$250,000; will contested and sustained.

**Ward, Mrs. Ellen Eliza**, of Roslyn, Long Island, bequests to the Protestant Episcopal Diocese of Long Island, \$20,000; the New York Protestant City Mission, \$15,000; the trustees of the estate belonging to the diocese of Long Island, in trust, \$12,500; and other religious and benevolent organizations, \$15,000.

**Waterston, Rev. Robert Cassie**, of Boston, Mass. (died Dec. 19, 1893), bequests to the Massachusetts Historical Society, \$40,000, and, after his widow's death, his collections of books, pamphlets, manuscripts, and autographs; and to the Society of Natural History, for a publication fund, \$10,000, and his collections of birds, shells, fossils, and minerals.

**Webb, William Henry**, of New York city, gift of grounds and building on Fordham Heights, to be known as Webb's Academy and Home for Shipbuilders, estimated cost and endowment, \$1,000,000. The grounds comprise thirteen acres. The institution was informally opened Oct. 26, 1893.

**Weld, William F.**, of Brookline, Mass., bequest to Harvard University, \$100,000. He gave it \$90,000, in 1887, with which to found a professorship.

**Wetmore, Charles D.**, of Jamestown, N. Y., gift to Harvard University, a new dormitory, to be known as Claverly Hall, cost \$150,000.

**Wharton, Joseph**, founder of the Wharton School of Finance and Economy of the University of Pennsylvania, gift to the school, \$75,000; aggregate gifts to it, \$200,000.

**Wheatland, Henry**, for many years President of the Essex Institute, Salem, Mass. (died Feb. 27, 1893), bequests to the Essex Institute, his private library, historical specimens and papers, and \$15,000.

**Wheeler, Mrs. Esther G.**, of Boston, Mass., bequest to the Central New York Protestant Episcopal Diocese, several large tracts of land in and near Mannsville, N. Y., with all buildings thereon, and \$9,000.

**Wheeler, John**, of New Haven, Conn., gift to St. John's Protestant Episcopal Society, a building lot valued at \$10,000, for a new church edifice.

**White, A. J.**, M. D., of New York city, gift to Yale University, a new dormitory, cost \$140,000.

**White, Robert G.**, of Philadelphia, Pa., bequests to institutions of the Presbyterian Church and other organizations, \$12,600.

**Williams, Henry W.**, M. D., of Boston, Mass., gift to Harvard University, for endowment of a full professorship of ophthalmology, \$25,000.

**GOLF.** Within the year this ancient and honorable game has fairly obtained a footing in the United States. The first club, indeed, was established in San Francisco two or three years ago, but until quite recently the game has not fairly attained popularity. It has long been played in Canada, and its authentic history in Scotland goes back to the fifteenth century. It was then so popular that the Parliament, fearing its effect on the efficiency of Scottish longbow-men, passed an act prohibiting golf on Sundays and substituting archery. The name is probably from the German *Kolb*, club, becoming *Kolf* in Dutch, Celtic, and Icelandic. A game somewhat similar was played long ago in the Netherlands and in Belgium, but it is quite uncertain where it first assumed its present form. Within a generation it has spread into England. The St. Andrew's Club in Fife is the recognized headquarters for golf, whence have emanated the rules that govern almost all clubs, and where disputed questions are sent for settlement.

A game of golf is in effect a "constitutional" of moderate length with a definite end in view. It may be brisk or leisurely, according to taste, and it is so constituted that it is both social and solitary. It is played on what are technically called "links," the Scotch equivalent for "downs" or "dunes"—namely, sandy tracts alternately level and broken, such as are found almost everywhere along the seacoast, but it can be played on any kind of ground, or even along a country road. To prepare the links for play, a series of holes, 4 inches in diameter and about 5 deep, are cut in the turf. If the soil is of such a nature that it caves in, the holes are necessarily lined with tin or some similar substance. The holes are from 100 to 600 yards apart, according to the contour of the land. A short link has 9 holes, a long one 18, but any number of holes may be taken, according to agreement among the players.

The object of the game is to drive a ball by striking it with a suitable "club" from one of these holes to the next in regular succession until the entire round as agreed upon is completed, and the ball returned to the place whence it started. The person or side completing the round with the least number of strokes wins.

One against one, or two against two, is the usual arrangement for a game. In either case each side has one ball, and in the latter the partners take turns in striking. Inasmuch as the links are of considerable extent, it is obvious that several parties can play at once, a second party "playing off" as soon as the first has made one or two holes. The overlapping of different parties is provided for in the rules.

Thus the scene on links, when games are in active progress, is one of great animation, and since the organized clubs usually indulge in uniforms, the lady members preferably wearing English "pink," the spectacle is very pretty.

Golf has a peculiar and voluminous vocabulary of its own, the growth of centuries, and inseparable perhaps from its advanced age. The list is too long for reproduction here (see glossary of terms, Badminton Library, volume on Golf). For the rules of the game, too, the reader is referred to the same authority, or to any of the several pamphlets issued by dealers in sporting goods.

The essential equipment for playing is a set of gutta-percha balls,  $1\frac{1}{8}$  inches in diameter, painted white so as to be visible on broken ground, a set of "clubs," and a number of small red flags attached to wires, these last to be set in the ground to mark the positions of balls, or other points in play not visible from a distance. A set of clubs may mean from three to a dozen. They are carefully made with hickory or lance-wood handles about 4 feet long, and bound with leather at the grip. They are usually finished with a piece of iron or steel, the shape of which is variously adapted to some particular kind of play. By a singular confusion of terms this tip, which is at the lower end of the club, is termed the "head"; its outer end is called the "toe," and its inner end the "heel."

The four clubs most in use are the common or "play" club, used where the ground is fairly smooth, and the ball lies open to a fair stroke; the "spoon," used when the ball is in some depression and can not readily be reached; the "iron," when the ball is in sand or gravel; and the "putter," when it is near a hole. From these types spring the almost endless variety of scientific clubs used by devotees of the game, many of whom have their own special models.

A game is opened by playing off from the "teeing" ground, a "tee" being a small heap of earth scraped together, upon which the ball is placed so as to afford opportunity for a fair first stroke. Each side has its own ball, and it is decided by lot which shall lead, or "play off." The ball is driven a longer or shorter distance, according to the policy of the player. If not visible from the "teeing" ground when it stops, it is flagged, so that the opposite side may know where it lies. Then the other side plays. If the second ball stops short of the first, it must be driven again, and if still short, yet again, until it is nearer the first hole than is the opposing ball. The player who leads scores one at the first stroke. The one that follows, if he comes short, scores at his second stroke "two more"; at his third stroke, if still short, "three more"; and so on. When at last he gets nearer the hole than his opponent it again becomes the first player's turn, and his score becomes "one off three," "two off three," and so on. This method of scoring keeps itself with little danger of losing count through inattention.

A "hazard" is any natural obstacle, such as grass, water, whin, molehill, or other bad ground. Strict rules are laid down in regard to them. A ball must not be moved from the point where it stops unless by common consent it is conceded to be unhittable; then it may be picked up by the player, held at the back of the head, and dropped to a new "lie."

Where golf is played with an elaborate outfit a "caddie" is needed to carry the large assortment of clubs, but he may be dispensed with if the players are content with the really necessary implements. It will naturally occur to any American country boy that he can play golf quite satisfactorily on land or on ice with an ordinary hockey stick and a rubber ball. He may not be treated with great consideration by such golf players as own full sets of clubs and employ caddies to carry them, but he can probably have quite as much fun with his comparatively rude

appliances. There is every reason why the game in its simpler form should become popular in this country. It affords a free range and an almost infinite variety of incident, and enables the players to pair off in a most satisfactory manner. Every rural neighborhood has its pastures and other open tracts where permission to play can be procured without difficulty, and where there is any danger to passengers or live stock the holes need not be so large and deep as the regulations require.

**GOUNOD, CHARLES FRANÇOIS**, a French composer of music, born in Paris, June 17, 1818; died at St. Cloud, near Paris, Oct. 18, 1893. His father, a painter, died when the boy was but five years old, and his mother, a musician, educated him. She chose the law for his profession, but when he reached the age of eighteen years, and while he was still pursuing his classical studies, she consented to his request that he



CHARLES FRANÇOIS GOUNOD.

take up music. He had learned to play upon the pianoforte under her guidance, and had studied harmony with Reicha, so that he was well equipped for his special course of study when he entered the National Conservatory in 1836. He joined the classes of Halévy, Lesueur, and Paër, and a year after matriculation carried off a second prize in composition and won exemption from military service. In 1839 he was successful in the competition for the Grand Prix of the Institute of France, which carried with it a two years' residence in Rome as pensioner of the Institute and one year of travel in Germany. He had a strong leaning toward the priesthood, and the teacher to whom he owed most, Lesueur, was chiefly distinguished as a church musician. It was therefore not surprising that—though, as he said about a year before his death, he was an ardent admirer of Mozart's "Don Giovanni" and Beethoven's symphonies, and knew them by heart—his years in Rome were principally occupied with ecclesiastical music. Moreover, his last months in Rome were spent



in a seminary for priests, and his first post on his return to Paris was that of precentor of the Missions Étrangères, whose seminary he also entered as an *eterné*. Now he not only gave himself wholly to the study of theology and the composition of church music, but also put on conventual robes. This fact is to be noted for the bearing which it has on his later life story. Before leaving Rome, in 1841, he conducted a performance of a requiem mass of his own composition, and this work he was privileged to repeat a few months afterward in Vienna. In the Austrian capital the young musician was befriended by Otto Nicolai, conductor of the court opera; in Berlin he visited at the home of Fanny Hensel, whose acquaintance he had made in Rome. The center of musical influence in Germany at that time was Leipsic, and thither young Gounod went next with a letter from Madame Hensel to her brother Felix Mendelssohn-Bartholdy. He was cordially received by the composer, who devoted himself almost exclusively to him for four days, gave a special performance of the "Scotch Symphony" for his benefit, played music by Bach for him on the organ in St. Thomas's Church, which had once answered to the touch of the great master himself, and looked over the manuscripts that he had brought with him from Rome. Among them was the mass that had been sung at Rome and Vienna. Referring to one of its numbers written for five voices *a capella*, Mendelssohn said, "*Mon ami*, that might be signed by Cherubini."

Except in Vienna, where Nicolai introduced him into operatic and instrumental circles, the influences that had been brought to bear upon the peculiarly impressionable nature of the young musician were churchly, and, as has already been intimated, he was apparently only following the path marked out for him, when he sank himself in the work and study of the Missions Étrangères on returning to his native city. He surely contemplated taking holy orders, and probably entered upon some kind of novitiate, for in 1846 there appeared in print a set of church offices composed by "L'Abbé Charles Gounod." He had been wholly forgotten in Paris, when attention was drawn to his music by an article published in "The Athenæum" of London. This was in 1851. The article was translated into French. It is likely that Louis Viardot, the husband of Viardot-Garcia, was responsible for the article either as author or instigator. At any rate, the Viardots enlisted themselves in the service of Gounod, and succeeded in securing for him a commission for an opera from the Academy. This opera was "Sapho," which was produced in 1851. For thirty years thereafter the man who had seemed to have planted at least one foot firmly in the Church gave himself almost wholly to the theater. In eight years he reached the high noon of his success in the opera of "Faust," his masterpiece, and the work that will provide the stoutest props for his posthumous fame. When the sun of his creative genius began to set he turned again to the mystical enthusiasms of his youth, pondered religious questions, and took up church compositions. His operas are these: "Sapho," performed in 1851; "La Nonne Sanglante,"

1854; "Le Médecin malgré lui," 1858; "Faust," 1859; "Philémon et Baucis," 1860; "La Reine de Saba," 1862; "Mireille," 1864; "La Colombe," 1866; "Roméo et Juliette," 1867; "Cinq Mars," 1877; "Polyeucte," 1878; "Le Tribut de Zamora," 1881. At various times during the last fifteen years of his life he worked upon operatic scores that he never finished, the subjects of which were Charlotte Corday, Abélard and Héloïse, and Molière's "Georges Dandin." In the forms not connected with the theater or church Gounod composed little. His masses, written first and last, number a dozen; his songs might reach a hundred, but scarcely more than a dozen of them have attained lasting popularity. In the instrumental field he made few ventures, and of them but one was successful, a humorous trifle called "The Funeral March of a Marionette." He wrote a short oratorio called "Tobie," some hymns and motets, a "Stabat Mater" and a "Te Deum," but these have seldom been thought of for years. The most ambitious of his efforts after he abandoned the theater was the composition of two oratorios for the Birmingham festivals—"The Redemption," in 1882, and "Mors et Vita," in 1885.

It does not seem likely that posterity will materially change the judgment pronounced upon Gounod by his contemporaries. All his works had been tested by time before he died. He was an artist of high ideals and sincere purposes. His style was eclectic, and he did much to advance musical composition in France by precept and example. He touched the supreme heights of success but once, but that one instance is one of the most remarkable in the annals of music. No opera ever written has had so universal and so constant a success as "Faust." Its popularity on the day of his death was as great as ever it was. In Paris alone it had had upward of one thousand representations before its composer died. Its music illustrates every charm that its creator possessed—his amiability, grace, tenderness, warmth of sentiment, dreaminess, ecstasy, and fluency of passion. The score of "Le Médecin malgré lui" has been much praised, and many musicians are inclined to consider "Roméo et Juliette" as the peer of "Faust," but the decision of the public in the case has been correct beyond peradventure—"Faust" is heard with ever new and naïve delight, the few of his other works that keep the stage with feelings ranging from respect up to gentle pleasure. Gounod's models in dramatic composition were Mozart, Von Weber, and Wagner. For the early works of the last he had full appreciation and sincere admiration. He yielded to Wagner's influence in introducing into his scores a flexibility of form that made dramatic expression freer than it had been in French opera up to his time, and he followed him in a measure in some of his external devices; but his nature would not permit him to accept the logical outcome of Wagnerian principles in the manner of their exponent. With all the liberality of thought and affection that led him to introduce innovations in constructive form which are entitled to much of the credit for his success, he still believed that Mozart's masterpiece, concerning which he wrote a monograph full of lovely enthusiasm, fulfilled all the conditions of lyro-





GOUNOD'S HOUSE AT ST. CLOUD.

dramatic art. He did not see that the drama could ask more than the beauty of pure music and the just expression of human truth. In his search for the latter element he was stopped short of what the Germans call characteristic beauty by his devotion to sensuous charm. He was an emotionalist, a mystic, a dreamer. Upon his essentially feminine nature faith and affection took stronger hold than reason. It cost him no effort to believe anything that presented itself to him in a garb that pleased his æsthetic sense. His life was the counterpart of his music: it was amiable and winning, full of emotional ecstasies, but neither strong in its embodiment of

morals nor steadfast. The climax of his genius is found in two scenes, which are much alike in their emotional contents—the garden scene of “Faust” and the balcony scene of “Roméo et Juliette.” For these scenes, as well as their prototypes in the plays of Goethe and Shakespeare, ecstatic utterance is the natural idiom, and Gounod’s truest musical speech was that of passionate ecstasy. His gamut, however, was limited, and for that reason he was more generally admirable as a lyrist than as a dramatist. In spite of the wondering regard in which he was held because of his “Faust,” his contemporaries were forced to recognize the fact that a composer who



produced twelve operas of which only one was an unequivocal success either with critics or people was not a strong dramatic writer.

As in religion Gounod was a mystic, so his religious music is characterized by gentle aspirations rather than profundity and strength of proclamation. The spirit of his religious songs—some of which, like “There is a green hill far away,” have enjoyed extraordinary vogue, especially in England and the United States—is indistinguishable from the sentimentality of his amorous lyrics. While listening to such music, and even much in his masses and oratorios, it is easy to understand the feelings of the man who wished to compose his mass to the memory of Joan of Arc in the Cathedral at Rheims where the maid had knelt at the feet of him whom she had caused to be crowned king. When, after a long series of operatic failures, he resolved to devote the concluding years of his life to the composition of religious music, it seems likely that his mind reverted to some of the lessons learned from Mendelssohn in Leipsic forty years before. It is obvious at a glance that Gounod rests the structure of his “sacred trilogy, The Redemption,” upon the passion music of Bach. All the formal factors of the sturdy old German Protestant’s creation, except the *recitativo secco*, are found again in the work of the modern French Catholic, though modified in manner. Despite the advantage given to Gounod by the increased power of expression acquired by his instrumental medium, the modern orchestra, however, it is marvelous to note how vastly he falls short of his model in dramatic power and eloquence. But who shall stand when Bach appeareth? Gounod inscribed the score of “The Redemption” with the words *Opus vitæ meæ*—another evidence of his sentimental nature and want of the faculty of self-criticism. His “Mors et Vita” was written to order for the Birmingham festival of 1885, its norm being a requiem that he had composed before he wrote “The Redemption.” Its success was short-lived.

**GREAT BRITAIN AND IRELAND**, a monarchy in western Europe. The reigning sovereign is Queen Victoria, born May 24, 1819, who ascended the throne, June 20, 1837, and who was proclaimed also Empress of India, Jan. 1, 1877. The heir apparent to the crown is Albert Edward, Prince of Wales, born Nov. 9, 1841. His eldest son and presumptive successor is George, Duke of York, born June 3, 1865, who married on July 6, 1893, the Princess May of Teck, his second cousin, born in 1868. The legislative power of the British Empire is vested in a Parliament consisting of the House of Lords and the House of Commons. The upper house consists of hereditary peers, peers created by the sovereign, English bishops, who are peers by virtue of their office, Irish peers elected for life, and Scotch peers elected for the duration of Parliament. The roll bore the names of 562 members in 1892. There are 20 Scotch and 64 Irish peers who are not peers of Parliament. The House of Commons has 670 members elected for the duration of each Parliament, of whom 253 represent English county constituencies, 237 represent English boroughs, and 5 represent English universities; Scotland has 39 county, 31 borough, and 2 university representatives, while

Ireland has 85 county, 16 borough, and 2 university representatives. In 1892 the total number of registered electors in the United Kingdom was 6,161,456, of whom 4,810,237 were in England and Wales, 606,403 in Scotland, and 744,816 in Ireland. The reform bill of 1884 added nearly 3,000,000 electors to the roll of the United Kingdom, and now about one sixth of the population are electors.

The executive Government, nominally vested in the Crown, is practically administered by a Cabinet, which remains in office only so long as its policy is sustained by a majority in the House of Commons. The Prime Minister usually is the leader of the lower house and holds the office of First Lord of the Treasury. In the event of an adverse vote upon a Government measure the Cabinet either resigns or Parliament is dissolved and an appeal to the electors is had. The Prime Minister has the dispensation of most of the Crown patronage. The present Cabinet, which came into office Aug. 18, 1892, is constituted as follows: Prime Minister, First Lord of the Treasury, and Lord Privy Seal, William Ewart Gladstone, born in 1809; Lord High Chancellor, Lord Herschell, formerly Sir Farrar Herschell; Lord President of the Council and Secretary of State for India, the Earl of Kimberley; Chancellor of the Exchequer, Sir W. V. Harcourt; Secretary of State for Foreign Affairs, the Earl of Rosebery; Secretary of State for the Home Department, Herbert H. Asquith; Secretary of State for the Colonies, the Marquis of Ripon; Secretary of State for War, H. Campbell-Bannerman; First Lord of the Admiralty, Earl Spencer; Chief Secretary to the Lord Lieutenant of Ireland, John Morley; President of the Board of Trade, A. J. Mundella; Chancellor of the Duchy of Lancaster, James Bryce; President of the Local Government Board, Harry H. Fowler; Secretary for Scotland, Sir G. O. Trevelyan; Postmaster-General, Arnold Morley; First Commissioner of Works, G. J. Shaw-Lefevre; Vice-President of the Council of Education, A. H. Dyke Acland.

**Emigration.**—The number of emigrants from the United Kingdom in 1892 was 321,397, against 334,543 in 1891 and 315,980 in 1890. Of the native emigrants in 1892, who numbered 210,042, against 218,507 in 1891 and 218,116 in 1890, there were 133,815 of English, 23,325 of Scotch, and 52,902 of Irish origin. Of the native emigrants in 1892, 150,039 went to the United States, 23,254 to British North America, and 15,950 to Australasia. The emigration to Australasia was the lightest in any year since 1872. The number of alien emigrants in 1892 was 93,801. The total number of immigrants was 143,747, against 151,396 in 1891 and 115,910 in 1890. The net emigration was 177,650, compared with 183,174 in 1891 and 160,070 in 1890.

**The Army.**—The strength of the regular army, exclusive of the forces in India, as provided for by the estimates for the year ending March 31, 1893, was 7,498 commissioned officers, 1,004 warrant officers, 15,971 sergeants, 3,684 musicians, and 125,916 rank and file, making a total of 154,073 of all ranks, an increase of 377 over the previous year. The total number of horses was 14,568. The effective force, exclusive of staff and auxiliary forces, maintained in the

United Kingdom in 1892 was 103,891 officers and men, consisting of 12,759 cavalry, 17,663 artillery, 5,338 engineers, and 68,131 infantry and special corps, with 13,670 horses and mules and 282 field guns. There were stationed in England and Wales 72,927 men, with 10,141 horses and mules and 226 field guns; in Scotland, 4,023 men, with 322 horses and mules and 4 field guns; in Ireland, 26,941 men, with 3,207 horses and mules and 52 field guns. In Egypt were stationed 3,350 officers and men, with 357 horses and mules, which force was strengthened early in 1893 by 2 battalions, or about 900 men. A force of 29,586 men, with 625 horses and mules, was stationed in the colonies; there were on passage 3,143 officers and men. The British troops in India numbered 71,620, with 11,478 horses and mules and 318 field guns. Including these, the total effective was 211,590 officers and men, with 26,130 horses and mules and 600 guns. There are besides four classes of reserves and auxiliary forces, which had at the beginning of 1893 an effective as follows: Army reserve class, 68,933; militia, 113,999; yeomanry, 10,768; volunteers, 222,046. These figures added to those of the active army give 627,336 as the fighting strength of the nation. On Jan. 1, 1892, the regular army consisted of 153,131 Englishmen, 15,993 Scotchmen, 26,788 Irishmen, 6,032 natives of India and the colonies, 123 foreigners, and 1,096 whose nativity was not reported.

Under the various army laws Great Britain and Ireland are divided into 14 military districts. For the infantry there are 102 subdistricts, commanded by line colonels; for the artillery, 12 subdistricts, commanded by artillery colonels; and for the cavalry, 2 districts, commanded by cavalry colonels. As a rule the brigade of an infantry district consists of 2 line battalions, 2 militia battalions, the brigade depot, rifle volunteer corps, and infantry of the army reserve. Of the two line battalions it is a part of the system that one should be abroad and the second at one of the home stations. An artillery subdistrict contains, besides the royal artillery, that of the militia, the volunteers, and the army reserve; while a cavalry colonel has command not only of the cavalry regiments in his district, but over the yeomanry, volunteers, and reserve cavalry. The issue of the magazine rifle was nearly complete early in 1893, when 346,000 had been manufactured, 56,000 of which were in the hands of the troops, and 70,000 in India. The cavalry are being armed with the new carbine, and 86 batteries have been armed with a new 12-pounder gun.

**The Navy.**—The naval estimates for 1892-'93 provided for 46,031 seamen, including 14 flag officers and 2,714 commissioned officers on active service; 8,443 boys, including those under training; 14,379 marines afloat and on shore; 4,200 coast guards; and 1,049 officers for various services, making a total of 74,100 of all ranks. Provision was also made for 23,501 officers and men in the navy reserves, and 3,010 pensioner reserves. Including 94 officers on salary, not above specified, the total of officers and men provided for was 100,705.

There were 278 naval vessels in commission Nov. 1, 1892, against 277 in the previous year. There were 9 first-class battle ships, against 17 in

1891, but this decrease was due to a change in the classification of armor-plated ships. There were 8 second-class battle ships, a decrease of 2, caused also by change in classification; 8 third-class battle ships, an addition of 7 due to the changed classification; 4 coast-defense ships, an addition of 3 to this class; and 11 first-class cruisers, an addition of 1; making 40 armored ships, an increase of 1 over the previous year. There were 137 unarmored ships, as follow: 45 second and third-class cruisers; 1 torpedo ram; 13 sloops, an increase of 1; 4 gun vessels, a decrease of 1; 51 gunboats, an increase of 1; 16 special-service vessels; 2 dispatch vessels; 7 troop and store ships; 4 Indian troop ships; 4 royal yachts; 7 surveying ships; 11 torpedo boats; and 12 other ships. There were also 26 sailing vessels, comprising 6 training brigs, 18 coast-guard tenders or revenue cruisers, and 2 other ships; and 35 stationary vessels, including 21 training and drill ships. According to the programme of construction to be completed in 1894, the fleet will comprise 77 full-armed, 88 protected, and 336 unprotected vessels, making a total of 501 ships of all classes, of 1,127,049 tons, against 373 effective ships, of 679,144 tons, in 1889.

Of 137 vessels on foreign service in 1892, there were 28 in the Mediterranean and the Red Sea; 8 in the Channel squadron; 12 in North American and West Indian waters; 10 on the East Indian and 20 on the China station; 24 at the Cape of Good Hope and on the west coast of Africa; 8 in the Pacific; 12 on the Australian station; 4 on the southeast coast of America; 10 on particular service; 4 on surveying service; and 10 constituting the training squadron.

**Loss of the Victoria.**—While the Mediterranean fleet, commanded by Vice-Admiral Sir George Tryon, was manœuvring off Tripoli on June 22, the "Victoria," which was the flagship of the squadron, was struck by the ram of the "Camperdown," Rear-Admiral A. Markham commanding, and sunk in about 70 fathoms of water. The manœuvre that brought on the collision required the fleet, proceeding in two columns, led respectively by the "Victoria" and "Camperdown," to reverse the sailing direction by turning inward toward each other, each ship to follow its leader in the movement. By the orders of the admiral the distance between the columns was 6 cables, or 3,600 feet. The "Victoria" was leading the starboard and the "Camperdown" the port column, and when the admiral's order to turn inward was signaled from the "Victoria," the "Camperdown" did not begin to turn, but signaled that the order was not understood. It was known by experiment that the "Victoria" at ordinary speed could turn around in a circle a little less than 1,800 feet in diameter, and that, with one wheel going ahead and the other backing, that circle could be reduced to 1,200 feet. The "Camperdown's" turning capacity was approximately the same; so that had the engines of both steamers been run to make the short turn there was a margin of 1,200 feet for the performance of the evolution, as the sea was perfectly calm. It appears, however, that there was no understanding on either ship that the engines were to be run other than in the ordinary way. As soon as the "Victoria" began to make her turn inward Rear-



Admiral Markham, believing it to be the intention of Admiral Tryon to ease the helm of the "Victoria" and circle round the second division, ordered the helm of the "Camperdown" put over to begin the turn of 16 points ordered by the admiral. The "Camperdown" was a little behind the "Victoria" in the evolution, and made a bad turn. Her ram struck the "Victoria" at an angle of about 80 degrees on the starboard bow, about 20 feet forward of the turret, and crashed through nearly to her center line. The doomed ship was headed for shore, but within twenty minutes she gave a great lurch to starboard and went down, bow foremost, turning over as she sank. The court-martial, which was convened at Malta to investigate the disaster, exonerated Capt. Bourke, of the "Victoria," and Rear-Admiral Markham, and thereby by implication placed the responsibility for the disaster upon the admiral of the fleet. The evidence taken shows that the evolution was dangerous.

The court-martial accompanied its acquittal of Rear-Admiral Markham with an expression of regret that he had not disobeyed an order the carrying out of which seemed certain to result disastrously.

The "Victoria" was an armored steel battle ship of the first class, her armor belt, varying in thickness from 16 to 18 inches, extending over only 162 feet of her total length of 340 feet. She had a breadth of 70 feet, and drew 26 feet 7 inches of water, her displacement being 10,400 tons, and her indicated horse power 12,000. She carried 2 111-ton guns in a single turret, and had also 1 29-ton and 12 5-ton guns, 12 quick-firing 6-pounders, 9 3-pounders, several machine guns, and 8 torpedo tubes; she also had a powerful ram, and her speed was 17.2 knots. With her were lost Vice-Admiral Tryon and more than 430 officers and men.

**Finances.**—The Government revenue for the year ending March 31, 1892, exclusive of extra army and navy receipts and India's contribution for military charges, amounted to £90,994,786, which was £564,786 in excess of the budget estimate; and the total expenditure was £89,927,773, being £996,263 less than the estimate. The revenue is derived mainly from taxation, including customs, excise, and stamp duties, the income, property, and land taxes, and the house duty. The customs receipts amounted to £19,828,309, of which £9,948,809 were from tobacco, £3,418,162 from tea, £2,335,174 from rum, £1,423,836 from brandy, £668,921 from other spirits, £1,291,052 from wine, £177,206 from coffee, £175,225 from raisins, £113,994 from currants, and £275,957 from other articles. The excise receipts were £25,717,425, of which £15,693,631 were from spirits, £9,457,749 from beer, £232,669 from licenses, £324,984 from railways, and £8,392 from other sources. The receipts from stamps, exclusive of fee stamps, were £13,730,183, of which £2,811,187 were for probate duty, £2,828,162 for legacy duty, £1,304,080 for estate duty on personality, £98,640, for estate duty on realty, £1,200,347 for succession duty, £160,831 for company capital duty; for stamps on deeds, £2,370,678; on receipts, £1,136,303; on bills of exchange, £712,830; on patent medicines, £240,062; on licenses, etc., £163,772; and on marine-insurance policies, £152,542; other

stamp duties, £550,749. The income and property tax amounted to £13,853,016, the house duty to £1,442,848, and the land tax to £1,038,337, making the total receipts from taxation £75,610,118. The receipts from the post-office were £10,138,290; from the telegraph service, £2,484,098; from Crown lands, £526,340; from fee stamps, £828,830; from the civil departments, £942,373; from the revenue departments, £120,462; from the Bank of England, £168,878; from post-office savings banks, £65,663; interest on Suez Canal shares, £222,111; receipts from other sources, £276,369; making the total for the year £91,428,532, of which £90,994,785 had been actually paid into the exchequer up to March 31.

The expenditure for the year on account of the consolidated-fund charges was £29,009,498, of which £25,000,000 were for charges on the debt, £200,000 for Suez Canal bonds, £1,428,571 for the naval defense fund, £409,592 for the civil list, £347,329 for annuities and pensions, £509,129 for judicial salaries, £84,172 for other salaries and allowances, £325,000 for constructing barracks, £400,000 for gold coinage, and £305,705 for various other purposes. The debt charges itemized comprised £15,893,049 interest on the funded and £820,292 on the unfunded debt; £6,557,637 for terminable annuities, £187,233 for management of the debt, and £1,541,789 for the new sinking fund. The expenditures for the army and navy were respectively £17,259,000 and £14,150,000; for the civil services, £17,500,709; for collecting the customs and inland revenue, £2,691,948; for the post-office, £6,126,481; for the telegraph service, £2,489,000; and for the packet service, £701,136, making a total for the supply service of £60,918,274.

The budget for 1892-'93 estimates the revenue at £90,453,000; and the expenditure at £90,253,000; but some of the estimates have been increased by supplementary votes.

One half of the probate duty, the additional beer and spirit duty, and a large proportion of the license money collected by the Government, are required by recent acts of Parliament to be paid over to local authorities for the relief of local taxation. For the year ending March 31, 1892, the amounts so applied were: From additional beer and spirit duties, £1,394,751; from licenses, £3,391,627; from probate duty, £2,811,187; making a total of £7,597,565; of which England and Wales received £6,426,860; Scotland, £795,712; and Ireland, £359,260. The balance in the exchequer on March 31, 1892, was £6,255,169. The amount raised for local expenditure in 1890 was £69,317,683. The total for England and Wales was £57,360,957; for Scotland, £7,573,504; for Ireland, £4,383,222. The expenditures for the year were: In England and Wales, £55,375,027; in Scotland, £7,403,657; in Ireland, £4,403,512; total for the United Kingdom, £67,182,196, against £66,253,476 for the previous year. The expenditure for poor relief was £10,406,638; for police and sanitary and other public works, £32,837,568; and for schools, £7,100,911.

The funded debt amounted on March 31, 1892, to £577,944,665, the unfunded debt to £35,312,994, and the estimated amount of the terminable annuities was £64,421,912, making the total national debt £677,679,571. The Russian-Dutch

loan of £531,359, the deficiency of savings banks and friendly societies, amounting to £1,566,279, and £764,558 of liabilities under the imperial defense act of 1888, swell the gross liabilities, £680,541,767; but from this amount is to be deducted for sundry assets the sum of £5,209,428, leaving the total net liabilities £675,332,339.

**Agriculture and Other Industries.**—The wheat crop in Great Britain in 1892 was 58,561,000 bushels, against 72,127,000 bushels in 1891, and upward of 73,200,000 bushels in each of the two previous years; the yield of barley was 70,502,000 bushels, which was below the average for the three preceding years; the yield of oats was 116,295,000 bushels, which exceeded that of any of the three preceding years except 1890. In Ireland the yield of wheat in 1891 was 2,615,000 bushels, which was about the average for the three preceding years; the crop of barley was 7,426,000 bushels, which exceeded the average; the crop of oats was 54,086,000 bushels, nearly 4,000,000 bushels in excess of the average. The crop of potatoes was 3,037,000 tons, against 1,810,000 tons in 1890; and the crop of turnips 4,349,000 tons, against 4,256,000 tons in 1890. In Great Britain the crop of potatoes in 1891 was 3,053,000 tons, and the crop of turnips 25,392,000 tons, which was somewhat below the average. The farm animals in the United Kingdom in 1892 consisted of 2,067,549 horses, of which Ireland had 539,788; 11,519,417 cattle, Ireland's share being 4,531,025, nearly equaling that of England; sheep, 33,642,808, of which 4,827,702 were in Ireland; and 3,265,898 hogs, of which 1,115,888 were in Ireland.

The output of coal during 1891 was 185,479,126 tons, valued at £74,099,816, against 181,614,288 tons, valued at £74,953,997, in 1890; and that of iron ore 12,777,689 tons, valued at £3,355,860, against 13,780,760 tons, valued at £3,926,445, in 1890. The total value of the metallic minerals raised, including iron, lead, tin, copper, zinc, bog iron, copper precipitate, silver, gold, iron pyrites, and antimony, was £14,614,386. The quantity of iron produced was 4,528,312 tons, valued at £11,886,819. The total number of persons employed in the coal mines in the United Kingdom in 1891 was 648,450.

Raw cotton to the amount of 1,994,885,312 pounds was imported into the United Kingdom in 1891, and 1,812,877,284 pounds were retained for home consumption, against 1,578,853,360 in 1890. The imports of wool were 720,014,070 pounds, of which 335,789,414 pounds were retained for home consumption, against 292,315,828 pounds in the preceding year. In 1890 the number of textile factories in England and Wales was 6,180, with an aggregate of 50,211,216 spindles and 722,406 power looms; in Scotland, 747 factories, with 2,413,735 spindles and 71,471 power looms; in Ireland, 263 factories, with 1,016,111 spindles and 28,612 power looms; making a total in the United Kingdom of 7,190 factories, 53,641,062 spindles, and 822,489 looms. These factories employed 298,828 men, 610,608 women and girls over thirteen years old, and 86,963 boys, all working full time, besides 40,558 boys and 45,941 girls working half time; the total number of all classes being 1,084,631. The number of factories working upon cotton was 2,538; upon wool, 1,793; upon shoddy, 125;

upon worsted, 753; upon flax, 375; upon hemp, 105; upon jute, 116; upon hair, 42; upon cocoanut fiber, 24; upon silk, 623; upon lace, 403; upon hosiery, 257; upon elastic, 54. Since 1885 the number of textile factories had decreased 275; but the number of spindles increased 560,950, and of power looms, 48,785; while the number of persons employed increased 49,720.

**Commerce.**—The total imports of merchandise in 1892 amounted to £423,892,178, against £435,441,264 in 1891. The exports of domestic produce amounted to £227,600,224, against £247,235,150 in 1891, and the exports of foreign and colonial products to £64,400,420, against £61,878,568 in 1891; making the total volume of commerce £715,352,822, against £744,554,982 in 1891. In 1891 the share of England and Wales in the trade was 90·9 per cent.; of Scotland, 7·7 per cent.; of Ireland, 1·4 per cent.

The following table gives a summary of the imports of the United Kingdom for the year ending Dec. 31, 1892, compared with the preceding year:

ARTICLES.	1891.	1892.
Animals, living, for food .....	£9,246,398	£9,360,715
Articles of food and drink, free...	148,510,208	149,115,912
Articles of food and drink, dutiable	27,004,982	26,411,286
Tobacco, dutiable.....	8,415,400	8,574,194
Metals.....	23,040,124	21,093,387
Chemicals, dye stuffs, and tanning substances.....	7,814,337	7,707,390
Oils.....	7,389,994	7,076,035
Raw materials for textile manufactures.....	89,215,655	77,631,573
Raw materials for sundry industries.....	40,035,435	40,977,063
Manufactured articles.....	65,082,129	65,440,678
Miscellaneous articles.....	14,935,548	14,968,552
Miscellaneous, by parcel post.....	561,069	535,243
Total imports.....	£435,691,279	£423,892,178

The following table gives a summary of the exports for the year ending Dec. 31, 1892, as compared with the preceding year:

ARTICLES.	1891.	1892.
Animals, living.....	£671,812	£696,740
Articles of food and drink.....	10,699,250	10,427,166
Raw materials.....	21,332,224	19,325,935
Yarns and textile fabrics.....	105,996,484	100,065,975
Metals, and manufactures of, except machinery.....	89,210,022	83,057,739
Machinery and mill work.....	15,817,515	14,798,716
Apparel and articles of personal use.....	11,831,470	10,419,142
Chemicals and medicinal preparations.....	8,877,712	8,587,506
All other articles, manufactured or partly manufactured.....	82,203,658	28,676,725
Miscellaneous, by parcel post.....	1,095,463	1,201,850
Total British products.....	£247,235,150	£227,060,224
Foreign and colonial products.	61,796,593	64,400,420
Total exports.....	£309,031,743	£291,460,644

The quantity of wheat imported in 1892 was 12,979,360 quarters (1 quarter = 8 bushels), of which 6,776,348 quarters came from the United States, 2,498,088 from India, 872,597 from Russia, 775,996 from Canada, 457,511 from Chili, 403,369 from Australasia, 147,558 from Roumania, and 98,836 from Turkey. The quantity imported in 1891 was 13,262,592 quarters; in 1890, 12,094,836. The imports of flour in 1892 were equivalent to 4,421,202 quarters, of which 3,893,478 quarters came from the United States.



Of the total value of the imports for 1891, £104,409,050 came from the United States, £44,777,460 from France, £32,234,398 from India, £31,261,571 from Australasia, £27,301,657 from Holland, £27,031,743 from Germany, £24,110,251 from Russia, £17,252,365 from Belgium, £12,606,415 from British North America, £10,658,288 from Egypt, £10,523,875 from Spain, £8,509,651 from Sweden, £7,936,787 from Denmark, £6,254,428 from South Africa, £5,356,856 from the Straits Settlements, £5,442,881 from Turkey, £5,038,091 from Roumania, £4,713,508 from China, £4,249,909 from Brazil, £4,168,998 from Ceylon, £3,710,356 from Chili and Bolivia, £3,451,228 from the Argentine Republic, £3,419,281 from Italy, £3,363,629 from Norway, £2,952,965 from Portugal, £2,421,227 from the Philippine Islands, £2,166,486 from Greece, £1,901,961 from Java, £1,776,362 from British West Africa, £1,558,152 from the British West Indies, £1,464,106 from Austria, £1,400,130 from Central America, £1,201,486 from the Channel Islands, £1,152,585 from Japan, £1,101,702 from Hong-Kong, £969,814 from Peru, £885,606 from British Guiana, £673,970 from Algeria, £611,445 from Morocco, £586,155 from West Africa, exclusive of British possessions, £493,453 from Mexico, £476,081 from Tunis and Tripoli, £374,261 from Uruguay, £329,244 from Colombia, £290,997 from Venezuela, and £268,066 from Mauritius. Of the exports of British products, £27,544,553 went to the United States, £31,177,968 to India, £25,500,194 to Australasia, £18,804,329 to Germany, £16,429,665 to France, £9,463,300 to Holland, £8,290,039 to Brazil, £7,957,878 to South Africa, £7,349,495 to Belgium, £7,245,771 to British North America, £6,456,593 to China, £6,296,560 to Italy, £5,407,402 to Russia, £4,977,473 to Spain, £4,246,700 to the Argentine Republic, £3,789,238 to Egypt, £2,988,449 to Sweden, £2,882,964 to Japan, £2,617,220 to Denmark, £2,531,328 to Hong-Kong, £2,463,543 to the Straits Settlements, £2,246,700 to the Argentine Republic, £2,217,802 to the British West Indies, £2,205,655 to Java, £2,018,597 to Portugal, £2,000,550 to Chili and Bolivia, £1,901,897 to Norway, £1,695,774 to Mexico, £1,678,190 to West Africa, £1,676,964 to Roumania, £1,481,381 to the Spanish West Indies, £1,279,708 to Colombia, £1,227,967 to Austria, £1,205,655 to Java, £1,165,052 to Uruguay, £1,144,948 to Central America, £1,124,571 to Greece, £1,037,455 to Peru, £1,017,637 to West Africa, exclusive of British possessions, £1,016,573 to Ceylon, £896,013 to Malta, £821,326 to Venezuela, £786,531 to the Philippine Islands, £759,425 to the Channel Islands, £692,348 to British Guiana, £592,767 to Morocco, £469,396 to Persia, £387,086 to Algeria, £320,998 to Hayti and Santo Domingo, £290,614 to East Africa, and £259,871 to Ecuador.

The imports of gold coin and bullion in 1892 were £21,470,832, against £30,275,620 in 1891; the exports, £14,832,122, against £24,167,925. The imports of silver coin and bullion were £10,746,382, against £9,315,598 in 1891; and the exports, £14,078,568, against £13,060,366 in 1891.

The values of some of the principal imports in 1892 were as follow: Grain and flour, £58,176,451; raw cotton, £37,883,356; wool, £26,827,098; meat, £22,359,162; sugar, £19,770,837;

butter and margarine, £15,678,168; wood and timber, £17,180,739; silk manufactures, £11,289,692; flax, hemp, and jute, £9,029,930; tea, £10,090,106; woolen manufactures, £9,468,958; animals, £9,360,715; oils, £7,076,035; chemicals, dyes, etc., £7,707,390; seeds, £7,049,425; fruits, £7,105,962; leather, £6,397,831; wine, £6,035,929; cheese, £5,417,777; copper, £5,542,937; iron ore, £2,715,420; bar iron, £692,259; iron manufactures, £3,034,692; lead, £1,976,436; tin, £2,743,814; zinc and its manufactures, £1,565,622; eggs, £3,793,018; coffee, £3,970,203; tobacco, £3,547,194. The values of the chief domestic exports were as follow: Cotton manufactures, £56,269,618; cotton yarn, £9,696,122; woolen manufactures, £17,902,841; woolen and worsted yarn, £4,056,734; linen manufactures, £5,167,295; linen yarn, £866,393; jute manufactures, £2,561,645; jute yarn, £286,329; apparel and slops, £4,845,349; iron and steel, £21,763,190, of which £5,334,058 represent tinued plates, £2,247,641 railroad bars, £3,343,423 hoops and plates, £1,144,162 bar, angle, bolt, and rod iron, £4,360,428 cast and wrought iron of all sorts, £1,976,490 pig and puddled iron, and £2,233,932 wrought and unwrought steel; hardware and cutlery, £2,206,563; copper, £3,765,509; machinery, £14,798,716; coal and other fuel, £16,811,070; chemicals, £8,587,506.

**Navigation.**—The number of vessels entered from foreign ports in 1891 was 61,380, of which 24,017 were foreign; and the number cleared was 62,202, of which 24,589 were foreign. The total tonnage of the vessels in the foreign trade entered at British ports was 36,859,000 tons, of which 26,637,000 were British and 10,222,000 foreign. The clearances amounted to 37,954,000 tons, of which 27,320,000 were British and 10,633,000 foreign. The total tonnage entered and cleared was 74,813,000 tons, of which 53,957,000 were British and 20,855,000 foreign. Of the foreign tonnage, 5,045,538 tons were Norwegian, 4,400,474 German, 1,943,854 Dutch, 1,889,871 Danish, 1,851,100 French, 1,762,705 Swedish, 1,233,323 Spanish, 952,263 Belgian, 503,788 Russian, 476,722 Italian, 306,044 American, and 133,941 Austrian. The entries of vessels with cargoes amounted to 28,101,000 tons, of which 20,347,000 tons were British and 7,754,000 foreign; and the clearances to 34,213,000 tons, of which 25,188,000 were British and 9,026,000 foreign. The number of vessels that entered coastwise was 310,770, of 48,833,622 tons; and the number cleared was 278,600, of 43,188,500 tons. The total number of vessels entered at the ports of the United Kingdom in 1891 was 372,150, of 85,692,637 tons; and the total number cleared was 340,802, of 81,142,105 tons.

In 1891 there were engaged in the home trade 8,675 sailing vessels, of 556,968 tons, employing 36,714 men; 2,211 steamers, of 354,714 tons, employing 25,107 men. The number of sailing vessels engaged partly in the home and partly in the foreign trade was 312, of 40,248 tons, employing 1,796 men; and the number of steamers 236, of 166,813 tons, employing 5,169 men. In the foreign trade exclusively there were engaged 2,127 sailing vessels, of 2,250,285 tons, employing 42,679 men; and 3,632 steamers, of 4,795,513 tons, employing 129,015 men. The total number of vessels was 17,243, and the aggregate tonnage



7,915,336. The total number of sailors was 240,480, of whom 30,267 were foreigners. The total number of vessels registered as belonging to the United Kingdom and the Channel Islands was 21,543, of 8,279,297 tons, of which 13,823, of 2,972,093 tons, were sailing vessels, and 7,720, of 5,307,204 tons, were steamers.

**Railroads.**—The length of the railroad lines open to traffic on Jan. 1, 1892, was 20,191 miles, of which England and Wales had 14,156 miles, Scotland 3,172 miles, and Ireland 2,863 miles. The total paid-up capital in shares and loans was £919,425,121; and the total receipts for 1891 were £81,860,607, of which £35,130,916 were from passengers and £43,230,717 from freight. The number of passengers carried was 845,463,668, exclusive of holders of season tickets. The total working expenses were £45,144,778, which was 55 per cent. of the gross earnings.

**Posts and Telegraphs.**—The number of letters delivered in the United Kingdom in 1892 was 1,767,500,000; of post cards, 214,600,000; of book packets, 495,300,000; of newspapers, 162,800,000; of parcels, 49,400,000. There were issued 8,906,576 inland money orders for the total sum of £24,383,569; and, including colonial and foreign orders, the whole number was 10,346,630, amounting to £28,429,634. The postal orders numbered 52,659,545, of the total value of £20,563,750. The revenue of the post office, exclusive of telegraphs, was £10,190,967, and the working expenses were £7,142,269. At the beginning of the fiscal year 1892-'93 there were 33,054 miles of telegraph lines and 202,286 miles of wire, including 22,781 miles of private wires, but excluding the wires of the railroad companies. The number of messages in 1892 was 69,685,480. The gross receipts for 1892 were £2,508,138, and the working expenses £2,506,989.

**The Parliamentary Session.**—The second session of the thirteenth Parliament of Queen Victoria was opened on Jan. 31, 1893. The Queen's speech announced that in connection with the approaching evacuation of Uganda by the British East Africa Company a commissioner had been authorized to examine on the spot into the best means of dealing with the country, and, regarding Egypt, that a slight augmentation had been made in the number of British troops stationed there, which measure did not indicate any change in the policy of the Government in dealing with that country. Calling attention to the wide prevalence of agricultural distress, the hope was expressed that the matter would receive the attention of Parliament. Among the measures recommended, the leading place was given to a bill amending the provisions for the government of Ireland, which had been prepared with the desire to afford contentment to the Irish people, relief to Parliament, and additional securities for the strength and union of the empire. Measures were recommended for amending the registration in Great Britain, for shortening the duration of Parliaments, and for equalizing the franchise by the limitation of each elector to a single vote. In the interests of labor, bills were promised in relation to employers' liability, the hours of labor for railway servants, and the amending of the law of conspiracy. Further recommendations were of measures for the creation of parish councils, for enlarging

the powers of the London County Council, for the prevention of the growth of new vested interests in the ecclesiastical establishments in Scotland and Wales, and for direct local control over the liquor traffic.

The promised Irish Home-Rule bill was introduced and explained by Mr. Gladstone on Feb. 13. After a preamble reciting that it is expedient that, without impairing or restricting the supreme authority of Parliament, an Irish legislature should be created, the bill provided that such legislature should consist of the Queen and of two Houses, a legislative council and a legislative assembly. This legislature would have power to make laws in matters relating exclusively to Ireland or any part thereof, subject to the limitations that it may not legislate in any matter that relates to the Crown, a regency, or the vice-royalty; in matters of peace and war, public defense, treaties, and foreign relations, dignities, titles, treason, or alienage; in matters of external trade, quarantine, or navigation; in matters relating to coinage, legal tender, the standard of weights and measures, trademarks, or copyright; and that it may not in any manner restrict religious or personal liberty, abridge educational privileges, or interfere without due process of law with the rights of personal or corporate property. The legislative council was to consist of 48 members, to be chosen by electors who own or occupy in the constituency land or a tenement of the ratable value of more than £20; and such councillors are to hold their seats for eight years, regardless of a dissolution. The legislative assembly was to consist of 103 members returned by the parliamentary constituencies now existing, and elected by the parliamentary electors; and the assembly might, unless sooner dissolved, continue five years from the day on which it is directed by the summons to meet. The constituencies for returning councillors were set forth in a schedule of the act, and the constituencies for members of both Houses of the Legislature, and the distribution of members among the constituencies and the qualifications of the electors must remain for six years as fixed by the act; thereafter these might be altered by the Irish legislature, provided that in any redistribution of members due regard was had to the population of the constituencies. For the purpose of meeting a deadlock between the two Houses, it was provided that in case a measure passed by the assembly was rejected by the council and again passed by the assembly, after a dissolution, or after a lapse of two years, then, in case of another disagreement by the council, the two branches must meet in joint session and decide the question by a majority of votes. All appropriation or tax bills must originate in the assembly, but the appropriation of any part of the revenue or the laying of any tax, except upon recommendation from the Lord Lieutenant, was prohibited. The executive power remains vested in the Queen, and the Lord Lieutenant, in her behalf should exercise the prerogatives of the Crown, and summon, prorogue, and dissolve the legislature. There was to be an executive committee of the Privy Council of Ireland to aid and advise in the government: said committee being of such numbers and comprising persons holding such



offices under the Crown as the Queen might think fit, or as might be directed by act of the legislature; and the Lord Lieutenant, on the advice of the executive committee, was to give or withhold the royal assent to bills passed by the legislature, subject, nevertheless, to any instructions given by the Queen. The term of office of the Lord Lieutenant was fixed at six years, and any subject of the Queen would be eligible, without reference to his religious belief. Ireland would continue under the act to be represented in the Imperial Parliament, but such representation be reduced to 80 members, and the constituencies from which they should be returned are defined in a schedule of the act. With regard to such representation the Irish legislature was inhibited from making any change in the election laws or the qualification of electors, but not prevented from dealing with officers concerned in the issue of writs of election. In the matter of finance the clauses of the bill were numerous and complicated. In effect they provided that the imperial exchequer should take the net proceeds of the customs revenue collected in Ireland, stated by Mr. Gladstone to be £2,370,000, as Ireland's contribution to imperial expenditure. Ireland was to take over £1,000,000 of the constabulary charges, the civil administration charges, amounting to £3,210,000, the inland revenue charges of £160,000, and the postal service, costing £790,000, which would make a total of £5,160,000; and against this she was to receive the excise duties, amounting to £3,220,000; the proceeds of local taxation, covering stamps, income tax, and licenses, amounting to £1,495,000; postal revenue, £740,000; Crown lands, £65,000; and miscellaneous, £140,000; making a total of £5,660,000, leaving her a working surplus of £500,000. An Irish exchequer and a consolidated fund were provided for, and the legislature was empowered to provide for the public service by the imposition of any taxes other than the existing taxes, and to regulate all matters concerning the miscellaneous public revenue connected with the civil charges of government. Detailed provisions were made for the disposition of the Irish consolidated fund, and defining what should be preferred charges thereon. Two of the judges of the Supreme Court in Ireland were to be exchequer judges, appointed by the Crown, paid out of the consolidated fund of the United Kingdom, and removable only by the sovereign; and legal proceedings to which the treasury or commissioners of customs or any of the officers are parties, or which relate to the election of parliamentary representatives, or any matter not within the powers of the Irish legislature, should, if so required by any party to such proceedings, be heard and determined before these judges; and in any such proceeding an appeal would be from any court of first instance to the exchequer judges, the decision of such judges being subject to appeal to the Privy Council only. The exchequer judges would have power to appoint an officer to execute any judgment of theirs in case the sheriff or other proper officer refused or neglected such execution. Appeals from the courts of Ireland were to be no longer to the House of Lords, but to the Privy Council; but this provision would not affect the jurisdiction

of the House of Lords in the matter of Irish peerages. The Privy Council, through its Judiciary Committee, was, upon application of the Lord Lieutenant or a secretary of state, to hear and determine as to the validity of any act of the Irish legislature. Mr. Gladstone said that this judicial committee was recognized by him and his colleagues as the only approach they could make to the Supreme Court of the United States, and that in the composition of the committee due regard must be had to different elements of nationality. Elaborate provision was made for protecting the tenure of office and the salaries, allowances, and pensions of judges and other officers of the Crown serving in Ireland. Regarding the constabulary or police, the act provided that the Irish legislature might empower the local authorities in counties, municipal boroughs, or other larger areas, to establish local police forces; and whenever the Executive Committee of the Irish Privy Council should certify to the Lord Lieutenant that an adequate police force had been established in any area, he should within six months direct the withdrawal of the royal Irish constabulary from police duties in such area, and make such reduction in the numbers of said constabulary as to him seemed necessary; and upon its being so certified to him within six years that adequate local police forces have been established in every part of Ireland, the Lord Lieutenant would be required within six months after such certification to retire the whole of the royal Irish constabulary and the Dublin metropolitan police. The Irish legislature was inhibited from creating any forces organized or armed like the two forces thus disbanded. The Irish legislature was prohibited from passing any act respecting the relations of landlord and tenant during three years from the passing of the act.

Debate upon the bill was begun at once, and continued to occupy much of the time of the House until the Easter adjournment. Meantime other Government measures, the local veto bill, for regulation of the liquor traffic, the employers' liability bill, the registration bill, the Welsh suspensory bill, and the parish councils bill had been introduced, and a motion by Mr. Gladstone giving precedence to Government business after the Easter recess to the end of the session, was carried just before adjournment by a vote of 163 against 75. On April 6 Mr. Gladstone moved the second reading of the Home-Rule bill, and the debate on that motion was continued to April 29, when the vote was taken. The chief points of attack of the Opposition were the alleged uselessness of the bill, as Ireland was entirely tranquil under present conditions; the financial scheme, which was declared to be impractical and absurd; the lack of any sure guarantee of imperial supremacy; failure of the bill to protect property interests or the minority in Ireland; uncertainty in dealing with the land question; and the unreliability of the majority of the Nationalist party, who would carry out doctrines in regard to land, property, and government which were wholly inconsistent with any government whatever. The motion for the second reading was carried by a vote of 347 to 304, the normal Government majority of 43. On May 8 the House went into committee on

the bill. During the progress of the bill, clause by clause, through the committee, the debate became more and more bitter, leading in some instances to enforced withdrawals and apologies. The financial scheme was entirely remodeled in committee, but the declared purpose of it underwent but little change. The following statement, based on the approximate figures of 1892-'93, illustrates the effect of the amended clauses: The Irish revenue embraces customs, £2,402,000; excise, £3,058,000; stamp duties, £707,000; income tax, £552,000; Crown lands, £65,000; total, £6,784,000, two thirds of which, or £4,522,000, would be retained by Ireland, and this amount is augmented by £138,000 of miscellaneous receipts, making the total retained by Ireland, £4,660,000. Against this is placed Irish expenditures: Civil government charges, inclusive of local charges met out of local revenues, £3,123,000; two thirds of the constabulary charges, £973,000; and the estimated deficit on postal account, £52,000; total, £4,148,000 of expenditure, which deducted from the revenue would leave a surplus for Ireland of £512,000. The figures representing customs and excise were readjusted to make allowance for the duties paid in Ireland on articles consumed in Great Britain. The acrimonious feeling engendered during the debates in committee culminated at 10 o'clock in the evening of July 27, the hour fixed by the Government for closure of debate on the bill in committee. Mr. Chamberlain was speaking on the Opposition side as the hour approached, and amid much disorder on both sides was denouncing Mr. Gladstone and his followers. An allusion to Herod brought forth from the Nationalists a cry of "Judas." Meantime the clock struck 10, and the chairman, Mr. Mellor, attempted to put the closure, and gave directions to clear the House for a division. The Conservatives refused to quit the House, and in the disorder a fight arose in which members were knocked down and otherwise roughly handled. The committee finished its labors upon the bill on the following day. During the month of August the measure passed its final stages by the usual majority, and was sent to the House of Lords, where it was rejected on Sept. 8, by a vote of 419 to 41.

The House passed the North Sea fisheries bill for suppressing the liquor traffic among the fishermen; also the bill regulating the hours of service of railway employees. The employers' liability bill, the second reading of which was moved on Feb. 20, was framed to carry out and give legal effect to the principle that one who for his own profit sets in motion agencies involving danger to others ought to be civilly responsible for the consequences, and thus to abolish the doctrine of common employment. The registration bill, introduced on Feb. 20, providing for a general simplification of the registration machinery and for changing the residence qualification by substituting for an occupation for twelve months, expiring July 15, the uniform period of three months, ending June 24 in each year, applying to all elections; the right to vote not to be affected by any change of residence within the same electoral area. The Welsh suspensory bill, suspending the creation of new interests in churches in Wales, is regarded as the

first practical step toward disendowing and disestablishing the Church there. The bill establishing the eight-hour day for miners passed its second reading on May 3 by a vote of 279 against 201. These 3 bills, the local veto bill, and the parish council bill were pending when, on Sept. 22, Parliament adjourned until Nov. 2.

**Colonies.**—Gibraltar is a Crown colony in Andalusia, Spain, at the entrance to the Mediterranean. The Governor and Commander in Chief is Gen. Sir Lothian Nicholson, who exercises all the functions of government, legislative and executive. The area of the rock is 1.9 square miles, and the population in 1891 was 25,896, including a garrison of 5,896 men. The local revenue in 1891 was £61,136, the expenditure £62,885; and the military expenditure of the home Government £259,221.

Malta, an island in the Mediterranean, 58 miles from Sicily, is 17 miles long, with an area of 95 square miles, and had in 1890 an estimated population of 165,662. The chief town and port is Valetta. The government is partly representative, the Governor being assisted by 20 councilors, of whom 14 are elected. The present Governor is Gen. Sir Henry Augustus Smyth. The revenue in 1891 was £275,125, and the expenditure £281,870.

Cyprus, the third island in size in the Mediterranean, is administered by Great Britain under a convention with Turkey. The area of the island is 3,584 square miles, and the population in 1891 was 209,286, exclusive of the military. The government is administered by a High Commissioner, assisted by an Executive Council. The Legislature consists of 18 members, 6 of whom are officeholders and 12 members elected for five years, 3 by Mohammedan and 9 by non-Mohammedan voters. The High Commissioner is Sir Joseph Seudall, appointed in 1892. The revenue for 1891-'92 was £217,162, and the expenditure £112,742. There is no public debt, but a sum of £92,800 is payable annually to the Sultan under the convention. The imports for the year were valued at £344,125, and the exports, mainly agricultural, at £432,419.

Aden, a volcanic peninsula on the coast of Arabia, having an area of 70 square miles, and forming an important coaling station on the Suez Canal route to the East, with the small island of Perim, at the entrance to the Red Sea, had in 1891 a population of 41,910. The administrative officer is the Political Resident, who is also commander of the troops, and is subordinate to the Government of Bombay. The principal exports are coffee, gums, hides, cloths, and tobacco, which come from the interior of Arabia. The Somali Coast Protectorate, opposite Aden, with an area of 30,000 square miles and a population of 240,000, the island of Socotra, with an area of 1,382 square miles and a population of 10,000, and the Kuria Muria Islands, 5 in number, leased for guano, are attached to Aden.

Ceylon, an island in the Indian Ocean, has an area of 25,346 square miles, and in 1891 had a population of 3,008,466. The government is administered by a Governor and an Executive Council of 5 members. There is a Legislative Council of 17 members, comprising the members of the Executive Council, 4 other offi-



eials, and 8 unofficial representatives of the different races and classes. Sir Arthur Elibank Havelock is the present Governor. The revenue for 1891 was 17,962,710 rupees, of which 4,137,542 were derived from customs, 1,178,738 from land and the tithe on grain, 1,966,173 from liquor licenses, 1,258,434 from stamps, 1,328,619 from the sale of Government timber and salt, and 732,030 from harbor dues. The expenditure was 16,435,079 rupees, of which 2,964,308 were for the civil and judiciary establishments, 1,932,894 for other establishments, 1,195,182 for contribution toward military expenditure, including the cost of volunteer force, 681,577 for pensions and retiring allowances, 1,720,408 for interest on loans, etc., and 2,378,889 for public works, including 346,623 rupees for irrigation. At the end of 1891 the public debt amounted to £2,510,759. The debt was incurred for public works, including 191 miles of railway. The harbor of Trincomalee, on the east coast of the island, is the chief station of the British fleet in Indian waters. The area of land under cultivation is 2,625,016 acres. The principal crops are rice and other grains, which in 1891 occupied 685,839 acres; coconuts, which occupied 759,605 acres; and tea, which occupied 261,179 acres. There were also 55,924 acres under coffee, 12,127 under cinchona, 40,447 under cinnamon, 9,082 under tobacco, and 19,471 under cacao. Disease has reduced the production of coffee. The value of the imports in 1891 was 66,635,392 rupees, against 63,091,938 in 1890; and of the exports, 58,799,744 rupees, against 51,127,339. The principal articles imported were cotton goods, salt fish, rice and paddy, coal and coke, spirits and wines. The values of the principal exports were: Tea, 30,473,267 rupees; coffee, 5,731,467 rupees; plumbago, 4,005,401 rupees; coconuts, etc., 8,177,123 rupees; areca nuts, 907,193 rupees; and cinchona, 669,656 rupees.

The Straits Settlements, a Crown colony, comprise Singapore, an island at the southern extremity of the Malay Peninsula, with an area of 206 square miles; Penang, an island off the west coast of the Malay Peninsula, area 107 square miles; Province Wellesley, a strip on the mainland, area 270 square miles; the small island of Pangkor, with a small strip of territory on the opposite mainland, the whole being known as the Dindings; Malacca, another peninsular strip; and the Cocos Islands and Christmas Island. The total number of inhabitants in 1891 was 506,577, of which Singapore had 182,650; Penang, Province Wellesley, and the Dindings, 232,977; and Malacca, 90,950. The trade is carried on principally by the Chinese, who outnumber the Malays. In the administration of the Government, the Governor is aided by an Executive Council and by a Legislative Council of 10 official members and 7 unofficial members. The present Governor is Sir Charles B. H. Mitchell, late Governor of Natal, appointed in June, 1893. There are 5 native states, occupying a large portion of the peninsula, which are under British protection, and whose political residents are under the direct control of the Governor of the Straits Settlements.

The territory of British North Borneo, administered by the British North Borneo Company, was taken under the protection of Great

Britain in 1888. It has an area of 31,106 square miles, and the population in 1891 was about 175,000, mostly Mohammedan settlers on the coast and aboriginal tribes inland. Charles Vandeleur Creigh is the Governor, and Richard B. Martin Chairman of the Court of Directors in London. The exports are mostly tobacco, jungle and sea products, wax, edible birds'-nests, coconuts, gutta-percha, sago, and seed pearls. There are 17 estates engaged in tobacco-growing. Coal and gold have been found. Brunei and Sarawak are adjacent territories on the island of Borneo under British protection. Brunei has an area of about 3,000 square miles, and is ruled by a native sultan. Sarawak has an area of about 45,000 square miles and a population of about 300,000. The ruler is Sir Charles Johnston Brooke, who in 1868 succeeded his uncle, Sir James Brooke, as Rajah. The products of both these territories are similar to those of North Borneo.

The island of Hong-Kong, now a Crown colony, was ceded to Great Britain by China in 1841. It is the center for British commerce with China and Japan and a military and naval station of great importance. It is situated off the southeast coast of China, at the mouth of the Canton river, and has an area of about 29 square miles. The opposite peninsula of Kowloon belongs also to Great Britain. The population of Hong-Kong in 1891 was 221,441, of which 212,896 were colored; the males outnumbered the females more than 2 to 1. The Governor is Sir William Robinson, appointed in 1891. The imports from Great Britain in 1891, consisting principally of cottons, woollens, iron, lead, and copper, amounted to £2,531,328; and the exports, consisting largely of tea, silk, and hemp, amounted to £1,101,702. There is no custom-house at Hong-Kong from which official data can be obtained, but the above figures are believed to represent about half of the entire trade. The number of vessels entered in 1891 was 4,351, of 5,138,627 tons; and there were besides these 22,806 junks, of 160,645 tons.

The Andaman Islands, in the Bay of Bengal, are used mainly as a convict settlement for India. The area of these islands is estimated at 1,760 square miles, and the inhabitants are a race of degenerate savages, variously estimated at from 2,000 to 10,000. The convict population in 1891 was 11,738, of whom 3,049 were self-supporting.

The island of Mauritius, in the Indian Ocean, has an area of 705 square miles, and had in 1891 a population of 371,655, over two thirds being Hindus. The colony is administered by a Governor. The Council of Government consists of the Governor and 27 members, 10 of whom are elected, 9 appointed by the Governor and 8 official. Sir Charles Cameron Lees has been Governor since 1889. The revenue in 1891 was 7,595,651 rupees, and the expenditure 8,192,265 rupees. The debt was £777,749. The imports in 1891 amounted to 16,433,133 rupees, and the exports to 23,705,288 rupees. They were as follow: Unrefined sugar, 21,119,674 rupees; aloe fiber, 453,530 rupees; rum, 389,926 rupees; vanilla, 211,314 rupees; coconut oil, 180,588 rupees. A large part of the trade is with British India, South Africa, and Australia. There are 2 lines of railroad, having, with their branches, a total length of

92 miles. The Seychelles group, Rodrigues, the Chagos group, and other islands, are dependencies of Mauritius, and have a total area of 172 square miles. Garcia, the largest of the Chagos group, is  $12\frac{1}{2}$  miles long by  $6\frac{1}{2}$  miles wide, and has 700 inhabitants, mostly negroes. It is an important coaling station, and exports annually 50,000 gallons of cocoanut oil.

St. Helena, in the south Pacific, has an area of 47 square miles, and in 1891 the population was 4,116. The island is used as a recruiting station for the West African squadron, and is the headquarters of an American whale-fishing fleet, the product of which in 1891 was £17,428. The Governor is William Grey-Wilson.

Ascension Island, northwest of St. Helena, has an area of 35 square miles, and a population of about 360. It is used as a coaling, victualing and store depot for the West African squadron.

The Falkland Islands, in the south Atlantic, have an area of about 6,000 square miles, and had 1,789 inhabitants in 1891. The Governor is Sir Roger Tuckfield Goldsworthy, appointed in 1891. There is an Executive Council and a Legislative Council. The revenue in 1891 was £11,551, and the expenditure £13,302. The imports amounted to £67,877, and the exports to £130,752, including wool for £103,318, frozen mutton for £9,138, and skins for £7,616.

The Bermudas, a group of 360 small islands in the north Atlantic, of which 18 or 20 are inhabited, are situated 580 miles east of North Carolina and 677 miles from New York. They have an area of 20 square miles, of which 4,000 acres are under cultivation, and had in 1891 a population of 15,123. The colony is administered by Lieut.-Gen. Thomas Casey Lyons. There is a Legislative Council, appointed by the Crown, and a Representative Assembly of 36 members, chosen by 1,167 electors. The revenue for 1891 was £33,531, the expenditure £32,029. The imports amounted to £325,976, and the exports to £129,803. They were as follow: Onions, £81,556; potatoes, £27,360; lily bulbs, £12,612. On account of the mildness of the climate the colony is a winter resort for Americans.

British Honduras is a Crown colony in Central America. It has an area of 7,560 square miles, and had in 1891 a population of 31,471. The Governor is Sir C. Alfred Moloney. The revenue in 1891 was \$357,634, and the expenditure \$348,283. The imports amounted to \$1,853,365, and the exports to \$1,909,930. There were exported 5,717,402 cubic feet of mahogany. Logwood, fruits, and sugar were also exported; as were also India rubber, coffee, and sarsaparilla, mainly in transit. Banana culture is increasing. The colony is suffering for want of adequate internal communications, and from the fact that the land is mainly owned by a few persons who are nonresidents.

British Guiana, in South America, has an area of 109,000 square miles. The government is administered by a Governor and an Executive Council. In legislative business the Governor is assisted by a Court of Policy of 7 official and 8 elective members, and a Combined Court containing, besides the above, 6 financial representatives elected by the registered voters, of whom there are 2,046. The revenue in 1891-'92 was £560,201, and the expenditure £531,099. The

imports in 1891 amounted to £1,707,770. They consisted mainly of flour, rice, pork, butter, and lumber. The exports amounted to £2,532,554, the chief articles being sugar for £1,662,741, molasses for £44,269, rum for £266,966, and gold for £375,290.

The Gold Coast, Gambia, Sierra Leone, and Lagos constitute the West African colonies. The Gold Coast has a length of 350 miles along the Gulf of Guinea, and an estimated area of 15,000 square miles. The population is estimated at 1,905,000, of whom about 150 are Europeans. The revenue in 1891 was £186,021, and the expenditure £133,407. The imports amounted to £650,192, and the exports to £684,305, of which the principal articles were palm oil and palm kernels. Gold is found in many parts of the colony. The Governor is Sir W. B. Griffith, who is assisted by an Executive and a Legislative Council. Gambia, at the mouth of the river of that name, has an area of 2,700 square miles, and a population of about 50,000. The settlement proper had in 1891 a population of 14,266, including 62 whites. The revenue in 1891 was £31,038, and the expenditure £27,697. The imports amounted to £172,118, and the exports to £180,051. The chief products and exports are groundnuts, hides, beeswax, India rubber, etc. R. B. Llewelyn is Administrator of the colony, aided by an Executive and Legislative Council, both appointed. Sierra Leone, with the island of Sherbro and the attached territory on the mainland, has an area of about 15,000 square miles, and a population of about 180,000. Sierra Leone proper has an area of 400 square miles, and the population in 1891 numbered 74,835, including 224 whites. Freetown, the chief town, had 30,033 inhabitants, and is the most important seaport on the coast, and the headquarters of the British forces in West Africa. Sir Francis Fleming is the Governor. In 1891 the revenue of the colony was £80,869; the expenditure, £77,965. The imports amounted to £453,378, and the exports to £477,656, of which £157,457 was for palm oil, £77,383 for rubber, and £43,004 for kola nuts. The kola tree grows freely, and begins to bear seven years after planting. Its nut, used largely by the natives, possesses the property of enabling one to endure long-sustained effort, either physical or mental, even without food; it also clears foul water very quickly. Lagos, an island lying to the east of the Gold Coast, has, with the protectorate on the mainland, an area of 1,071 square miles, and a population of about 100,000. Yoruba, with an area of about 20,000 square miles, and a population estimated at 3,000,000, is attached to Lagos. The colony is administered by a Governor, assisted by 2 appointed councils, 1 executive and 1 legislative. The revenue in 1891 was £78,625, and the expenditure £66,388. The imports amounted to £650,192, and the exports to £717,643, of which £341,340 was for palm kernels, and £252,958 for palm oil. Early in 1893 the Governor, Gilbert Thomas Carter, made an important treaty with the Egba chiefs whereby they acknowledged friendship with the British Government, and agreed to communicate directly with the Governor in case any difficulty should arise. Entire freedom of trade was also agreed upon. Some trouble arose in the Yoruba



country in March, but through the efforts of Gov. Carter the hostile camps were evacuated and tranquillity restored. In August the Colonial Secretary concluded a treaty with the Ibadans, by which they agreed to receive a British Resident and a force of constabulary in their country, to provide land for the occupation of the officers, and to provide land for a railway.

**GREECE**, a constitutional monarchy in south-eastern Europe. The legislative authority is vested in one chamber, the Boule, elected for the term of four years by direct manhood suffrage. The reigning sovereign is Georgios I, born Dec. 24, 1845; elected King of the Hellenes by the National Assembly at Athens, March 18, 1863. The heir apparent is Prince Konstantinos, Duke of Sparta, born Aug. 2, 1868.

The ministry in the beginning of 1893 was composed of the following members: President of the Council and Minister of Finance, C. Tricoupis; Minister of Foreign Affairs, E. Dragoumis; Minister of Justice, A. Sinopoulus; Minister of the Interior, G. Theotokis; Minister of Public Worship and Instruction, K. Kassanakos; Minister of War, N. Tsamados; Minister of Marine, St. Skouloudis.

**Finances.**—The budget for 1892 estimated the revenue at 103,550,792 drachmai or francs, and the expenditure at 99,986,128 drachmai. The revenue for 1891 was 96,541,462 drachmai, of which 12,845,129 drachmai were derived from the land tax, 3,040,000 drachmai from trade licenses, 2,375,000 drachmai from the cattle tax, 2,218,500 drachmai from the house tax, 430,000 drachmai from the tax on joint-stock companies, 23,328,900 drachmai from customs, 3,728,295 drachmai from tobacco, 350,000 drachmai from spirits, 10,565,500 drachmai from stamps, 2,445,000 drachmai from posts and telegraphs, 1,098,000 drachmai from exemption from military service, 560,000 drachmai from consular dues, 2,277,710 drachmai from other dues, fines, etc., 10,722,500 drachmai from state monopolies, 3,330,321 drachmai from national establishments, 2,920,869 drachmai from the sale of lands, and 21,515,068 drachmai from other sources. The total expenditure was 100,411,479 drachmai, of which 33,516,566 drachmai were for the public debt, 4,911,156 drachmai for pensions, 1,325,000 drachmai for the civil list, 774,113 drachmai for the Chamber of Deputies, 130,399 drachmai for subventions, 2,135,134 drachmai for the Ministry of Foreign Affairs, 4,883,534 drachmai for the Ministry of Justice, 7,482,958 drachmai for the Ministry of the Interior, 4,888,088 drachmai for the Ministry of Public Worship, 16,638,375 drachmai for the Ministry of War, 6,445,653 drachmai for the Ministry of Marine, 5,045,690 drachmai for the Ministry of Finance, 8,139,463 drachmai for the administration, and 3,720,000 drachmai for various other purposes. The public debt on Jan. 1, 1892, amounted to 582,119,958 gold drachmai and 168,209,773 paper drachmai. The consolidated debt, bearing from 4 to 5½ per cent. interest, amounted to 155,000,000 gold drachmai and 31,847,750 paper drachmai. The amortizable loans, bearing 4 and 5 per cent. interest, amounted to 393,766,500 gold drachmai and 37,750,258 paper drachmai; while the floating debt amounted to 33,353,459 gold drachmai and 98,611,765 paper drachmai. The foreign debt, raised main-

ly in London and Paris, amounts to 564,000,000 francs, not including 73,000,000 francs due to France, Great Britain, and Russia since the war of independence, and involving a charge on the revenue of 600,000 francs per annum.

The military demonstrations made on the Turkish frontier raised the war expenditure from 22,000,000 drachmai in 1884 to 41,000,000 in 1885 and 51,000,000 in 1886. In addition to this the Government borrowed largely in London and other financial centers, increasing the permanent charges of the debt, and at the same time issued an excessive amount of inconvertible paper money, causing a progressive rise in the premium on gold. As most of the debts are payable in gold, this premium added nearly an equal percentage to the annual charges of the debt. The Government, with a view to increasing the taxpaying capacity of the country, invested some of the borrowed funds in public works, which did not prove productive. The imposition of new taxes increased the revenue, but not sufficiently to offset the loss by exchange on the debt charge. The additions to the navy had augmented the expenditure under this head to 6,500,000 drachmai from 2,500,000 or 3,000,000 drachmai. Tricoupis, in the elections of 1892, was confirmed in his position as Prime Minister, obtaining an enormous majority in the Boule. The people believed him capable of dealing with the financial situation. In his budget, by reducing the standing army he cut down the military expenditure by 4,000,000 drachmai, and in like manner effected a reduction of 2,500,000 drachmai in the naval expenditure, while a saving of the same amount was effected in the department of public works, and other branches of expenditure were reduced. The monetary disturbance and economic depression were rather increased than lessened by these economies, and a rise in the premium on gold to 40 per cent. swelled the debt charge, while revenue fell off. The actual receipts for 1890 were taken as the estimates for 1893, though taxes on petroleum, beasts of burden, stamps, etc., had been raised and the budget showed a surplus of 6,000,000 or 7,000,000 drachmai on this basis, but did not take account of the premium on gold; so that either a foreign loan or a temporary advance was necessary to enable the Government to pay the next coupons. Being authorized by the Chamber, Tricoupis applied in London and Paris for a loan of 100,000,000 drachmai to carry out his plan for the regeneration of Greek finances, which was to pay off the advances of 16,800,000 drachmai in gold recently obtained, and retire within two years 88,000,000 drachmai of banknotes. Theotokos, the Minister of Finance, was unable to obtain the desired assistance in London. Tricoupis then invited the English and French governments to send experts to examine into the solvency of Greece. The experts came, and after a couple of months reported their conclusions, which differed essentially. Maj. Fitzgerald Law, the English agent, reckoned the revenue at 3,000,000 drachmai less than the conservative estimate of Tricoupis, but thought that Greece would be able to meet all her engagements by a more thorough collection of the taxes, in which there was laxity due to party politics, and recommended a loan that would

pay the coupons falling due and redeem 60,000,-000 drachmai of superfluous currency, secured on the revenues payable in gold the collection to be supervised by 1 French and 3 English directors. The French objected to Egyptianizing Greece in this manner, and their financiers were willing to aid in a conversion of the debt at a lower rate.

**The Army and Navy.**—Service in the army is compulsory. The term of service is nineteen years, of which two years are spent in the active army, seven years in the reserve, and ten years in the militia. The peace footing of the army in 1892 was 28,114 officers and men, of which 16,361 belonged to the infantry, 1,608 to the cavalry, 3,382 to the artillery, 1,469 to the engineers, 3,759 to the gendarmerie, and 1,535 to administrative and special services. The war effective was 350,500 men, of whom 100,000 were in the standing army, 104,500 in the reserve, and 146,-000 men in the territorial army.

The navy consists of 3 armorclads, besides 3 more building, 29 torpedo boats and launches, including 2 Nordenfeldt submarine torpedo boats, and 41 unarmored vessels. The navy was manned in 1892 by 3,478 officers and men.

**Commerce.**—The special commerce in 1891 amounted to 140,359,675 drachmai for imports, and 107,489,700 drachmai for exports. The imports of cereals were valued at 33,688,395 drachmai; yarn, 26,383,070 drachmai; minerals and metals, 13,945,434 drachmai; timber, 7,274,611 drachmai. The exports of currants amounted to 66,502,353 drachmai; ores, 15,208,488 drachmai; olive oil, 8,711,689 drachmai; wine, 6,241,-648 drachmai; tobacco, 2,054,799 drachmai; sponges, 1,953,480 drachmai; figs, 1,760,952 drachmai; olives, 1,013,012 drachmai.

The following table shows the trade with the principal foreign countries in 1891, in drachmai:

COUNTRIES.	Imports.	Exports.
Great Britain.....	40,325,075	49,774,500
France.....	12,628,325	25,554,025
Russia.....	27,169,100	3,178,450
Turkey and Egypt.....	21,490,775	8,404,400
Austria-Hungary.....	18,526,600	7,228,625
Germany.....	7,185,600	2,797,925
United States.....	3,393,550	4,026,725
Italy.....	4,220,275	1,828,350
Belgium.....	3,387,925	926,300
Holland.....	354,025	2,993,400
Other countries.....	1,728,425	777,000

The merchant navy of Greece numbered 88 steamers, of 60,376 tons, and 1,334 sailing vessels, of 281,024 tons, in 1892.

**Communications.**—The railroads in 1892 open for traffic had a length of 560 miles, and 270 miles were under construction. At the end of 1891 there were 4,686 miles of telegraph lines, with 5,563 miles of wire. During that year 821,-233 inland and 346,559 international dispatches went over the wires. The receipts amounted to 1,122,518 drachmai, and the expenses to 1,924,640.

The post office in 1891 handled 8,139,000 letters, 271,000 postal cards, and 6,560,000 newspapers, samples, etc. The receipts amounted to 1,332,037 drachmai, and the expenses to 2,029,533 drachmai.

**Change of Ministry.**—Tricoupis and Theotokos contracted with the banking house of Hambro, of London, for the issue of a loan of 109,500,000 francs on the terms suggested by

Maj. Law. They believed that they had power to conclude the arrangement under the act passed by the Chamber, but when Ralli and his followers raised an outcry against such a sale of the independence of the Government to foreigners without the consent of Parliament, which had been adjourned for a couple of months, the King wished the Chamber to be called in order that it might decide the question. The ministers communicated their intention of submitting the loan convention to the Chamber to the English financiers, who would not agree to such a proceeding. The King still insisted on a discussion of the arrangement by the representatives of the people, but Tricoupis, though his majority in the Boule had been 170 to 37, would not consent, and on May 10 offered his resignation, which the King accepted.

The King commissioned Soteropoulos, an ex-Minister of Finance who shared the views of Ralli, but was not a member of the Chamber, to form a new Cabinet, which was completed on May 15, 1893, as follows: Prime Minister and Minister of Finance, Soteropoulos; Minister of the Interior, Ralli; Minister of Foreign Affairs, Kontostavlos; Minister of Justice, Kanakares; Minister of War, Lieut.-Col. Korpa; Minister of Marine, Capt. Kriezis; Minister of Education, Marin Eutaxias. The new Prime Minister was a member of no political party; most of the rest belonged to Ralli's third party. The financial programme was based on the principle of a prompt and full payment of external obligations, which necessitated the raising of 11,000,-000 drachmai for coupons falling due on June 15. The chief feature was the creation of a tobacco monopoly. The new Government resumed negotiations with Greek financiers of western Europe. On June 11 a preliminary convention was signed with C. J. Hambro & Son, the Constantinople Bank, and others, for a loan of £14,000,000 sterling at 6 per cent., the proceeds of which would provide for the redemption of the floating debt, the payment of coupons for two and a half years, and the reduction of the forced currency by 12,000,000 drachmai yearly, the loan to be secured on the gold receipts of the treasury, which should be transmitted through the national and Ionian banks, the obnoxious stipulation of a foreign control having been withdrawn. No provision having been made for the coupons falling due in 1893, the Government was compelled to pass them. This circumstance aggravated the financial situation and increased the gold *agio*, which rose, with frequent fluctuations, to 60, and then to 70 per cent., causing a commercial panic. Although the current crop was abundant and excellent in quality, purchasers were shy and prices were lower than ever before. The crops of wheat and olives were also fine, and yet Government bonds declined and the premium on gold continued to rise.

**The Return of Tricoupis.**—The Boule was opened on Nov. 8 by the King, who announced the scheme for funding the interest on various loans that had been rendered necessary by the failure of the negotiations in London. This convention would grant a respite until a settlement of the public debt could be effected that, in conjunction with the retirement of the redundant paper currency, would restore econom-



ic order in the country. A new land tax and a more efficacious system of collecting taxes would increase the revenue. In the ballot for a president the candidate of Tricoupis obtained 187 votes, while the ministerial candidate received 50, and Delayannis's candidate 21. Thereupon Soteropoulos handed in his resignation, which was accepted, and King Georgios commissioned Tricoupis to form a ministry. On Nov. 11 the new Cabinet was announced as follows: Prime Minister and Minister of Finance, Tricoupis; Minister of the Interior and Minister of Foreign Affairs *ad interim*, Stevenao; Minister of Public Instruction, Kailfreonas; Minister of War, Col. Tsamados.

**The Corinth Canal.**—The canal cut through the Isthmus of Corinth was opened on Aug. 6, 1893. It was begun in May, 1882, by a French company, which failed to complete it. A Greek company was afterward formed, and the undertaking was carried to completion under the direction of M. Matsas, a Greek engineer, with the energetic co-operation of its projector, Gen. Türr. The canal is 6½ kilometres long, 22 metres wide, and 8 metres deep, having the same cross section as the Suez Canal, which is over 25 times its length. The voyage between Athens and Cephalonia is shortened by 325 kilometres, and ships are spared the dangerous passage round the southern headlands of Greece. The voyage of steamships plying between the various ports of western Europe and those of Greece, Turkey, and the Black Sea, is made sixteen or seventeen hours shorter.

**Earthquakes in Zante.**—After a succession of about 300 slight shocks felt during five months, several severe shocks occurred on Jan. 30 that destroyed houses and villages and killed a number of persons on the island of Zante. Two days later the island was shaken by a more violent earthquake, accompanied by a tidal wave. The city of Zante, where 100 houses fell down and many people were killed or injured, was almost deserted by its inhabitants, who went into the fields to sleep, exposed to frosts and storms worse than had been experienced for many years. More villages were destroyed. Further shocks occurred on Feb. 6. A British war-ship and other steamers first brought tents and flour to the shelterless and starving people, to whom the King and Queen soon came to distribute succor. On Feb. 11 occurred further seismic disturbances, and after a period in which only slight tremors were felt and the work of restoration was well begun, an earthquake exceeding in violence all that had gone before, on April 17, laid in ruins almost every building on the island that was still standing. Shocks recurred during that day and the next two days to add to the terrors of the inhabitants, who began to emigrate from the island. The distress was greater than it would have been at another time because the people had suffered from a partial failure of the currant crop in the previous season, and this is now their only dependence, the groves of olive and almond trees having been cleared away to make room for the currant plantations.

**GUATEMALA**, a republic in Central America. The Constitution, as proclaimed in December, 1879, and as amended in October, 1885, November, 1887, and October, 1889, vests the legislative power in a Congress composed of a National Assembly of 69 members, elected for four years by universal suffrage, and a Council of State of 13 members, partly elected by the National Assembly and partly nominated by the President. The executive authority rests with a President, elected for six years by the direct vote of the nation. The President for the term ending in April, 1898, is J. M. Reyna Barrios. The Secretaries of State early in 1893 were: Government and Justice, F. A. Villela; Foreign Affairs, E. de Leon; War, Gen. C. Mendizabal; Instruction and Public Credit, F. Aguilar.

**Area and Population.**—The area of Guatemala is estimated at 46,800 square miles, and the population on Dec. 31, 1890, numbered 1,460,017. The number of marriages registered in 1891 was 5,001; births, 70,219; deaths, 51,197. The returns of deaths are inaccurate, the death rate being considerably higher. Of the total births of the white population nearly 50 per cent. were illegitimate, and 25 per cent. of the Indian children were illegitimate. In 1891 the net immigration was 482.

**Finance.**—The public debt amounted to 17,356,768 pesos on March 15, 1892.

The standing army numbered 3,718 officers and men in 1891. There is a militia numbering 67,300 men.

**Communications.**—The existing railroads connect the city of Guatemala with San José, 72 miles, and Retalhuleu with Champerico. Various other lines from the coast to the coffee and sugar growing, cattle-grazing, and forest districts have been authorized, and the Government promises a subsidy of about \$8,000 a mile. There are 2,278 miles of telegraphs. The number of dispatches in 1891 was 505,808.

**Suspension of the Constitution.**—During the vacation of Congress President Barrios, who had been authorized to remodel the fiscal code, ordered that all duties on imports, which had been paid always in silver pesos, should henceforward be collected in gold. The Permanent Commission of Congress came to the conclusion that he was overstepping his constitutional limits by practically imposing new duties, and intimated its desire to call an extraordinary session of Congress, to which no objections were raised by the Administration. The members were summoned accordingly. The opponents of the President came, but not enough others to make a quorum, and he was so advised officially when the Deputies assembled on Oct. 10, 1893. Thereupon he issued a decree dissolving the Chamber, and ordered elections to take place in the same month for a new one that shall meet on March 20, 1894. For the meantime he suspended the Constitution and assumed a dictatorship. The members of the dissolved Chamber were ordered not to leave the capital; and, to make sure of their obedience to this decree, they were commanded to report in person to the authorities every second day.

## H

**HARRISON, CARTER HENRY**, Mayor of Chicago, born on an estate known as Elk Hill, in Fayette County, Ky., Feb. 15, 1825; assassinated at his own home, in Chicago, Oct. 28, 1893. He was the only son of Carter Henry Harrison and Caroline Evelyne Russell, daughter of Col. William Russell, U. S. A. The Harrison ancestry in this country dates from about 1620. The family seat was in Virginia until 1806, when Robert Cabell Harrison, grandfather of



CARTER HENRY HARRISON.

Carter H. Harrison and nephew of Benjamin Harrison, the signer of the Declaration of Independence, moved to Kentucky. On the maternal side Carter H. Harrison traced his descent from the Norman conquest through the De Russells, represented in the peerage by the Dukes of Bedford. The first of this branch of the Russell family in America was William, who came to Jamestown, Va., with Sir Alexander Spotswood, in 1710.

Carter H. Harrison's father died when the boy was eight months old. At fifteen he began preparation for college under Dr. Lewis Marshall, brother of Chief-Justice John Marshall, and entered the sophomore class at Yale in 1843, being graduated in 1845. In 1855 he was graduated at the Transylvania University Law School, was admitted to the bar, and the same year married Miss Sophonisba Preston, of Henderson, Ky., by whom he had ten children, four of whom survive. She died in Gera, Germany, in 1876. In August, 1882, he married, in London, Miss Marguerite E. Stearns, daughter of Marcus A. Stearns, of Chicago. She died in 1887.

Throughout his life he was fond of travel. After graduation at Yale he engaged in farming in Kentucky, but traveled much in the South and Southwest. In 1851 he went abroad, spending more than two years in Europe, visiting Syria and Asia Minor in company with Bayard Taylor, who was collecting material for his

"Lands of the Saracen." In 1855, immediately after his marriage, he traveled much in what was then the Northwest. At this time he first came to Chicago and determined to make it his home, which he did in 1857. Immediately after the opening of the Union Pacific Railroad he traveled through the West, visiting California. In 1874, and again in 1876 and 1882, he traveled in Europe. In 1887 he made a trip around the world, occupying sixteen months. He published an account of this trip in a book entitled "A Race with the Sun." "A Summer Outing" is the title of another book, the result of a trip in 1890 to the Yellowstone National Park, the Puget Sound region, and Alaska.

His active political life did not begin till after he was forty-five years of age. As a young man, he was a Whig and an emancipationist, and when twenty-three years old was a delegate to an emancipation convention held in Lexington, Ky. In 1860 he became a Democrat and a supporter of Stephen A. Douglas. In 1869 he was a candidate for State Senator on the Democratic ticket, but was defeated. His first public office was that of county commissioner of Cook County, to which he was elected immediately after the great Chicago fire of 1871, on what was called the "Fire-Proof" ticket. In 1872 he was nominated for Congress from the Second Illinois District, but was defeated. Two years later he was elected, and in 1876 he was re-elected. In the spring of 1879 he was elected Mayor of Chicago, and again in 1881, 1883, 1885, and 1893. The canvass in several of these elections assumed proportions of national interest and importance. This was notably true of that of 1893. The Columbian Exposition was to be held in Chicago during the summer of that year, and the contest as to who should be "World's Fair Mayor" of the city attracted the attention of the whole country. His opponent was Samuel W. Allertou, the Citizens' and Republican candidate. The entire press of Chicago, with the exception of the "Times," which he owned, and one other paper, opposed Mr. Harrison. But by a campaign of public meetings unprecedented in the history of the city, during which he made from three to ten public addresses every day for more than a month preceding the election, he was elected by a majority of more than 21,000. It is a singular fact that one of his elections to Congress and at least two of his elections as mayor were obtained in spite of the unanimous opposition of the press of the city.

When he was first elected mayor, the financial condition and credit of the city were at the lowest ebb. The great fire had imposed heavy burdens on the municipality for public improvements, and the panic of 1873 had prevented to an unprecedented extent the collection of taxes. A decision of the Supreme Court of the State had declared the entire tax levy for municipal purposes for one year invalid. Another decision had invalidated an issue of \$249,000 of what were known as Hayes-Colvin certificates. The limit of bonded indebtedness un-



der the new State Constitution had been reached. Under the statutes the taxes to meet municipal expenditures were not collectible until the next year after that for which they were levied. All these things had made necessary the issuance of "scrip," warrants drawn on a treasury in which there was no money. The city's paper was subject to heavy brokerage, and prices for public improvements were consequently high. Even city employees were paid in scrip. To meet the interest on its bonded indebtedness the city was obliged to hypothecate the interest coupons when due, and pay a heavy commission for carrying them until taxes could be collected, these commissions aggregating each year from \$50,000 to \$70,000. In 1878 nearly \$2,500,000 of scrip had been issued. Mr. Harrison addressed himself to the task of remedying this deplorable state of affairs. He introduced the most rigid system of economy in all departments. None but absolutely indispensable public improvements were undertaken, and in these the greatest efforts were made to secure the lowest prices. The city was largely unpaved, and in consequence had muddy streets, sometimes impassable. But such paving as he permitted was with reference almost solely to the necessity of enabling the fire department to reach, on good roads, all parts of the city. The police force, though not too large before, was reduced. The result of these economies was that, from the beginning of his administration, the city employees were paid in cash, the receipts from such sources of revenue as fines, licenses, and water rates being sufficient to do this, pending the collection of taxes, and interest on bonded indebtedness was met from the same source, thus effecting a further saving, and strengthening the credit of the city. Limiting public improvements to absolutely essential ones reduced the issue of scrip during the first year of Mr. Harrison's administration to a million dollars less than it had been the year before. As at the beginning of the year the whole amount of the city's estimated revenue from all sources had been appropriated among the several departments, the economies practiced effected considerable savings in all of them. These unexpended balances, instead of being reappropriated the next year, as had been the practice under previous administrations, were retained, at Mayor Harrison's suggestion, in what has since been known in Chicago's financial system as the General Fund. And the creation of this general fund for the purposes which it has served was the strong feature in Mr. Harrison's financial administration. These savings from appropriations, carried as a general fund, served as a bank balance, which, with the revenue outside of taxes, reduced the scrip issue during the second year of his administration to \$500,000, and has made any issue of scrip since then unnecessary. During the eight years that he was continuously Mayor this general fund grew to \$3,600,000, an amount almost equal to the present tax levy for municipal purposes. This improvement in the city's finances was made easier by an act of the Legislature legalizing the tax levy that had been declared invalid by the Supreme Court. The money derived from this levy, coming into the treasury during the two years of his first ad-

ministration, materially aided in putting the city on a cash basis, though much of it was required to meet the \$249,000 of Hayes-Colvin certificates, which, with interest, amounted to \$275,643, and which, though they were declared invalid, the city ultimately paid in order to preserve its credit.

The finances of the city having been put on a sound basis, Mayor Harrison turned his attention to other features of municipal improvement. Public works of the greatest importance were undertaken on the most comprehensive plan. Wooden block pavement was replaced in the business portion of the city by granite. The telephone alarm and call-box system, since adopted by other cities, was introduced by him. The health department, acting under his direction, greatly mitigated the very serious menace to health that arose from the extensive industries connected with the live-stock slaughtering and packing business in the southwestern part of the city.

In 1884, while serving his third term as mayor, he was nominated by the Democrats for Governor of Illinois and made the canvass on national issues, delivering addresses in each of the 101 counties of the State. He was defeated, but the Republican majority of 40,000 in 1880 was reduced to 14,000. In 1887 he was nominated for mayor a fifth time by a unanimous convention; but when it was intimated to him that the Democratic Administration at Washington did not favor his candidacy, he withdrew. In 1891 he contested the mayoralty nomination with De Witt C. Cregier. Through what he believed unfair methods at the primaries, he was defeated, and at the solicitation of friends decided to be a candidate independently. The result was the election of Hempstead Washburne, the Republican candidate, by a small plurality. In November, 1891, he purchased the Chicago "Times" newspaper, and to its management he gave a great deal of time and attention, until his election as mayor.

As World's Fair mayor he was called on to extend municipal hospitality and welcome to the city's and nation's guests on many occasions. Notable among these guests whom he received were the President of the United States, the Duke de Veragua, and the Princess Eulalie. On Saturday, Oct. 28, he had welcomed the visiting mayors and officials from a large number of cities. Soon after he returned home a total stranger was admitted to the house by the servant, on the plea of urgent business with the mayor. As Mr. Harrison came from the dining-room to meet the stranger the latter fired at him with a revolver, inflicting five wounds, from which he died within a few minutes. The assassin fled, but shortly afterward gave himself up to the police, and in December was placed on trial for murder. The plea of the defense was insanity, but the jury promptly convicted the prisoner of murder, as indicted. Mr. Harrison's body, after it had lain in state at the City Hall for twenty-four hours, during which time it was viewed by more than 100,000 of his fellow-citizens, was buried the following Wednesday in Graceland Cemetery. The funeral was both military and civic, and was most imposing in the numbers that attended it.

**HAWAII**, a country, organized under a constitutional government, in Polynesia, occupying the volcanic group in the middle of the northern Pacific formerly known as the Sandwich Islands, but now commonly as the Hawaiian Islands.

(For area and population, and a map of the Hawaiian Islands, see "Annual Cyclopædia" for 1892, pp. 333, 334.)

When the English, under Capt. James Cook, discovered the islands they were occupied by a quarter of a million barbarians of a higher type than most savage races. There were four distinct kingdoms, the people forming three classes—chiefs, priests, and serfs. There was no middle class of freemen, as on other islands of the Pacific. A chief's position was partly political and partly religious. He was descended from the gods, his life was charmed, and he was worshiped after death. The priests used sorcery as well as drugs, and held sway over both chiefs and serfs. The latter had no rights that the others were bound to respect, and more than one third of the avails of their labor went to support the chiefs. They were united under Kamehameha I, who conquered the other three chieftains; but the wars that brought about this result swept off a large number of the people. In 1792, 1796, and 1801 English writers speak with sorrow of the vices and diseases that, brought by the rougher element of foreigners, were decimating the islands and bringing misery to those who remained. In 1805 cholera swept off half the inhabitants of Oahu.

Kamehameha I died in 1819, and so much influence had the better class of Europeans exerted, that when Liholiho came to the throne the taboos were abolished, the idols burned, and their temples destroyed. At that happy moment, in 1820, the American missionaries arrived, and the people readily accepted Christianity. Morality and intelligence took the place of vice and heathenism so rapidly, that in 1825 Kapiolani, a chieftainess whom Tennyson makes the heroine of a poem, walked fifty miles to Mauna Loa, and there refused to sacrifice to Pele, the goddess of the volcano, and thus broke up the worship that had demanded constant sacrifice of human life. The serfs were freed, made landowners in fee simple, and given the right of suffrage. A form of constitutional government was established, composed of mixed native and Anglo-Saxon elements. When British and French naval officers seized the islands the Government of the United States protested vigorously, and, after the promulgation of a constitution by Kamehameha III in 1840, the 3 powers agreed, in 1844, to respect and guarantee the independence of the native Government. The form of government established by that instrument and remodeled in the amended Constitution of 1852, and the new one proclaimed by Kamehameha V in 1864, was a constitutional monarchy of the British pattern. The King had a Cabinet of ministers and a Privy Council, and the Legislature consisted of 20 Nobles appointed for life by the King, and 88 Representatives elected by all male citizens able to read and write and receiving an income of \$75 a year. Americans and sons of American missionaries were commonly chosen to the chief offices of state and took a prominent part in legislative proceedings, framing laws that were

modeled on those of the United States. When private property in the soil was introduced in 1845 the bulk of the land was allotted to the chiefs, and great tracts were reserved for the Crown and the state, leaving only 27,830 acres to be distributed among the common people, who gradually were evicted from the lands of their chiefs when these passed into the possession of foreigners, who introduced new cultures. The Constitution of 1864 curtailed the royal prerogative, but still left extensive powers to the King, who had the right to make treaties not involving changes in the tariff or the law, was commander in chief of the military forces, possessed the veto power, could appoint and remove Cabinet officers and privy councilors, and in default of an heir could appoint his successor. Kamehameha V died in 1873 without heirs and without naming a successor. A popular election was taken, and Prince Lunalilo was chosen King. He died in the following year, and David Kalakaua was elected by the people, obtaining a large majority over the dowager Queen Emma.

In 1875 a reciprocity treaty was negotiated with the United States, under which sugar grown in the Hawaiian Islands was admitted into that country free of duty. This stimulated the production of sugar enormously, until the amount of the duty remitted on Hawaiian sugar reached \$5,000,000 a year. American capital flowed into the country, and all the lands suitable for growing the sugar-cane passed into the hands of foreigners. The Kanakas, or native Hawaiians, though more vigorous, intelligent, and industrious than other Polynesians, were not employed by the new owners, who introduced the system of contract labor, and, being unable to supply themselves from the Polynesian islands, imported Chinese coolies and Japanese under treaties with their governments, and also Portuguese from the Azores and Madeira. The early planters employed the Kanakas as laborers and lived among them on their estates, which earned but moderate and precarious profits. After reciprocity the estates were converted into joint-stock companies, and influences were brought to bear on the King and the Legislature to remove the restrictions on Chinese immigration and introduce the kind of semislavery known as the contract-labor system. Between 1876 and 1887 the immigration was 35,926, including 23,268 Chinese, 2,777 Japanese, and 10,216 Portuguese. The missionaries, whose sagacious and unselfish counsels gave an enlightened political system to the country and fostered civilized arts and customs, industry, commerce, education, religion, and justice, were succeeded by more selfish and ambitious statesmen, mostly their children, accomplished men of affairs, who now reaped rich benefits from the tide of prosperity that flooded the country. The king had shown a determination to return to despotism, revived sorcery, removed the ban from the sale of liquor, and so instigated race hatred that distrust of the leaders permeated native society, and became acute when the Kanakas found themselves left comparatively destitute amid the sudden expansion of national wealth, of which the thrifty among the Portuguese and the Chinese and Japanese settlers obtained a share, while they alone were excluded. From this cause a



Native party sprang up, raising the cry "Hawaii for the Hawaiians," and disappointed or disgraced politicians, foreign intriguers against American influence, and speculators more unscrupulous than any in the Missionary party leagued themselves with the malcontents when they saw that the majority of the electorate and the King sympathized with the movement. When the Native party obtained a majority in the elective part of the Legislative Assembly friction arose between the King and his ministers. So long as practical accord had subsisted between the sovereign, the ministry, and the Legislature occasions had not arisen for exercising the royal prerogatives of dismissing ministers or vetoing bills, and hence the ministers now claimed that the principle of ministerial re-

measures for defense. Not trusting the loyalty of the regular troops nor the efficiency of the raw native militia, Kalakaua discreetly submitted to the demands of the revolutionists that he should appoint a Prime Minister of their choice and proclaim a new Constitution that they had draughted. This stripped the King of nearly all that remained of the royal prerogative, by making the ministers responsible to the Legislature, and requiring every act of the King to be countersigned by one of them. The Nobles were made elective under a high property qualification, and foreign white residents were admitted to the franchise. Officeholders were made ineligible to seats in the Legislature. Conspiracies and intrigues for the restoration of absolutism were constant, and were aided by the ex-Queen Liliuokalani.



THE GOVERNMENT HOUSE, HONOLULU.

sponsibility was established by prescription. At last, in 1883, there was an absolute majority of the Native party in the Assembly, and the King cut loose from the Missionaries, and appointed an American named W. M. Gibson as Premier, and 3 Kanakas to the other posts in the Cabinet. The new Government was formed largely of white renegades willing to carry out behests that had become infamous. The Americans objected most to the creation of an opium monopoly, believing that the importation of opium ought to be prohibited. In 1887, having matured their arrangements by means of a secret political society, and raised and trained a large body of volunteers, the Americans, joined by the better class of natives and foreigners of every nationality, marched upon the palace. The King and his Prime Minister had begun too late their

When the reciprocity convention with the United States was renewed, in 1887, a supplementary section conveyed to the United States the right to use Pearl Harbor, in the island of Oahu, as a coaling and repair station for vessels. To make this capacious harbor available for the purpose it will be necessary to cut a channel through the coral reef at its entrance—an operation calculated to cost \$700,000, for which the United States Congress has not yet made an appropriation. When the American party was again firmly established in authority, in 1889, members of the Native party, secretly encouraged, it was said, by the King and his sister Liliuokalani, attempted a counter-revolution for the purpose of restoring the old Constitution. On July 2 of that year they seized the palace and Government buildings, fortified



them, and planted artillery, but could not use the guns effectively, and were no match for the trained white militia, who without the loss of a man captured the buildings and drove out the defenders, killing 7 and wounding 12. Kalakaua died in 1891, and was succeeded by Queen Liliuokalani, born Sept. 2, 1838, married to John O. Dominis, an American, who was Governor of Oahu and died Aug. 27, 1891. Her heiress presumptive was Princess Kaiulani, born Oct. 16, 1875, the daughter of the Queen's deceased younger sister and A. S. Cleghorn, a Scotchman, who was Governor of Oahu after the death of Dominis, and collector of customs at Honolulu.

**Commerce and Production.**—Of the total capital invested in productive enterprises in the Hawaiian Islands three fourths is owned by Americans living either on the islands or in the United States, while the native Hawaiians own less than 1 per cent. of the real and personal property of the country. The capital invested in business interests of all kinds, as returned for purposes of taxation, is divided as follows: American, \$24,541,000; British, \$6,741,000; Japanese, \$2,933,500; German, \$2,574,800; Portuguese, \$2,331,600; Chinese native, and other, \$14,653,600. The sugar industry preponderates greatly over all the other business activities of Hawaii, and the only others of commercial importance are the cultivation of rice and the raising of bananas for export. The capital valuation of the sugar plantations and mills exceeds 37,000,000, of which Americans own about 77 per cent., British subjects 16 per cent., Germans 5 per cent., and natives and others less than 2 per cent. The sugar and rice industries were started and built up under the reciprocity treaty of 1875, which gave growers an additional profit on sugar exported to the United States equal to the duty of 2½ cents a pound. This advantage ceased when the McKinley tariff went into effect, which reduced the gains of the Hawaiian planters by \$5,000,000 a year; but still they were able to derive a good profit from the better situated and equipped estates, which in fertility, improved machinery, cheapness of labor, general management, and access to market are not surpassed by those of any country. A yield of 7 tons to the acre is common. Under the contract-labor system Chinese and Japanese laborers have earned \$10 or \$15 a month and kept themselves. The fruit industry, which sprang up under the former tariff, received a heavier blow when the McKinley bill imposed a duty of 30 per cent. Rice is grown mostly by Chinese on land for which they pay a rent of \$20 to \$35 a year. Coffee culture has not been successful, plants having been attacked by the blight. The average value of the domestic exports before 1876 was \$1,500,000 a year. In 1889 their value was \$13,810,070. Yet, deducting sugar and rice, the exports amounted to only \$370,000, so completely had the conditions of production and commerce been transformed by the protection afforded by the reciprocity arrangement; and further deducting bananas, the value remaining was only \$135,000. During the fifteen years of reciprocity the profits of the corporations engaged in sugar planting were from 20 to 80 per cent. a year. In 1890 the domestic exports amounted to \$13,023,304, in which sum sugar

stands for \$12,159,585, rice for \$545,239, bananas for \$176,351, hides for \$70,940, wool for \$35,396, coffee for \$14,737, molasses for \$7,603, goat skins for \$3,182, tallow for \$1,140, betel leaves for \$1,050, sheep skins for \$1,004, and all other articles for \$7,067. The export of sugar in that year was 259,798,462 pounds; of rice, 10,579,000 pounds; of bananas, 97,204 bunches. In 1891 the total value of the domestic exports was \$10,259,000. The export of sugar was 274,983,580 pounds; of rice, 4,900,450 pounds; of bananas, 116,660 bunches; of wool, 97,119 pounds. Nearly all the imports come from the United States, with which country 91 per cent. of the foreign trade is done. The principal imports are provisions, breadstuffs, clothing, timber, machinery, hardware, and cotton goods. The total value of imports was \$7,439,000 in 1891, against \$6,962,000 in 1890, \$5,439,000, in 1889, \$4,541,000 in 1888, and \$4,944,000 in 1887.

**Navigation and Communications.**—In 1891 there were 310 vessels entered at Hawaiian ports, their aggregate tonnage being 284,155. The vessels registered in the country number 51, of 13,42½ tons. A fleet of 22 steamers, built in the United States, and 28 sailing vessels carries on the interisland traffic.

There are 56 miles of railroads on the islands of Hawaii, Oahu, and Maui. These islands are supplied with telegraphs and connected by a cable. The number of letters and the inclosures carried in the mails during the two years ending March 31, 1890, was 3,159,034. The depositors of the postal savings banks in 1890 numbered 2,641.

**Finances.**—The budget is voted every two years, as the Legislature meets biennially. The revenue for 1891-'92 was \$4,408,033, and expenditure \$4,095,891. The bonded debt in 1892 amounted to \$2,314,000, consisting chiefly of a loan of \$2,000,000, bearing 6 per cent. interest, contracted by virtue of the law of Sept. 1, 1886, with Skinner & Co., of London, of which \$1,934,000 remained unpaid on April 1, 1890. On some smaller debts interest as high as 12 per cent. is paid. The Government savings banks owed depositors \$903,162 on April 1, 1892.

The revenue is derived mainly from customs and internal revenue duties. The import duty is 10 per cent. on all articles except liquors and opium, which bear high rates. The real-estate taxes are low. Personal taxes are levied for roads and schools, \$2 for each purpose, and a \$1 poll tax.

**The Queen's Coup d'État.**—The elements that were behind King Kalakaua in his conflict with the dominant white class, and that encouraged the native voters in their efforts to maintain a preponderance in the Legislature, continued as active in the reign of Liliuokalani, who was more devoted than her brother to the restoration of monarchy. She was a woman of shrewdness and education, but of dissolute life and under the influence of the medicine men. In the turmoil and agitation incident to this state of things the Legislature was split into factions, and bills were passed that were obnoxious to the Americans, especially one licensing a gigantic lottery company, which they considered to be a measure not only demoralizing to Hawaii but unfriendly to the United States, where the lottery



had recently been suppressed. The project of an opium monopoly was revived also. Not being able to check the tendency to loose, corrupt, and wasteful legislation, the Americans who had accomplished the revolution of 1887, men who had taken a leading part in the political and commercial development of the country, and were connected with or upheld by principal sugar-planting and other property interests, took up again the project of annexation to the United States, which they had harbored in 1887 until they forced Kalakaua to comply so easily with their demands. The Queen, yielding to pressure from one quarter and from another, changed her ministers several times, and at last angered the Reform party by choosing a Cabinet that was favorable to the lottery, which would uphold her, she was led to suppose, in her design to restore the old Constitution. This Cabinet was as follows: Premier and Minister of Foreign Affairs, Samuel Parker; Minister of the Interior, John F. Colburn; Attorney-General, A. P. Peterson; Minister of Finance, W. H. Cornwell.

The natives have always outnumbered the whites in the Legislature, but were formerly led usually by the most influential section of the whites. The economic changes that had taken place since 1876 altered this relation, and created a sharp political and race antagonism between them and the element that once ruled by influence, and since 1887 sought to rule by coercion, on the ground that those who paid the taxes and surpassed the rest of the community in intelligence, ought to control the expenditure of public moneys and the making of laws. The Reform or Missionary party was still strong enough, standing as it did for economy and good relations with the United States and the civilized world, to overturn in succession the Cabinets appointed by the Queen.

On Saturday, Jan. 14, 1893, the Legislature was prorogued, and on that day the Queen signed the lottery bill, which was suspected to have been passed for the benefit of the owners of the lottery that had been abolished in Louisiana. Minister Stevens denounced the act as a direct attack on the United States Government.

For some months the Native—or, more properly, the Royalist—party, composed of natives and whites, had urged the Queen to proclaim a new Constitution, which would restore the status existing before the revolution of 1887—that is, disfranchise nonnaturalized aliens and transfer the power of making Nobles from the white voters back to the Crown. A draught of such a Constitution was in the hands of the ministers, and the Queen was determined to promulgate it, and was expected to do so on Jan. 14, after the closure of the Legislature, when a great crowd of the Native party assembled before the palace. Summoning her ministers, she requested them to countersign the Constitution. They refused, and when she grew excited and spoke of the threatening attitude of the natives, they left her. Lor-rin A. Thurston, leader of the Reform party, whom Colburn had applied to for aid and counsel in the morning when the Queen had announced her intention of promulgating the Constitution at once, met all the ministers in the office of the Attorney-General and advised them to declare the Queen in revolution and the throne

vacant. The Minister of the Interior and the Attorney-General, when the ministers were summoned back to the Queen, would not go, but consulted Thurston as to what armed support they could rely on from the merchants and traders of the town in an effort to resist the Queen. Thurston went about it, and soon had 80 men pledged to support the Cabinet against the Queen by force. The ministers afterward returned to the Queen, and after a stormy interview she gave them an assurance that she would not proclaim the Constitution for the present. She addressed the assembled natives outside, explaining how the ministers had prevented her keeping her promise to them and compelled her to defer its execution, and adjuring them to return to their homes and maintain the peace. The ministers would have nothing more to do with the revolutionary movement that they had invoked, but continued to labor with the Queen until they finally got her to put her name to a proclamation, in which she explained that she had yielded to pressure put upon her by her native subjects, and gave the assurance that “any changes in the fundamental law of the land will be sought only by methods provided in the Constitution.” The members of the diplomatic body were invited to examine this declaration intended to avert the threatened revolution, and with their approval it was published on Monday morning. The representatives of England, France, Japan, and Portugal were at the meeting, but not the minister of the United States, who declined to be present. He was formally presented with a copy of the document.

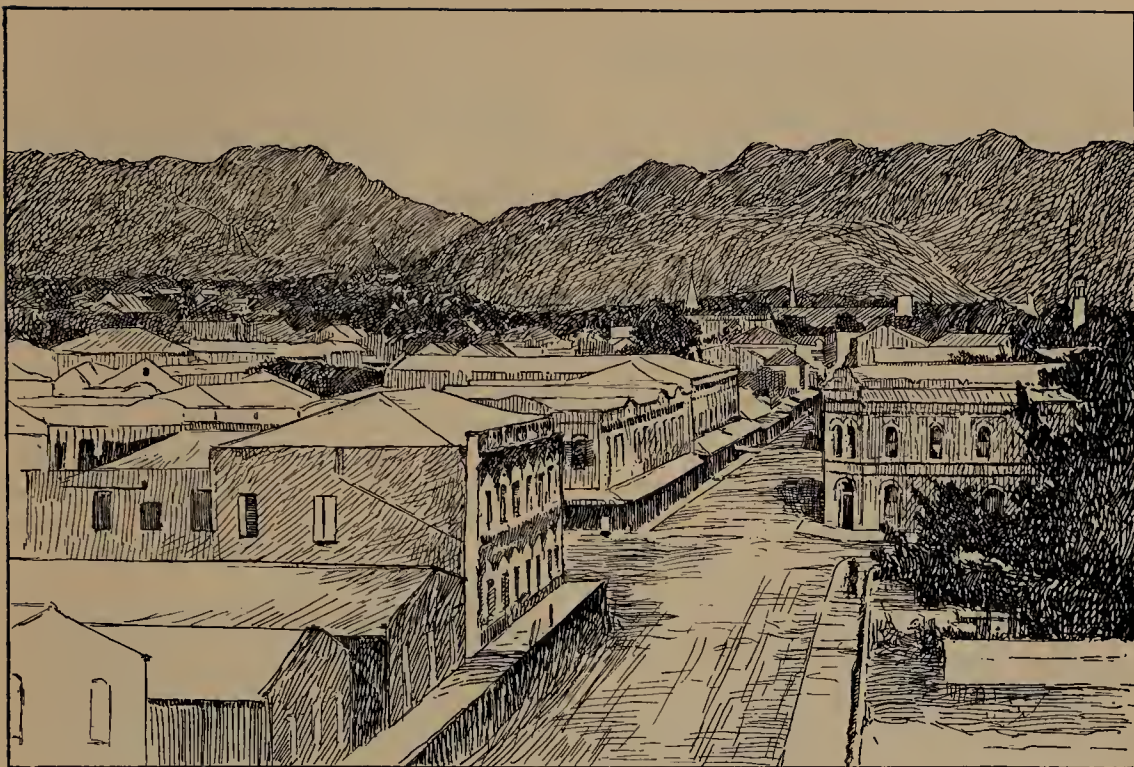
**The Committee of Safety.**—A meeting of 50 to 100 prominent citizens met in the office of W. O. Smith on the afternoon of Jan. 14. Colburn and Peterson, the Queen’s ministers, were present, and the former counseled armed resistance to the revolutionary purpose of the Queen, which they had not yet persuaded her to abandon or defer. These citizens appointed a committee of public safety, composed of 13 members, to consider the situation and devise ways and means for the maintenance of the public peace and the protection of life and property. The committee decided to depose the Queen and establish a provisional government, and on the following morning invited Colburn and Peterson to take charge of it; but the ministers, who had meanwhile induced the Queen to recede from her purpose, declined. The committee resolved to abrogate the monarchy and treat for the annexation of the islands to the United States. In the afternoon of Jan. 16 two mass meetings were held, one by the supporters of the Committee of Safety and one by the friends of the Government. The former voted the following resolution:

We do hereby ratify and appoint and indorse the action taken and report made by the said Committee of Safety, and we do hereby further empower such committee to further consider the situation and further devise such ways and means as may be necessary to secure the permanent maintenance of law and order and the protection of life, liberty, and property in Hawaii.

In the other meeting it was resolved as follows:

That the assurance of Her Majesty contained in this day’s proclamation is accepted by the people as





A VIEW IN MAIN STREET, HONOLULU.

a satisfactory guarantee that the Government does not and will not seek any modification of the Constitution by any other means than those provided in the organic law.

Before the first meeting, Marshal Wilson, the head of the police, went to the Committee of Safety and demanded that the meeting should not be held, promising at the same time that the Queen would not issue a new Constitution, even if he had to use force to prevent her. Mr. Thurston declined to accept such a guarantee, and said that the Americans would stand it no longer, and purposed settling the matter once and for all. Wilson reported to the Cabinet, and advised arresting the committee, but the Cabinet refused to allow it. After the adjournment of the first meeting the Committee of Safety sent a petition for protection to the United States minister, who had arrived on the man-of-war "Boston" from another part of the islands on Saturday. It was couched in the following terms:

We, the undersigned citizens and residents of Honolulu, respectfully represent that, in view of recent public events in this kingdom, culminating in the revolutionary acts of Queen Liliuokalani on Saturday last, the public safety is menaced, and lives and property are in peril, and we appeal to you and the United States forces at your command for assistance.

The Queen, with the aid of armed force, and accompanied by threats of violence and bloodshed from those with whom she was acting, attempted to proclaim a new Constitution, and, while prevented for the time from accomplishing her object, declared publicly that she would only defer her action.

This conduct and action were upon an occasion and under circumstances which have created general alarm and terror.

We are unable to protect ourselves without aid, and therefore pray for the protection of the United States forces.

Minister Stevens addressed a written request to Capt. Gilbert C. Wiltse, of the "Boston," the commander of the American naval force, as follows:

In view of the existing critical circumstances in Honolulu, indicating an inadequate legal force, I request you to land marines and sailors from the ship under your command for the protection of the United States legation and the United States consulate, and to secure the safety of American life and property.

Capt. Wiltse concurred in the views of Mr. Stevens, and ordered a detachment of marines to land under the command of Lieut.-Com. Swinburne, to whom he gave these instructions:

You will take command of the battalion, and land in Honolulu for the purpose of protecting our legation and the lives and property of American citizens, and to assist in the preservation of public order. Great prudence must be exercised by both officers and men, and no action taken that is not fully warranted by the condition of affairs and by the conduct of those who may be inimical to the treaty rights of American citizens. You will inform me at the earliest practicable moment of any change in the situation.

The Committee of Safety regretted that they had been so hasty in asking for the intervention of United States troops, and sent a committee to Minister Stevens to prevail on him to delay the landing of the men. But the troops, 160 strong, had already landed. A few were accommodated at the American legation and at the consulate. Capt. Wiltse had expected them to be quartered in the opera house; but the agent of the hall refused to let Mr. Stevens have it for the men, on the plea that it might suffer damage, and finally Arion Hall was secured. When Mr. Thurston and 2 other delegates of the Committee of Safety told Minister Stevens that they were not prepared to have the troops land so



soon, he said to them, "Gentlemen, the troops of the 'Boston' landed at five o'clock this afternoon, whether you are ready or not." The Queen's Minister of Foreign Affairs sent the following protest to Minister Stevens:

I have the honor to inform your Excellency that the troops from the United States steamer "Boston" were landed in this port at 5 o'clock this evening, without the request or knowledge of Her Majesty's Government.

As the situation is one which does not call for interference on the part of the United States Government, my colleagues and myself would most respectfully request of your Excellency the authority upon which this action was taken. I would also add that any protection that may have been considered necessary for the American legation or for American property and interests in this city would have been cheerfully furnished by Her Majesty's Government.

Another protest came from the Governor of the island, who wrote:

It is my duty to solemnly protest to your Excellency against the landing this evening, without permission from the proper authorities, of an armed force from the United States ship "Boston."

Your Excellency well knows that, when you have desired to land naval forces of the United States for the purpose of drill, permission by the local authorities has been readily accorded.

On the present occasion, however, the circumstances are entirely different, and ostensibly the present landing is for the discharge of functions which are distinctly responsible duties of the Hawaiian Government.

Such being the case, I am compelled to impress upon your Excellency the international questions involved in this matter and the grave responsibilities thereby assumed.

Mr. Stevens, on the following day, sent this answer to Mr. Parker:

Yours of yesterday, in regard to the landing of the United States naval forces in Honolulu, duly received and its import considered.

In whatever the United States diplomatic and naval representatives have done, or may do, at this critical hour of Hawaiian affairs, we will be guided by the kindest views and feelings for all the parties concerned, and by the warmest sentiments for the Hawaiian people and the persons of all nationalities.

In answer to Mr. Cleghorn he wrote:

My responsibility as the United States minister plenipotentiary at this critical time in Hawaiian affairs it is impossible for me to ignore. I assure you that whatever responsibility the American diplomatic and naval representatives have assumed, or may assume, we shall do our utmost to regard the welfare of all persons and interests concerned.

The Queen, on the 17th, addressed the following communication to Minister Stevens, which was countersigned by all the ministers:

The assurance conveyed by a royal proclamation by myself and ministers yesterday having been received by my native subjects, and by them ratified at a mass meeting, was received in a different spirit by the meeting representing the foreign population and interests in my kingdom. It is now my desire to give to your Excellency, as the diplomatic representative of the United States of America at my court, the solemn assurance that the present Constitution will be upheld and maintained by me and my ministers, and no changes will be made except by the method therein provided. I desire to express to your Excellency this assurance in the spirit of that friendship which has ever existed between my kingdom and that of

the Government of the United States of America, and which I trust will long continue.

An hour after this had been delivered to the American minister the members of the Queen's Cabinet called on him to ask him to assist the authorized Government in suppressing the revolt, or, if he did not wish to do that, to remove the United States troops back on board the "Boston," as the Government had ample forces. He answered that the troops were there for the specific purpose of protecting American life and property, and could not take sides either with the monarchy or with those who were creating a new government. The minister and naval commander, in landing troops without the request, and keeping them on shore against the protests of the established authorities, acted on standing instructions first issued by Secretary of State Bayard and the Secretary of the Navy in 1887, according to which American troops should be landed in Hawaii when necessary for the protection of American life and property and for the preservation of public order.

**Establishment of a Provisional Government.**—The Committee of Safety that evening met in the house of Henry Waterhouse and proceeded to organize a government that could officially assume and systematically administer the public affairs of the country on the abrogation of the monarchy. The first thing to do was to select a commander for the volunteers that had pledged themselves to fight for the revolution, and the post was offered to John H. Soper.

The Committee of Safety met again, on the morning of Tuesday, the 17th, at the office of W. O. Smith, to complete their plans, and in the afternoon, one of the committee, Cooper, an American citizen, at twenty minutes before three o'clock read a proclamation ending with the following declaration:

We, citizens and residents of the Hawaiian Islands, organized and acting for the public safety and the common good, hereby proclaim as follows:—

The Hawaiian monarchical system of government is hereby abrogated.

A provisional government for the control and management of public affairs and the protection of the public peace is hereby established, to exist until terms of union with the United States of America have been negotiated and agreed upon.

During the reading, S. A. Damon and W. O. Smith grew apprehensive lest the Government authorities should seize their persons, and the former sent across the street to the barracks to ask Lieut. Swinburne if he was not going to send some one over to protect them. Lieut. Swinburne replied: "Capt. Wiltse's orders are to remain passive."

After the reading of the proclamation the committee adjourned to the office of the Minister of the Interior to formulate their plans and get themselves into working order as a provisional government. While they were there, Parker and Cornwell came in to hold a conference with them. Minister Stevens, having sent his aid, and Capt. Wiltse having sent an officer, to examine the Government building and see if the Provisional Government was in actual possession, formally recognized the Provisional Government as the *de facto* Government of the country, in compliance with the following request of



the Executive and Advisory Councils of the Provisional Government:

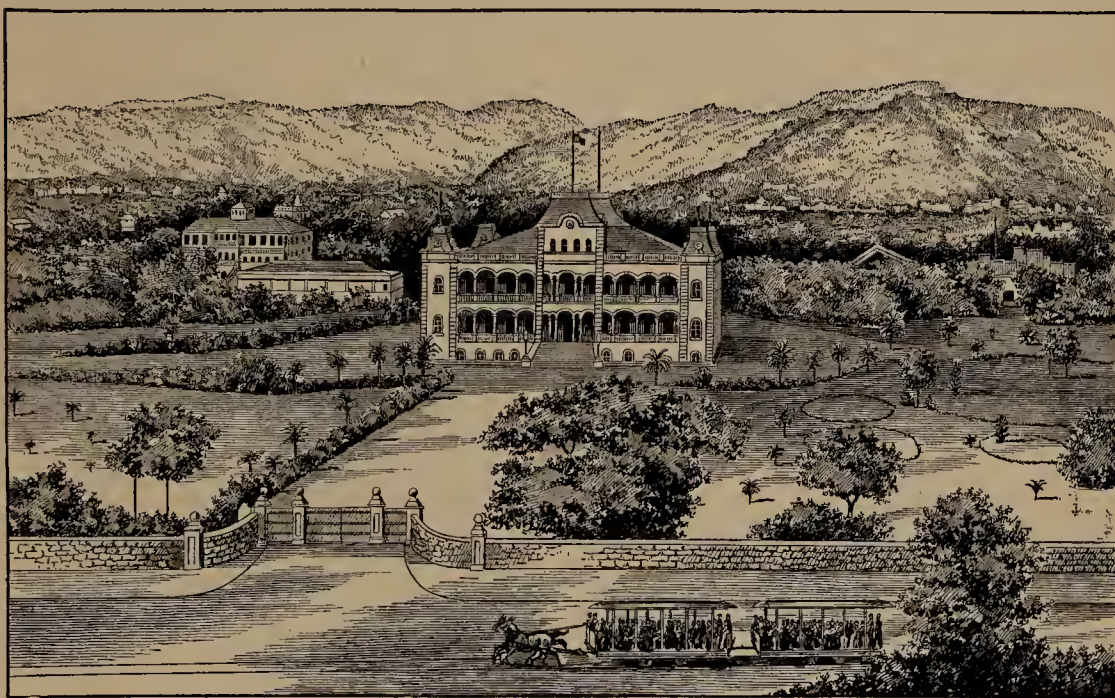
Such Provisional Government has been proclaimed, is now in possession of the Government departmental building, the archives, and the treasury, and is in control of the city. We hereby request that you will, on behalf of the United States of America, recognize it as the existing *de facto* Government of the Hawaiian Islands, and afford to it the moral support of your Government, and, if necessary, the support of American troops to assist in preserving the public peace.

Between four and five o'clock Minister Stevens sent a reply to a note of inquiry from the Queen's Cabinet informing the 4 ministers that he had recognized the revolutionary Govern-

ments not willfully blind. Without sleep for two days and nights on the "Boston," without stopping to change dress, as soon as possible I sought to co-operate with the English minister, to get access to the Queen, and to try by friendly advice to arrest the revolution. It was too late; the mob of royal retainers were already gathering at the palace to aid the Queen to carry out her plan of overturning the Constitution.

In a note acknowledging and expressing deep appreciation for Minister Stevens's communication recognizing the Provisional Government, Sanford B. Dole, its President, requested that the United States forces should preserve order, saying:

We have conferred with the ministers of the late Government, and have made demand upon the mar-



THE ROYAL PALACE, HONOLULU.

ment. In his dispatch of Jan. 18 to Secretary Foster describing the revolution, he says:

The Committee of Public Safety forthwith took possession of the Government building, archives, and treasury, and installed the Provisional Government at the head of the respective departments. This being an accomplished fact, I promptly recognized the Provisional Government as the *de facto* Government of the Hawaiian Islands.

In regard to this revolution, Mr. Stevens says:

When Capt. Wiltse and myself, on the "Boston," arrived in the harbor of Honolulu, in the forenoon of Jan. 14, I was completely taken by surprise at what the Queen, the palace associates, and the lottery gang had accomplished in ten days. The remonstrances of the Chamber of Commerce, of the numerous petitions of some of the best people of the island, both whites and natives, and the earnest pleadings of those who had previously adhered to the monarchy, had been defiantly disregarded. I found the city in great excitement, and learned that for many hours there had been an anxious desire for the return of the "Boston," and this desire was strong among the thoughtful supporters of the monarchy as well as among the great body of the responsible citizens. The surging, irresistible tide of revolution was then obvious to all per-

sons. We are not actually yet in possession of the station house, but, as night is approaching and our forces may be insufficient to maintain order, we request the immediate support of the United States forces, and would request that the commander of the United States forces take command of our military forces, so that they may act together for the protection of the city.

It has been claimed that at this time the Queen had a well-armed force of 700 men commanded by her favorite, Wilson. But Minister Stevens pertinently says:

The representation that Wilson had sufficient force in the limited area of the police station to sustain the monarchy is notoriously absurd to all honest persons acquainted with the facts. If the Queen had this force, why had it not been exerted while the outraged people were openly holding their great mass meeting and making their arrangements for the establishment of a new Government? Why did Wilson and his so-called force wait until the outraged citizens gathered with their rifles and bottled them up in the police station house? Why did the Queen's representatives call at the United States legation on the 17th and ask the aid of the United States force to support her?



**The Queen's Surrender.**—After receiving the official recognition of the United States minister, Mr. Damon and another representative of the Provisional Government went over to the station house, where the Queen's ministers were with her armed forces. Mr. Damon and J. O. Carter, representing the Provisional Government, and the four ministers accompanied the Queen to the palace, where a conference was held, at which two young princes, H. A. Widemann, Paul Neumann, and E. C. McFarland were present also. Mr. Damon informed the Queen that she was deposed and a provisional government established, and asked her to submit quietly and sign an abdication. The ministers counseled this course, but she refused, and was at first upheld by Judge Widemann and Paul Neumann. Damon told the Queen that she could surrender under protest, and assured her that her case would be reviewed and adjudicated upon by the Government at Washington. Carter suggested that peaceful submission to force would help her case. Her legal counselors advised her to surrender under protest, Judge Widemann predicting that the result would be the same as in 1843, when Great Britain restored the Hawaiian sovereign and flag. At last she gave way, and signed a paper reserving all her rights as Queen under the Constitution, protesting against all acts done against herself and the Constitutional Government by "certain persons claiming to have established a provisional government," declaring that she yielded "to the superior force of the United States of America," whose minister plenipotentiary "has caused United States troops to be landed at Honolulu, and declared that he would support the said Government," and resigning her powers in the following terms:

Now, to avoid any collision of armed forces and perhaps the loss of life, I do, under this protest, and impelled by said force, yield my authority until such time as the Government of the United States shall, upon the facts being presented to it, undo the action of its representative and reinstate me in the authority which I claim as the constitutional sovereign of the Hawaiian Islands.

Mr. Damon accepted this agreement as containing the best terms he could make with the Queen, and took it to Judge Dole, the President of the Provisional Government, who indorsed it.

The station-house and barracks were still in the possession of the Queen's forces. When a demand was made that Marshal Wilson should surrender the building, arms, and ammunition and disband his force, he refused to do so except upon the written command of the Queen. The order was then prepared and her signature obtained, and when this was taken to the Marshal he surrendered the station house and military barracks, about half past seven o'clock.

After the surrender of the Queen's Government the Provisional Government was formally recognized as the existing *de facto* Government within two or three days by the French, Portuguese, British, and Japanese representatives.

**Proclamation of an American Protectorate.**—Agitation on the part of whites opposed to annexation, coupled with the efforts of one English and two native newspapers to block the efforts of the Government, created a situ-

ation of danger which the new rulers felt unable to meet. They were therefore impelled to ask for the direct assistance of the United States Government in the preservation of public security and order. At their invitation, Minister Stevens and Capt. Wiltse decided to establish a protectorate over the Hawaiian Islands, and when the flag of the United States was raised at nine o'clock on Feb. 1, the United States minister issued the following proclamation to the Hawaiian people:

At the request of the Provisional Government of the Hawaiian Islands, I hereby, in the name of the United States of America, assume protection of the Hawaiian Islands for the protection of life and property and occupation of public buildings and Hawaiian soil, so far as may be necessary for the purpose specified, but not interfering with the administration of public affairs by the Provisional Government. This action is taken pending and subject to negotiations at Washington.

Early in the morning a force of United States marines was drawn up before the Government building, and after the flag was hoisted over it the proclamation was publicly read. In a dispatch announcing the assertion of a protectorate, Minister Stevens said:

The Hawaiian pear is now fully ripe, and this is the golden hour for the United States to pluck it.

On the receipt of his dispatch Secretary Foster wrote, Feb. 11, disavowing the minister's action so far as it implied "the establishment of a protectorate, which is in fact the positive erection of a paramount authority over or in place of the duly constituted local Government, and the assumption by the protector of the especial responsibilities attached to such formal protection," or so far as it impaired "in any way the independent sovereignty of the Hawaiian Government by substituting the flag and the power of the United States as the symbol and manifestation of paramount authority."

You are authorized, upon the receipt of these instructions, to arrange with the commanding naval officer for the continued presence on shore of such marine force as may be practicable and requisite for the security of the lives and property interests of citizens of the United States, and the repression of lawlessness and public disturbance threatening them, whenever in your judgment it shall be necessary so to do, or when such co-operative measures may be sought for good cause by the Government of the Hawaiian Islands; being, however, always careful to make due discrimination between those functions of voluntary or accorded protection and the assumption of a protectorate over the Hawaiian Islands by the United States. No step should be taken by you, or will be sanctioned by this Government, which might tend to derogate in any way from the independence of the Government of the Hawaiian Islands, which the United States have recognized as sovereign, and with which they treat on terms of sovereign equality.

The flag was kept flying and the American garrison maintained until after the Democratic Administration came into power at Washington. Capt. Wiltse was recalled, and Rear-Admiral Skerrett, who had landed troops in Honolulu in 1874, being appointed commander of the Pacific squadron, was ordered to Hawaii by command of President Harrison. Secretary of the Navy Tracy told him, before he took his departure, that the Government would "be very glad to



annex Hawaii, but as a matter of course none but the ordinary legal means can be used to persuade these people to come into the United States." In Hawaii there was fear of British interference, and when the British cruiser "Garret" arrived, shortly after the American flag was hoisted, preparations were made for defense.

**The Treaty of Annexation.**—On Jan. 19 the commissioners sailed on a specially chartered steamer for San Francisco, bringing the draught of a treaty of annexation. The Queen's attorney, Paul Neumann, applied for passage on the same vessel, in order that he might present her case to the American Government, but it was refused. The annexation commissioners arrived in Washington on Feb. 3, and discussed the treaty with the Secretary of State. They had another interview on the 11th, when the terms were practically agreed upon, and on the 14th the treaty was formally concluded.

The treaty provided that, until Congress determines otherwise, the existing Government and laws of Hawaii will continue, subject to the paramount authority of the United States. A resident commissioner will be appointed with power to veto any acts of the Government. Until the necessary legislation has been enacted the existing foreign and commercial relations will be continued. The further immigration of Chinese will be prohibited, and the Chinese now in Hawaii will not be permitted to enter the United States. The United States will take over the public debt, amounting to \$3,250,000, and will pay an annual allowance of \$20,000 to Queen Liliuokalani, and a lump sum of \$150,000 to Princess Kaiulani. The sugar producers will not take part in the bounty under the McKinley law unless Congress so enacts.

In accordance with international law, treaties between two countries expire if either contracting party ceases to be an independent state. The treaties concluded by Hawaii will, therefore, terminate upon annexation.

Among the documents accompanying the treaty, as it was submitted to Congress, was a

letter from the deposed Queen to President Harrison, praying that no action should be taken until her envoy could be heard, and defining her position in the following language:

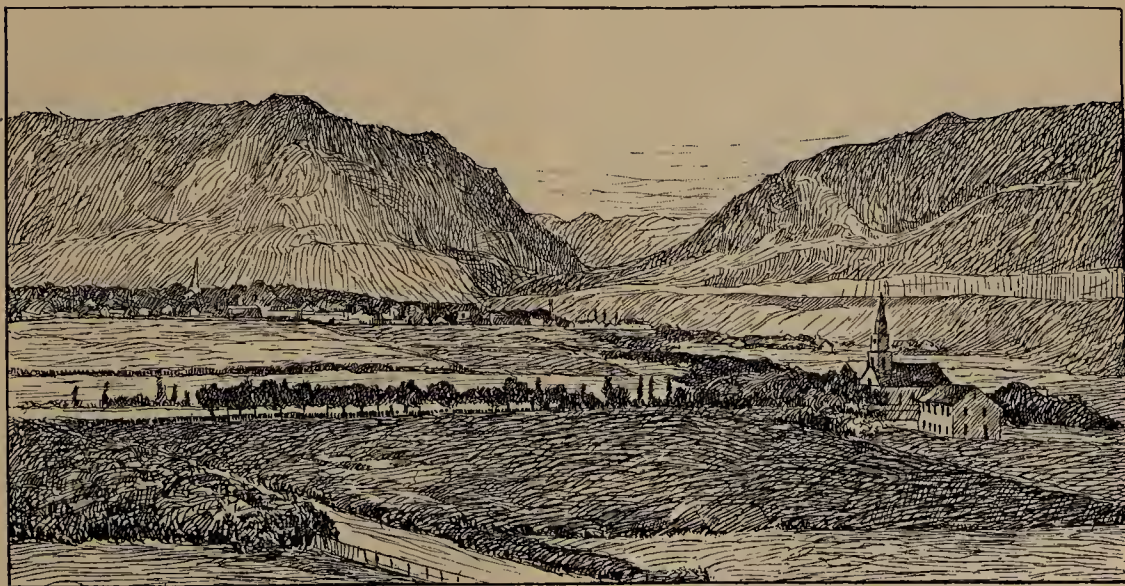
Some of my subjects, aided by aliens, have renounced their loyalty and revolted against the constitutional Government of my kingdom. They have attempted to depose me and to establish a provisional government, in direct conflict with the organic law of this kingdom. Upon receiving incontestable proof that his Excellency the minister plenipotentiary of the United States aided and abetted their unlawful movements and caused United States troops to be landed for that purpose, I submitted to force, believing that he would not have acted in that manner unless by the authority of the Government which he represents.

This action on my part was prompted by three reasons: The futility of a conflict with the United States; the desire to avoid violence, bloodshed, and the destruction of life and property; and the certainty which I feel that you and your Government will right whatever wrongs may have been inflicted upon us in the premises.

In due time a statement of the true facts relating to this matter will be laid before you, and I live in the hope that you will judge uprightly and justly between myself and my enemies. This appeal is not made for myself personally, but for my people, who have hitherto always enjoyed the friendship and protection of the United States.

The treaty was laid before the Senate for its action on Feb. 15. President Harrison, in his message, submitting the treaty, which was based on the statement of facts embodied in a report of Secretary Foster, said:

It is deemed by the Government more desirable to annex the islands than to proclaim a protectorate over them. The United States in no way promoted the overthrow of the monarchy, which originated in what seems to have been a reactionary revolution against the policy of Queen Liliuokalani, imperiling foreign interests. It is evident that the monarchy was effete, and that the Queen's Government has been a prey to designing persons. The restoration of the monarchy is undesirable, if not impossible. It is essential that none of the other great powers shall secure the islands, as this would be inconsistent with our safety and the peace of the world.



A VIEW IN THE ISLAND OF HAWAII.



In conclusion, the message declared that no Government had protested against the projected annexation. Prompt action was desirable, and legislation on the subject should be characterized by great liberality and a high regard for the rights of natives and foreigners.

Secretary Foster had received assurances from the representatives in Washington of the leading powers and from American ministers abroad, that convinced him that annexation on the part of the United States would be regarded with satisfaction, or at any rate would meet with ready acquiescence. The statement in the message that "the overthrow of the monarchy was not in any way promoted by this Government" was based on the dispatches of Mr. Stevens. The statements of the Hawaiian commissioners were authority for the following passage:

At the time the Provisional Government took possession of the Government buildings no troops or officers of the United States were present or took any part whatever in the proceedings. No public recognition was accorded to the Provisional Government by the United States minister until after the Queen's abdication, and when they were in effective possession of the Government buildings, the archives, the treasury, the barracks, the police station, and all the potential machinery of the Government.

After President Cleveland assumed office he withdrew the treaty from the Senate for further consideration, March 9. The Hawaiian commissioners returned to their country, all except Mr. Thurston, who in May was commissioned Hawaiian minister at Washington, succeeding J. Mott Smith, who had been recalled.

#### **The Mission of Commissioner Blount.—**

As a protest from the Queen accompanied the treaty, stating that she yielded to the force of the United States and reserved her case for the decision of the President of the United States, and as doubts were raised regarding the agency and effect of the presence of the United States troops and the prompt recognition of the Provisional Government by the United States minister, also as to whether the Queen had committed an illegal act, and whether annexation and the Provisional Government had the support of the great body of the Hawaiian nation, President Cleveland, on March 7, three days after his inauguration, sent James H. Blount, of Georgia, long chairman of the Committee on Foreign Affairs in the House of Representatives, to Hawaii as a special commissioner, to investigate the facts attending the subversion of the constitutional Government and the installment of the Provisional Government, and to report as to the expediency of annexation. His open instructions from Secretary Gresham, dated March 11, were as follow:

You will investigate and fully report to the President all the facts you can learn respecting the condition of affairs in the Hawaiian Islands, the causes of the revolution by which the Queen's Government was overthrown, the sentiment of the people toward existing authority, and in general all that can fully enlighten the President touching the subject of your mission.

To enable you to fulfill the charge, your authority in all matters touching the relations of this Government to the existing or other government of the islands and the protection of our citizens therein is paramount, and in you alone, acting in co-operation with the commander of the naval forces, is vested full

discretion and power to determine when such forces should be landed or withdrawn. You are, however, authorized to avail yourself of such aid and information as you may desire from the present minister of the United States at Honolulu—Mr. John L. Stevens—who will continue until further notice to perform the usual functions attaching to his office not inconsistent with the powers intrusted to you. An instruction will be sent to Mr. Stevens, directing him to facilitate your presentation to the head of the Government on your arrival, and to render you all needed assistance.

The withdrawal from the Senate of the recently signed treaty of annexation for re-examination by the President leaves its subject matter in abeyance, and you are not charged with any duty in respect thereto. It may be well, however, for you to dispel any possible misapprehension which its withdrawal may have excited touching the entire friendliness of the President and the Government of the United States toward the people of the Hawaiian Islands, or the earnest solicitude here felt for their welfare, tranquillity, and progress.

Historical precedents and the general course of the United States authorize the employment of its armed force in foreign territory for the security of the lives and property of American citizens and for the suppression of the lawless and tumultuous acts threatening them, and the powers conferred to that end upon the representatives of the United States are both necessary and proper, subject always to the exercise of a sound discretion in their application. In the judgment of the President, your authority, as well as that of the commander of the naval forces in Hawaiian waters, should be and is limited in the use of physical force for such measures as are necessary to protect the persons and property of our citizens, and, while abstaining from any manner of interference, to use your friendly offices in the interest of a peaceful settlement of the troubles within the limits of sound discretion.

Should it be necessary to land an armed force upon Hawaiian territory on occasions of popular disturbance, when the local authority may be unable to give adequate protection to the life and property of citizens of the United States, the assent of such authority should first be obtained, if it can be done without prejudice to the interests involved. Your power in this regard should not, however, be claimed to the exclusion of similar measures by the representatives of other powers for the protection of the lives and property of their citizens or subjects residing in the islands.

While the United States claim no right to interfere in the political or domestic affairs or in the internal conflicts of the Hawaiian Islands otherwise than as herein stated, or for the purpose of maintaining any treaty or other rights they possess, the Government will adhere to its consistent and established policy in relation to them, and it will not acquiesce in domestic interference by other powers.

Commissioner Blount was conveyed by the United States revenue cutter to Honolulu, where he arrived on March 29. He declined receptions tendered both by the Hawaiian Patriotic League and the Annexation Club. The latter, numbering 1,200 members, was formed as soon as it became known that the treaty had been shelved. Members of the American colony tendered the American commissioner the use of a mansion, with furniture, carriages, etc., which Minister Stevens strongly urged him to accept, but he preferred to remain at a hotel. This rejection of an intended courtesy threw the commissioner into the company almost solely of the Royalists, who made headquarters at that hotel. On the day after his arrival he was introduced by Mr. Stevens to President Doie, and presented Presi-

dent Cleveland's letter accrediting him in the following language:

I have made choice of James H. Blount, one of our distinguished citizens, as my special commissioner to visit the Hawaiian Islands, to make a report to me concerning the present status of affairs in that country. He is well informed of our sincere desire to cultivate and maintain to the fullest extent the friendship which has so long existed between the two countries, and in all matters affecting relations with the Government of the Hawaiian Islands his authority is paramount.

On the 31st he gave notice to President Dole of his intention to terminate the American protectorate, and on April 1 the naval authorities hauled down the American flag and withdrew the garrison of marines to the ships. In the evening Mr. Stevens called on the commissioner to urge the necessity of keeping the troops on shore to prevent Japanese interference, as it was suspected that the Queen had arranged with the Japanese commissioner to have troops landed from the Japanese man-of-war "Naniwa" to reinstate her. The Japanese commissioner, when he learned that the presence of the "Naniwa" had given rise to such a suggestion, requested his Government to order the vessel away, and expressed regret to Mr. Blount that any one should charge that the Empire of Japan, which had so many reasons for valuing the friendship of the Government of the United States, should consent to offend that Government by entering into the conflicts of the Hawaiian Islands. On May 4 Mr. Blount wrote that the indications were unmistakable that a majority of the people of the islands are opposed to annexation. In his last letter, dated July 31, he said:

The condition of parties in the islands is one of quiescence. The action of the United States is awaited by all as a matter of necessity. This condition, it can be assumed, will remain until the proposition to annex is accepted or rejected.

In the latter contingency no sudden movement is likely to occur. The present Government can only rest on the use of military force possessed of most of the arms in the islands, with a small white population to draw from to strengthen it. Ultimately it will fall, without fail. It may preserve its existence for a year or two, but not longer.

Mr. Stevens was recalled in May, and then Mr. Blount was appointed minister plenipotentiary.

The question was raised in the Senate as to the constitutionality of Mr. Blount's appointment without the consent of the Senate.

The manner in which Commissioner Blount collected testimony is in dispute. It is charged that he refused to listen to any but such as would further a predetermined purpose to condemn the Provisional Government.

In his report to Secretary Gresham, July 17, he describes the antecedents and character of the Missionary party in the following words:

From 1820 to 1866 missionaries of various nationalities, especially American, with unselfish toil, patience, and piety, had devoted themselves to the improvement of the natives. They gave them a language, a religion, and an immense movement on the lines of civilization. In process of time the descendants of these good men grew up in secular pursuits. Superior by nature, education, and other opportunities, they secured wealth. They sought to succeed to the political control exercised by their fathers. The revered missionary disappeared. In his stead there came the Anglo-Saxon

in the person of his son, ambitious to acquire wealth and to continue that political control conceded to his pious ancestor. Hence, in satire the native designated him a missionary, which has become a campaign phrase of wonderful potency.

This leads Mr. Blount to ask whether, with the native convinced that the foreigners had stolen his land, degraded free labor, and exposed his daughters to the evil influence of an overwhelming degraded male population, with the whites vaunting their wealth and intelligence, their missionary work, and condemning the weaknesses of the natives, there was not a powerful provocative to divergence and political strife?

The commissioner traces all recent troubles on the islands to the Constitution forced upon King Kalakaua by the Missionary party, and never submitted to the vote of the people. The success of the revolution of Jan. 17 he attributed to the encouragement of Minister Stevens and the menace of armed intervention.

On Saturday evening, Jan. 14, a small body of men—Germans, natives, and Americans—took up the subject of dethroning the Queen and proclaiming a new government with a view to annexation to the United States.

The first and most momentous question with them was to devise some plan to have the United States troops landed. Mr. Thurston, who appears to have been the leading spirit, on Sunday sought two members of the Queen's Cabinet and urged them to head a movement against the Queen and to ask Minister Stevens to land the troops, assuring them that in such an event Mr. Stevens would do so.

Failing to enlist any of the Queen's Cabinet in the cause, it was necessary to devise some other method to accomplish this. A Committee of Safety, consisting of 13 members, had been formed from a little body of men assembled in W. O. Smith's office. A deputation of these, informing Minister Stevens of their plans, arranged with him to land the troops if they would request it "for the purpose of protecting life and property."

It was further agreed between him and them that in the event they should occupy the Government building, and proclaim a new government, he would recognize them. The two leading members of the committee, Messrs. Thurston and Smith, growing uneasy as to the safety of their persons, also went to him to know if he would protect them in the event of their arrest by the authorities, to which he gave his assent.

A meeting of the committee was held that night at the house of Henry Waterhouse, next door to Minister Stevens's house, where they determined on the dethronement of the Queen, and selected officers. At this meeting it was assented to by all that Mr. Stevens had agreed with the Committee of Safety that in the event it occupied the Government building and proclaimed a provisional government he would recognize it as a *de facto* Government.

The leaders of the revolutionary movement would not have undertaken it but for Mr. Stevens's promise to protect them against any danger from the Government. But for this their mass meeting would not have been held; but for this no request to land the troops would have been made. Had the troops not been landed no measures for the organization of a new government would have been taken. The American minister and the revolutionary leaders had determined upon annexation to the United States, and had agreed upon the part each was to act to the very end.

He comments on the absence from the files of the legation of Mr. Stevens's reply to the call of the committee for the landing of marines, and says that it was the first time that American troops were ever landed on the islands at the in-



stance of a committee of safety without notice to the existing Government. Mr. Stevens has denied that he sent a reply to the committee, and denounces as false the statements that he had agreed to land troops or ever promised to protect the revolutionists. Mr. Blount found that the great body of the natives and a large proportion of whites were opposed to annexation. He found no annexationist who was willing to have the matter submitted to the popular vote.

**The Provisional Government.**—The officers of the Provisional Government were named in the proclamation of Jan. 17. Sanford B. Dole was made President. The Cabinet or Executive Council consisted of Mr. Porter, Minister of Finance; Mr. King, Minister of the Interior; and W. O. Smith, Attorney-General. President Dole assumed the duties of Minister of Foreign Affairs.

Early in February S. M. Damon was chosen as Vice-President of the Provisional Government.

Commissioners were appointed to proceed to Washington to negotiate a treaty of annexation to the United States. Their chairman was Lorrin A. Thurston, his associates being W. R. Castle, Joseph Marsden, C. L. Carter, and W. C. Wilder.

On Jan. 20 President Dole issued a proclamation announcing that all powers and duties belonging to the Sovereign of Hawaii were vested in the President of the Provisional Government, and that the Executive Council would perform the duties of the Cabinet. Another decree fixed the punishment—imprisonment for not less than six months nor more than six years—for any person who recruited soldiers or sailors to engage in hostility against the Provisional Government or acted in any other treasonable manner. All persons in the employ of the Government were required to take the oath of allegiance within twenty days. It was decided by the vote of the Executive and Advisory Councils to organize a national guard of 4 companies. John H. Soper was appointed commander of the forces, with the rank of colonel. W. G. Ashley was appointed marshal. Martial law was continued.

The Executive and Advisory Councils of the Provisional Government formed together the Legislature. One of its first acts was to repeal the lottery franchise act. Another prescribed an oath of allegiance to the Provisional Government, the takers of which were required not to renounce, but expressly to reserve, all allegiance that they might owe to any foreign country. Another act prohibited the importation of firearms, ammunition, dynamite, or any explosive except by the Government. On Jan. 30 Col. Soper issued an order requiring all citizens to declare what arms they had in their possession. The Government buildings were converted into barracks for the volunteer forces. Later, alien and sedition laws were enacted, permitting the expulsion or imprisonment of seditious non-citizens, and supplementary measures provided for the imprisonment without bail of persons suspected of plotting against the Government, and the suppression of newspapers expressing disloyal sentiments and the imprisonment of their editors. A law was made requiring that the names of the proprietors and editors of every newspaper should be conspicuously printed in its pages, in order that they might be held accountable for what was published. This meas-

ure was directed specially against a paper printed in Hawaiian and English, to which the Queen was suspected of giving pecuniary support. The principal native journals were suppressed by such measures. One of the early laws decreed that any one found talking against the Provisional Government or against the character of any of the Executive or Advisory Councils should be punishable by a fine of \$100 and imprisonment for thirty days.

By another act, any person having cause to believe that arms or ammunition were secreted for purposes of insurrection, or any seditious purpose, might swear out a search warrant and have the munitions confiscated, if any were found. Up to Feb. 1 the sessions of the new Government were held with closed doors, after which newspaper reporters were admitted. The opium law was repealed. The Board of Health was reorganized, and efforts were made to carry out thoroughly the law requiring all lepers to be taken to the settlement on Molokai Island. One officer was shot by a band of lepers who lived as outlaws in a mountain glen. After the American flag was hoisted over the Government building a guard of marines was stationed at its doors. By act of the Legislature a loan of \$750,000 was authorized. Iolani Palace was stripped of its furniture and treasures soon after it was vacated by the Queen. The ordinary household furnishings and ornaments were given up to Liliuokalani and the Dowager Queen Kapiolani. The gorgeous feather cloaks, the regal crown, and other insignia of royalty, relics of the Kamehamehas, portraits, and state furniture, were retained as the property of the Government. The Provisional Government took possession of the Crown lands, denying the title of Liliuokalani or other claimants, and some of them were disposed of in small holdings to natives and whites. The military force of the Provisional Government, which was increased by constant enlistments, stationed sentries in the streets. The troops of the "Boston" remained on shore and paraded three times a day through the city. On May 22 Charles Nordhoff was summoned before the Executive and Advisory Councils to answer a complaint of having committed a criminal malicious libel, in having published in his letters to the New York "Herald" a statement defamatory of the members in alleging that most of them had signed petitions for the lottery bill. The same day a guard was placed before his door because annexationists had threatened his life. He took the summons to Minister Blount, who told him not to appear or reply, because an American citizen could not be prosecuted criminally in Hawaii for what he published in American papers. On June 23 T. B. Walker, Archie Sinclair, and E. C. Crick were arrested by Marshal Hitchcock, Ashley's successor, for a conspiracy against the Government. Some days before dynamite bombs had been found in the garden of the Queen's house.

When Mr. Porter resigned the Ministry of Finance, in the latter part of May, S. M. Damon was appointed as his successor. F. M. Hatch became Vice-President of the Provisional Government.

**Attempted Mediation of President Cleveland.**—In Secretary Gresham's report to the

President, dated Oct. 18, he recommends that the treaty should not be resubmitted to the Senate.

At an early stage of the movement, if not at the beginning, Mr. Stevens promised the annexationists that as soon as they obtained possession of the Government building, and there read a proclamation of the character above referred to, he would at once recognize them as a *de facto* government, and support them by landing a force from our war ship then in the harbor, and he kept that promise.

This assurance was the inspiration of the movement, and without it the annexationists would not have exposed themselves to the consequences of failure. They relied upon no military force of their own, for they had none worthy of the name.

The Provisional Government was established by the action of the American minister and presence of the troops landed from the "Boston," and its continued existence is due to the belief of the Hawaiians that if they made an effort to overthrow it they would encounter the armed forces of the United States.

Under such circumstances, he asks, "should not the great wrong done to a feeble but independent State by the abuse of the authority of the United States be undone by restoring the legitimate government?" "Our Government," he says, "was the first to recognize the independence of the islands, and it should be the last to acquire sovereignty over them by force and fraud."

Albert S. Willis, of Kentucky, was appointed minister to Hawaii on Sept. 3, to succeed Mr. Blount, who returned to the United States early in August. Mr. Willis was confirmed, received his credentials on Sept. 27, departed for Hawaii on a naval vessel, and was received by President Dole on Nov. 7. There was an excited state of public feeling in Honolulu after his arrival, which became intense when the report of Secretary Gresham foreshadowing the President's policy of restoration reached the islands.

In a confidential letter of instructions, dated Oct. 18, Secretary Gresham informed Minister Willis of the conclusions drawn by the President from Mr. Blount's report, and his plan for reinstating the Queen by moral force under certain conditions.

The Provisional Government was not established by the Hawaiian people or with their consent or acquiescence; nor has it since existed with their consent. The Queen refused to surrender her powers to the Provisional Government until convinced that the minister of the United States had recognized it as the *de facto* authority, and would support and defend it with the military force of the United States, and that resistance would precipitate a bloody conflict with the force. She was advised and assured by her ministers, and by the leaders of the movement for the overthrow of her Government, that if she surrendered under protest her case would afterward be fairly considered by the President of the United States. The Queen finally wisely yielded to the armed forces of the United States then quartered in Honolulu, relying upon the good faith and honor of the President, when informed of what had occurred, to undo the action of the minister and reinstate her and the authority which she claimed as the constitutional sovereign of the Hawaiian Islands.

The President has, therefore, determined that he will not send back to the Senate for its action thereon the treaty which he withdrew from that body for further consideration on the 9th day of March last.

On your arrival at Honolulu you will take advantage of an early opportunity to inform the Queen of this determination, making known to her the Presi-

dent's sincere regret that the reprehensible conduct of the American minister, and the unauthorized presence on land of a military force of the United States, obliged her to surrender her sovereignty for the time being, and rely on the justice of this Government to undo the flagrant wrong.

You will, however, at the same time inform the Queen that, when reinstated, the President expects that she will pursue a magnanimous course by granting full amnesty to all who participated in the movement against her, including persons who are or have been, officially or otherwise, connected with the Provisional Government, depriving them of no right or privilege which they enjoyed before the so-called revolution. All obligations created by the Provisional Government in due course of administration should be assumed.

Having secured the Queen's agreement to pursue this wise and humane policy, which it is believed you will speedily obtain, you will then advise the Executive of the Provisional Government and his ministers of the President's determination of the question which their action and those of the Queen devolved upon him, and that they are expected to promptly relinquish to her her constitutional authority.

Should the Queen decline to pursue the liberal course suggested, or should the Provisional Government refuse to abide by the President's decision, you will report the facts and await further directions.

Rear-Admiral J. S. Skerrett was relieved by Rear-Admiral John Irwin, who took command on Nov. 6. The Provisional Government had imported an additional supply of machine guns, repeating rifles, and ammunition in anticipation of a struggle, and the military forces had been increased until there were 1,100 men under arms. The Government building was barricaded and converted into a fortress. The friends of the Provisional Government boasted that they were stronger than the naval forces of the United States in Hawaii, and declared that they would fight if the forces of the United States should be used to restore the Queen. As threats of assassination were uttered against Liliuokalani, the Provisional Government posted guards before her house. The Government decided to remove from office all employees whose loyalty they could not depend upon. Wundenberg, clerk of the Supreme Court, was dismissed on account of his affidavit contained in Blount's report. In anticipation of an announcement by Minister Willis that the United States would intervene to restore the Queen, the Executive Council framed a declaration to be presented to Minister Willis that the Government declined to enter into negotiations for the restoration of the Crown, and would resist with military force any attempt to overthrow its authority. An American League, composed of American citizens who were prepared to fight for the Government, numbered about 1,200, and there were 1,500 rifles in the hands of annexationists of this temper.

The Queen refused to accept the conditions laid down by President Cleveland, declaring that nothing but the execution of the members of the Provisional Government and banishment of their families would be consented to, and Mr. Willis therefore had nothing to communicate to the Provisional Government. The Secretary of State telegraphed to the minister, on Dec. 3, to require the Queen's unqualified agreement that the obligations assumed by the Provisional Government shall be assumed, and on a pledge that



there shall be no prosecution or punishment of those setting up or supporting the Provisional Government. Should she ask whether, if she acceded to these conditions, active steps would be taken to effect her restoration or to maintain her authority thereafter, the minister was to say that the President could not use force without the authority of Congress.

**President Cleveland's Message to Congress.**—Congress met the day after the last dispatch was sent to Minister Willis. On Dec. 18 President Cleveland sent a message to Congress, in which he reviewed the affair and gave his conclusions.

By an act of war, committed with the participation of a diplomatic representative of the United States and without authority of Congress, the Government of a feeble but friendly and confiding people has been overthrown. A substantial wrong has thus been done, which a due regard for our national character, as well as the rights of the injured people, requires we should endeavor to repair. The Provisional Government has not assumed a republican or other constitutional form, but has remained a mere executive council or oligarchy, set up without the assent of the people. It has not sought to find a permanent basis of popular support, and has given no evidence of an intention to do so. Indeed, the representatives of that Government assert that the people of Hawaii are unfit for popular government, and frankly avow that they can be best ruled by arbitrary or despotic power.

The United States, in aiming to maintain itself as one of the most enlightened of nations, would do its citizens gross injustice if it applied to its international relations any other than a high standard of honor and morality. On that ground the United States can not properly be put in the position of countenancing a wrong after its commission any more than in that of consenting to it in advance. On that ground it can not allow itself to refuse to redress an injury inflicted through an abuse of power by officers clothed with its authority and wearing its uniform; and on the same ground, if a feeble but friendly state is in danger of being robbed of its independence and its sovereignty by a misuse of the power of the United States, the United States can not fail to vindicate its honor and its sense of justice by an earnest effort to make all possible reparation.

These principles apply to the present case with irresistible force, when the special conditions of the Queen's surrender of her sovereignty are recalled. She surrendered not to the Provisional Government, but to the United States. She surrendered not absolutely and permanently, but temporarily and conditionally, until such time as the facts could be considered by the United States. Furthermore, the Provisional Government acquiesced in her surrender in that manner and on those terms, not only by tacit consent, but through the positive acts of some members of the Government, who urged her peaceable submission not merely to avoid bloodshed, but because she could place implicit reliance upon the justice of the United States, and that the whole subject would be finally considered at Washington.

The check that his plans had encountered in the Queen's refusal to accept the conditions imposed, which prevented the presentation of the plans to the Provisional Government, compelled President Cleveland to commend the subject to "the extended powers and wise discretion of Congress," with the assurance that he would "be much gratified to co-operate in any legislative plan which may be devised for the solution of the problem before us which is consistent with American honor, integrity, and morality."

**HAYES, RUTHERFORD BIRCHARD**, nineteenth President of the United States, born in Delaware, Ohio, Oct. 4, 1822; died in Fremont, Ohio, Jan. 17, 1893. His ancestors (Scottish originally) emigrated from England in 1682 and settled at Windsor, Conn. His father, a native of Brattleborough, Vt., married Sophia Birchard, of Wilmington, Vt., and died a short time before the son was born. Rutherford was educated in the common school, prepared for college at Norwalk, Ohio, and Middletown, Conn., and was graduated at Kenyon College, as valedictorian, in 1842. One of his college mates said of him that "he was remarkable for great common sense in his personal conduct; never uttered a profane word, and behaved always like a considerate, mature man." Another fellow-student, like the first a lawyer of high attainments, said: "Hayes left a memory which was a fascination—a glowing memory; he was popular, magnanimous, manly; was a noble, chivalrous fellow, of great promise."

He studied law at Columbus, Ohio, and in Harvard Law School, at the same time attending Longfellow's lectures on literature and studying French and German. He was admitted to the bar in 1845, and in 1846 formed a partnership with Ralph P. Buckland in Lower Sandusky (now Fremont). While in this partnership Mr. Hayes tried at Cincinnati a case referring to the building of a railway bridge over Sandusky Bay, and Thomas Ewing, who was of the opposing counsel, paid him the highest compliments for this his first case in a United States court.

In 1848 Mr. Hayes was compelled, on account of weakness of the lungs, to seek a warmer climate, and this was done so promptly that the cure was radical. Outdoor prairie life in Texas gave him new experiences and renewed vigor.

In 1850 he removed to Cincinnati, and opened an office with John W. Herron, and while waiting for business began a systematic course of study. He joined the Sons of Temperance and the Odd Fellows, and his addresses, delivered at their meetings, soon attracted attention. There was a remarkable coterie of men who formed at that time a literary club in Cincinnati. Among them were Salmon P. Chase, Thomas Corwin, Thomas Ewing (senior and junior), John Pope, Edward F. Noyes, Stanley Mathews, Moncure D. Conway, and Manning F. Force. Mr. Hayes was for eleven years a member of this organization, and in its debates he acquired much of his power of logical presentment of a subject.

In January, 1852, Judge Warden, of the criminal court, heard a little speech by Mr. Hayes, and gave to him the conduct of a famous criminal case, the defense of Nancy Farrer, a woman who was accused of poisoning all the members of two families. The whole community was in a state of indignation against her. Mr. Hayes became convinced that his client was insane and irresponsible, but the trouble was to prove it to the satisfaction of the jury. The plea attracted wide attention and received unstinted praise, but the verdict was murder in the first degree. Hayes immediately obtained a writ of error, and argued the case before the Supreme Court with such effect that Nancy Farrer was sent to a lunatic asylum.

By this time the young lawyer was so far settled in life as to be able to offer a home to the

woman to whom his heart had been given. In December, 1852, he married Miss Lucy W. Webb, daughter of Dr. James Webb, who had been a physician in successful practice at Chillicothe, Ohio, until 1833, when he went to Lexington, Ky., to complete arrangements for sending to Liberia slaves freed by him and his father. Here he contracted cholera and died.

In January, 1854, Mr. Hayes formed a partnership with R. M. Corwine and W. K. Rogers. In 1859 he was chosen by the city council to fill out a vacant term as city solicitor. The choice was made possible by the casting vote of a political opponent, and journals and men of both parties received the appointment with satisfaction. When the unfinished term had expired he was elected to it by a majority of 2,536 votes. In 1861, just before the arrival of the news of the fall of Fort Sumter, he suffered defeat for re-election in common with his party, but ran ahead of the other candidates, although he had been known for his antislavery convictions, and was an ardent supporter of Lincoln's candidacy for the presidency.

At the mass meeting held upon the arrival of the news from Charleston, Mr. Hayes was made chairman of the Committee on Resolutions. From that moment his voice was never silent, and his speeches were received with the greater enthusiasm when it became known that he was one of the earliest to enlist.

Gov. Dennison appointed William S. Rosecrans colonel, Stanley Mathews lieutenant-colonel, and Rutherford B. Hayes major of the Twenty-third Ohio Infantry, June 7, 1861. The literary club to which Mr. Hayes belonged had at the outset formed itself into a military company, of which he was captain; and from that company were more than 40 officers furnished to the National army, of whom several became generals. In September, 1861, Gen. Rosecrans appointed Major Hayes judge advocate of the Department of Ohio, which place he filled for two months. In October he was promoted to the rank of lieutenant-colonel. In the battle of South Mountain, Sept. 14, 1862, he distinguished himself by gallant conduct in leading a charge, and in holding his position at the head of his men after being severely wounded, until he was carried from the field. In October, 1862, he was promoted to colonel of the regiment, but he was given leave of absence until the wound was healed. On returning to the field, he was given a command in southwestern Virginia, and in the summer of 1863 he went with 2 regiments and a section of artillery to Ohio to arrest the raids of Gen. John Morgan, and aided in bringing about his surrender. In 1864 he commanded a brigade in Gen. Crook's expedition to cut the communications between Richmond and the Southwest, and here also he showed notable gallantry in leading his men in storming a fortification on Cloyd mountain. In July, 1864, while still commanding a brigade of Crook's division, he was ordered to charge what was found to be a greatly superior force, and Col. Mulligan, who was associated with him in the action, fell, when Hayes led a masterly retreat, and by his skill and daring prevented pursuit until the men reached a better position. At Berryville he showed high courage, and at Winchester, in September, 1864,

he led an assault upon a battery placed on an eminence. Between his forces and the height there was a morass over 50 yards in width. Leading his brigade, he plunged in first, became mired, dismounted, and waded across alone under the fire of the enemy. Once on firm ground, he waved his cap in signal that his men should join him, and when 40 had done so he made an assault and captured the battery after a hand-to-hand fight with the gunners. The place had been deemed so impregnable that the battery had no infantry supports. At Fisher's Hill, while pursuing Gen. Early, in September, 1864, he commanded a division, and executed a flank movement of great brilliancy over mountains and through woods, where, in spite of peculiar difficulties, he routed the enemy, capturing many pieces of artillery. In the following month, at the battle of Cedar Creek, so great was his display of courage and judgment, that Gen. Crook, taking him by the hand, said, "From this day you will be a brigadier-general." The commission came in a few days, and in March, 1865, he was brevetted major-general. In his memoirs, Gen. Grant speaks of his military career in terms of the highest praise.

In 1864, while he was in the field, his friends at home nominated him for Congress. When it was proposed that he get leave of absence to conduct his political campaign he said: "Your suggestion to take the stump, was certainly made without reflection. An officer fit for duty, who at this crisis would abandon his post to electioneer for Congress ought to be scalped." He was elected by 2,400 majority, and the Ohio soldiers in the field nominated him for Governor of the State.

He took his seat in Congress, in December, 1865. On questions of reconstruction he went with his party, and also on those that ended in the impeachment of President Johnson. He was the only new man, save one, to be given the chairmanship of a committee—that on the library. While he was at the head of this committee the library space was increased threefold by the addition of wings, and the "Force Historical Library" was added, mainly through his efforts. He procured the passage of a bill to transfer the Smithsonian Library to the Library of Congress, introduced a joint resolution to extend the privileges of the library to a larger class of public officials, and recommended the passage of a copyright bill for securing to the library copies of all books, pamphlets, maps, etc., published in the United States. One of his first votes was in favor of the resolution:

That the public debt created during the late rebellion was contracted upon the faith and honor of the nation; that it is sacred and inviolate, and must and ought to be paid, principal and interest; and that any attempt to repudiate or in any manner impair or scale the said debt should be universally discountenanced by the people, and promptly rejected by Congress if proposed.

He voted to lay on the table the resolution to bring in a bill to increase the pay of congressmen.

In 1865, Gen. Hayes submitted to the Republicans in Congress, and subsequently to the Republican caucus, these resolutions, which became the basis of the action of the party:



*Resolved*, That it is the sense of the caucus that the best if not the only mode of obtaining from the States lately in rebellion guarantees which will be irreversible is by amendments of the national Constitution.

*Resolved*, That such amendments to the national Constitution as may be deemed necessary ought to be submitted to the House for its action at as early a day as possible, in order to propose them to the several States during the present sessions of their legislatures.

*Resolved*, That an amendment, basing representation on voters instead of population, ought to be promptly acted upon, and the judiciary committee is requested to prepare resolutions for that purpose, and submit them to the house as soon as practicable.

In August, 1866, he was renominated by acclamation, and he returned to take part in the Fortieth Congress. While he was there the soldiers in his old division found in him a most sympathizing friend, and much of his time was taken up with gratuitous work in behalf of them and their families.

In 1867 Gen. Hayes was nominated for Governor of Ohio, his opponent, on the Democratic ticket, being Allen G. Thurman. In the course of a speech delivered during his campaign, Gen. Hayes said:

Our Government has been called the white man's Government. Not so. It is not the Government of any class, or sect, or nationality, or race. It is a government founded on the consent of the governed, and Mr. Broomall, of Pennsylvania, therefore properly calls it "the government of the governed." It is not the government of the native born or of the foreign born, of the rich man or of the poor man, of the white man or of the colored man; it is the Government of the freeman. And when colored men were made citizens, soldiers, and freemen, by our consent and votes, we were stopped from denying to them the right of suffrage. . . . We want in the reconstructed Union that there shall be the same freedom of the press and freedom of speech in the States of the South that there always has been in the States of the North. Again, we want the reconstructed Union upon such principles that the men of the South, who during the war were loyal and true to the Government, shall be protected in life, liberty, and property, and in the exercise of their political rights.

Gen. Hayes was elected Governor: but a proposed negro suffrage amendment to the State Constitution was defeated, and the Democrats obtained a majority in the Legislature, which elected Judge Thurman to the United States Senate.

In 1869 Gov. Hayes was renominated and re-elected, his opponent on the Democratic ticket being George H. Pendleton. The discussions of the campaign were principally on the subject of the currency and the national bonds. The notable events of his governorship have been thus summarized:

He recommended and had completed a comprehensive geological survey of Ohio.

He secured the establishment of a soldiers' orphans' home.

He had the powers of the Board of State Charities restored and enlarged.

He had provision made for the care by the State of the chronic insane.

Under his direction the graded system was adopted in the State Prison, and prison reforms were introduced.

Minority representation on election boards was secured.

The Agricultural and Mechanical College was founded and organized.

The suffrage amendment to the Constitution of the State was adopted.

The fifteenth amendment to the Constitution of the United States was ratified.

The right of soldiers in the National Asylum to vote was restored.

The students' privilege of voting while attending college was given back.

The "visible admixture" law was repealed.

The St. Clair papers were purchased, and letters and manuscripts relating to pioneer history collected.

A reform school for girls was established.

The State debt was reduced, and all increase of debt opposed.

In 1872, as candidate for Congress in the Cincinnati district, he was defeated. In 1873 he removed his residence to Fremont, intending



HOME OF EX-PRESIDENT HAYES, FREMONT, OHIO.

to retire permanently from public life; but in 1875 he reluctantly accepted a third nomination for the governorship, and was elected, his opponent on the Democratic ticket being Gov. William Allen, who had been elected in 1873. The currency question was the main issue; but there was also much discussion of a proposition to divide the school money between Catholics and Protestants. In one of his speeches in this canvass Gov. Hayes said:

If it shall turn out that the party in power are opposed to a sound, safe, stable currency, I have no doubt that in October the people will make a change. If it shall turn out that the party in power were guilty of gross corruption in the legislative department, and that when that corruption was exposed the majority shielded those who were implicated, I have no doubt the people will make a change. If it shall turn out that the party in power yielded to the dictation of an ecclesiastical sect, and through fear of a threatened loss of votes and power has suffered itself to be domineered over in its exercise of the law-making power, there ought to be, as I doubt not there will be, a great change. If it shall turn out that the party in power is dangerously allied to any body of men who are opposed to our free schools, and have proclaimed undying hostility to our educational system, then I doubt not the people will make a change in the Administration.

In the Republican National Convention of 1876, which was held in Cincinnati, the contest was prominently between Blaine, Morton, Bristow, and Conkling. Through the first four ballots these leaders ran quite evenly, Blaine leading; but the vote for Hayes had been steadily gaining, until on the fifth he took the third place. On the sixth he had passed to the second, the vote standing—Blaine, 308; Hayes, 113. On the seventh, enough States changed their votes to reverse the order, and the decisive

ballot was—Hayes, 384; Blaine, 351. William A. Wheeler, of New York, was nominated for Vice-President.

In his letter of acceptance Mr. Hayes reiterated, in regard to civil service, the sentiments that he had expressed several years before, not only favoring the reform in general, but making specific charges against the system that then hindered its working. He also declared in favor of a single term, although there was nothing in the platform to call for such expression, for sound money, and for such measures in the South as should tend to bring political peace and a commercial revival. The Democratic candidate was Samuel J. Tilden. Disaffection on the part of many Republicans made the vote close, and both parties claimed the election. The decision turned upon the action of the States of Louisiana, South Carolina, and Florida. The Republicans claimed that fraud throughout the South, where colored men and white Republicans were not allowed to vote, prevented them from having a majority of about forty electoral votes, instead of the exceedingly small one which they actually claimed. The Democrats contended that in the three States mentioned the actual vote was in their favor, and that Republican returning boards had counted otherwise. Both parties had sent watchers to those districts when the returns were being made, but no final decision could be reached. The Senate had a Republican and the House of Representatives a Democratic majority, so that it was impracticable to leave the decision to them. It was finally agreed, and an act was passed, to leave the matter to a commission composed of 5 Senators, 5 Representatives, and 5 members of the Supreme Court, the decision to be final unless set aside by a concurrent vote of both houses of Congress. While the matter was in dispute Mr. Hayes wrote a letter to John Sherman, then at New Orleans, which was afterward made public. He said:

I am greatly obliged for your letter of the 23d. You feel, I am sure, as I do about this whole business. A fair election would have given us about 40 electoral votes at the South—at least that many. But we are not to allow our friends to defeat one outrage and fraud by another. There must be nothing crooked on our part. Let Mr. Tilden have the place by violence, intimidation, and fraud rather than undertake to prevent it by means that will not bear the severest scrutiny.

The electoral commission, by a strict party vote of 8 to 7, decided that the vote must be received as reported by the returning boards, and this gave the presidency to Mr. Hayes by a majority of 1 vote in the electoral college. The 4th of March, 1877, being Sunday, he was inaugurated on Monday, the 5th. In his inaugural address he reiterated the principles and views set forth in his letter of acceptance, adding that, while the President owes his election to a party, he should be always mindful that "he serves his party best who serves his country best," and declaring that the general acceptance of the settlement by the two great parties of a dispute, "in regard to which good men differ as to the facts and the law, no less than as to the proper course to be pursued in solving the question in controversy," was an "occasion for general rejoicing."

His Cabinet consisted of William M. Evarts, Secretary of State; John Sherman, Secretary of the Treasury; George W. McCrary, Secretary of War; Richard W. Thompson, Secretary of the Navy; David M. Key, Postmaster-General; Charles Devens, Attorney-General; and Carl Schurz, Secretary of the Interior. Business was depressed at the North, and in the South there were violent dissensions. In South Carolina and Louisiana there were two sets of men claiming the right to the State offices. Mr. Hayes invited the heads of the contending factions in South Carolina to come to Washington for conference, and sent to Louisiana a commission composed of eminent men of both parties. In this body were Gen. Joseph R. Hawley, of Connecticut; John M. Harlan, of Kentucky; Charles B. Lawrence, of Illinois; Ex-Gov. John C. Brown, of Tennessee; and Wayne McVeagh, of Pennsylvania. The result was that the Legislatures of the State united to form one body, and in both States the Democratic governors were established and the United States troops withdrawn. The justice of the decision was a mooted point, although the difficulty of the situation was conceded. The Republicans who objected to it did so on the ground that the question was essentially involved in that of the presidential election. If President Hayes was the legal occupant of the presidency, then the Republican candidates were the legal occupants of the gubernatorial chairs. On the whole, his somewhat arbitrary decision was upheld, and it was accompanied by pledges from Southern leaders in Congress that they would exert their influence to maintain peace.

In the hands of the new President civil-service reform received a great impulse. The claim of Senators and Representatives to "patronage" was not recognized. To the Secretary of the Treasury he expressed a wish that "the collection of the revenues should be free from partisan control and organized on a strictly business basis, with the same guarantees for efficiency and fidelity in the selection of the chief and subordinate offices that would be required of a prudent merchant."

On June 22, 1877, he issued an order that "no officer should be required or permitted to take part in the management of political organizations, caucuses, conventions, or election campaigns. Their right to vote or to express their views on public questions, either orally or through the press, is not denied, provided it does not interfere with the discharge of their official duties. No assessment for political purposes on officers or subordinates should be allowed. This rule is applicable to every department of the civil service. It should be understood by every officer of the General Government that he is expected to conform his conduct to its requirements."

On May 5, 1877, the President issued a call for an extra session of Congress on Oct. 15, to provide for the pay of the army, for which nothing had been done previous to its adjournment. Meantime there were serious railroad and other strikes, and the army was called upon for trying service in maintaining order. In his first annual message he said, in reference to his course in the South: "No unprejudiced mind will deny that the terrible and often fatal collisions which for several years have been of frequent occurrence



and have agitated and alarmed the public mind have almost entirely ceased, and that a spirit of mutual forbearance and hearty national interest has succeeded." He recommended resumption of specie payments in these terms: "I must adhere to my most earnest conviction that any wavering in purpose or unsteadiness in methods, so far from avoiding the inconvenience inseparable from the transition from an irredeemable to a redeemable paper currency, would only tend to increase and prolong disturbance in values, and, unless retrieved, must end in serious disorder, dishonor, and disaster in the financial affairs of the Government and of the people." He also insisted strongly that "all the bonds issued since Feb. 12, 1873, when gold became the only unlimited legal-tender metallic currency of the country, are justly payable in gold coin, or in coin of equal value," and that "the bonds issued prior to 1873 were issued at a time when the gold dollar was the only coin in circulation, or contemplated by either the Government or the holders of the bonds as the coin in which they were to be paid. . . . It is far better to pay these bonds in that coin than to seem to take advantage of an unforeseen fall in silver bullion to pay in a new issue of silver coin thus made so much less valuable. The power of the United States to coin money and to regulate the value thereof ought never to be exercised for the purpose of enabling the Government to pay its obligations in a coin of less value than that contemplated by the parties when the bonds were issued." He also urged again his civil-service recommendations; but Congress did not respond. No appropriation was made for the civil-service commission, and acts contrary to its decision were upheld. The efforts to save the timber lands of the country were denominated outlandish, the specie-payment act, instead of being upheld, was voted down, and the payment of the national debt in silver was favored. The Democrats set on foot an investigation in Louisiana and Florida. If the object was, as charged by the other party, to oust the President, it failed, after the famous "eipher dispatches" had been divulged. In January, 1879, the resumption act (passed in 1875) went into operation with the smoothness which he had predicted. He suspended from office in the New York Customhouse Chester A. Arthur and Alonzo B. Cornell, two of the most prominent men in the party, his reason being that they did not conform to his order forbidding political activity. He said: "Their offices have been conducted as part of the political machinery under their control." For a like reason he suspended a prominent Western postmaster. The Democrats in the Senate gave help enough to have the new appointees confirmed, and when they entered upon office Mr. Hayes said: "Neither my recommendation nor that of the Secretary of the Treasury, nor the recommendation of any member of Congress or other influential person, should be regarded. Let appointments and removals be made on business principles and on fixed rules."

On Feb. 12, 1880, President Hayes issued a second proclamation against lawless attempts to settle the Indian Territory. In March of the same year, in submitting to Congress the correspondence in regard to an interoceanic canal

across the Isthmus of Panama, he said: "The policy of this country is a canal under American control."

The first bill vetoed by him (Feb. 28, 1878) was the measure entitled "An Act to authorize the coinage of the standard silver dollar, and to restore its legal-tender character," commonly known as the "Daddy-Dollar" bill. It was passed over the veto and became a law. The second veto (March 6, 1878) was on a bill providing for holding a special term of the United States District Court in Mississippi for the trial of persons charged with depredating upon public timber lands. The veto was sustained. The third (March 1, 1879) was the "Act to restrict the immigration of Chinese to the United States." The veto was sustained. The fourth (April 29, 1879) was on the Army Appropriation bill, because of the sixth section of that measure, which prohibited the use of United States troops at the polls. This veto was sustained, and Congress passed the army bill without the objectionable feature. The fifth (May 12, 1879) was on the so-called Military Interference bill, which a Democratic caucus had framed for the express purpose of meeting the objections of the President to the sixth section of the vetoed army bill. This veto, also, was sustained. The sixth (June 23, 1879) was on the Judicial Expenses bill, because of the restrictions imposed by that measure upon the appointment and payment of deputy and special marshals at the elections. This veto was sustained. The seventh (June 30, 1879) was on the Special Marshals Appropriation bill, which covered the same grounds that had caused the veto of the Judicial Expenses bill one week previous. This veto was also sustained. The eighth (May 4, 1880) was on the Special Deficiency Appropriation bill, because of a "rider" providing that the special deputy marshals for service at the polls should belong to opposite political parties, and that they should be appointed by the Circuit Court of the United States for the district in which such marshals were to perform their duties; but should there be no session of the circuit court, then the district judges were authorized to convene their courts for that purpose. The President waived the merits of the "rider," and vetoed the bill simply on the objection to placing "riders" on appropriation bills. No attempt was made to pass the bill over the veto. The ninth (June 15, 1880) was on a bill regulating the appointment of special deputy marshals at elections. This veto was sent to the Senate, and when Congress adjourned *sine die*, on June 16, it had not been read, but remained on the table, thereby defeating the bill. The tenth (March 3, 1881) was on a bill "to facilitate the refunding of the national debt." The next day he was succeeded in the presidency by James A. Garfield.

Among other recommendations made by President Hayes was one for a new Indian policy; education; allotment of land in severalty, inalienable for a certain period; fair payment for other Indian lands; and investment of Indians with the rights and privileges of citizenship as fast as such policy should render it safe.

After his retirement from the presidency he devoted his time in a quiet way to various public matters. Temperance found in him a warm and

ready advocate, and he was for several years President of the National Indian Association, which has done so much to bring about the reforms suggested in his last message.

He died suddenly, of neuralgia of the heart. In the proclamation announcing the event, President Harrison paid this tribute to his memory:

His public service extended over many years and over a wide range of official duty. He was a patriotic citizen, a lover of the flag and of our free institutions, an industrious and conscientious civil officer, a soldier of dauntless courage, a loyal comrade and friend, a sympathetic and helpful neighbor, and the honored head of a happy Christian home. He has steadily grown in the public esteem, and the impartial historian will not fail to recognize the conscientiousness, the manliness, and the courage that so strongly characterized his whole public career.

Biographies of Rutherford B. Hayes have been written by James Q. Howard, Russell H. Conwell, and William D. Howells. For a portrait on steel, see the "Annual Cyclopædia" for 1876.

**HAYTI**, a republic occupying the greater part of the island of Hayti, in the West Indies. The legislative powers are vested in a National Assembly, consisting of a Senate and a House of Deputies. Under the Constitution of Oct. 9, 1889, there are 50 Deputies, elected for three years by the direct vote of all Haytians twenty-one years of age, and 30 Senators, in part elected for six years by the Chamber and in part nominated by the President. The President is elected for seven years by the whole National Assembly sitting together. Gen. L. M. F. Hippolyte is President for the term ending May 15, 1897.

**Finances.**—The revenue is derived entirely from customs. The receipts for 1890-'91 were \$7,322,076, of which \$4,219,620 were collected on imports and \$3,102,456 on exports. The budget for 1891-'92 makes the total receipts \$8,166,000 in Haytian currency, and the expenditures \$7,958,314, of which \$1,147,242 are for war, \$1,954,317 for the public debt, \$1,171,185 for the interior and police, \$981,816 for public instruction, \$694,551 for finance and commerce, \$574,125 for public works, \$486,818 for justice, \$361,574 for agriculture, \$187,148 for marine, \$135,530 for foreign relations, \$174,850 for the National Bank, and \$89,158 for public worship. The debt on Jan. 1, 1892, amounted to \$15,757,011, made up of a foreign loan of \$4,536,506 raised in 1875, an internal debt of \$4,390,547, short interest-bearing loans amounting to \$1,663,894, a floating debt of \$1,125,559, and paper money amounting to \$4,040,505.

**Commerce and Production.**—The imports for 1891 amounted to \$10,060,979, of which \$6,454,601 were imports from the United States, \$1,930,713 from Germany, \$917,994 from France, \$662,191 from Great Britain, and \$95,480 from other countries. The total value of the exports was \$14,165,779, of which \$8,437,500 were exports to France, \$2,809,292 to the United States, and \$3,518,987 to other countries. The export of coffee in 1891 was 78,000,000 pounds; of logwood, 160,000,000 pounds; of cacao, 3,000,000 pounds; of mahogany, 35,000 feet. The mineral wealth of the country is not developed, although rich deposits of iron, copper, and salt are known to exist. There were entered during 1891 at the chief ports of Hayti 620 vessels, of 705,262 tons.

**Army and Navy.**—The army is recruited partly by conscription for seven years and partly by voluntary enlistment for four years. The law of 1878 fixed its strength at 6,828 officers and men. The fleet consisted in 1891 of 4 gunboats carrying 27 cannon and 1 steel gunboat, built in 1886, armed with 34-inch guns and 2 of smaller caliber. In 1892 several new gunboats were added to the navy. One of these, the "Admiral Pétion," built in Havre, an armored vessel carrying 15 guns, mysteriously foundered on Sept. 6, 1893, and 92 persons were drowned.

**Political Situation.**—Before the opening of the year 1893 insurrectionary disturbances had broken out in the north and on the southern coast, but they were easily quelled by detachments of Government troops. President Hippolyte maintained a despotic military *régime* for the purpose of guarding against revolutionary plots, and in watching against secret communications with exiles and the landing of arms or forces his officers hampered foreign commerce. The people of the country, with the exception of disappointed candidates for office, were not generally discontented. There was no popular leader in the country who could organize a formidable uprising or obtain the money and arms for a campaign against the Government. Nor were the exiles in Jamaica united. Neither ex-President Légitime, Gen. Manigat, nor Gen. Prophète was willing to give up his chances for the presidency or assist in overthrowing Hippolyte for the sake of elevating another to power. The new gunboats enabled the President to guard the coast more thoroughly and prevent the landing of filibustering expeditions. In August, 1892, Gen. Momplaisir and Gen. Arneaux, Haytian exiles in Jamaica, chartered the schooner "Willie Irving," and attempted to smuggle in a cargo of rifles and cartridges in order to raise an insurrection on the south coast. They were unable to land, and, returning to Kingston harbor, they threw the arms overboard, but were detected, and in May, 1893, were tried by the British court for violating the foreign enlistment act, and fined \$1,000 each, while Miller, master of the vessel, was fined \$500. Hippolyte sent an army of 2,500 men to the border, and President Heuraux, of Santo Domingo, suspecting Hippolyte of a design to aid the revolutionists of his country in an attempt to upset his Government, dispatched an equal force to the frontier district. The result of an exchange of views was that each ruler expelled from his dominions the exiled citizens of the neighboring republic, and each reaffirmed his adhesion to the agreement that no foreign power should be allowed to obtain territorial rights on the island.

**HOLLAND.** See NETHERLANDS.

**HONDURAS**, a republic in Central America. The Congress consists of a single Chamber, the members of which are elected in the proportion of 1 to 10,000 inhabitants, for four years, one half retiring every two years. The President serves also four years. Gen. Ponciano Leiva was elected President on Nov. 10, 1891.

**Finances.**—The revenue is derived from customs and Government monopolies. The receipts in 1889 were \$2,094,660, and the expenditures \$2,077,552. The internal debt amounted to \$2,031,379. The foreign debt was contracted in



London and Paris for the purpose of building an interoceanic railroad, which has never been completed. The capital amounts to about \$27,000,000, and the arrears of interest to nearly \$40,000,000.

**Commerce and Production.**—The chief products are cattle, mahogany and other woods, India rubber, bananas, cocoanuts, indigo, sarsaparilla, gold, and silver. The exports in 1891 were valued at \$2,667,008. The exports of vegetable products were \$1,491,316; of minerals, \$593,087; of cattle, \$451,116; of manufactured products, \$41,489. The bulk of the exports goes to the United States. The principal imports are cotton and silk fabrics, and hardware. Gold and silver are mined in larger quantities than formerly, owing to the introduction of modern methods.

**Communications.**—The projected interoceanic railroad, starting at Puerto Cortez, was built as far as San Pedro Sula, 69 miles, but a part was afterward abandoned, when a bridge over the Chamelicon river was carried away, and at present only 37 miles are open to traffic. There are 1,717 miles of telegraph lines, over which 93,000 messages are sent annually on the average.

**Civil War.**—In the presidential election at the close of 1891, when Ponciano Leiva, the Minister of War and appointed successor of President Luis Bográn, was elected by an overwhelming majority over Policarpo Bonilla, the young leader of the Liberal party, official and military coercion was employed to bring about this result more flagrantly than usual because Liberals were more numerous than Conservatives, at any rate in the urban and progressive districts, and they had nerved themselves for a vigorous effort to overthrow Bográn's party, whose candidate was deemed to be only a figure-head and a stepping stone for Bográn's return to power. When the election was over Bonilla announced that he would wait till the next one to demonstrate the strength of his party, while Bográn said that he would keep aloof from politics, and Leiva's election was ratified by the votes of Liberal as well as Conservative members of Congress. As a pledge of peace and reconciliation, Gen. Domingo Vasquez, a Liberal leader, was called from exile and made Minister of War and commander of the army. Political prisoners were treated with leniency, and the Government even went so far as to prosecute a police official of Yusecaran for shooting and killing a voter who protested against the exclusion of Liberals from the polls. The wealthy and influential exiles in Nicaragua, however, were not appeased, and in the mountain district bordering on Salvador Gen. Terencio Sierra, an influential young revolutionary, still kept up the guerilla warfare that he had waged since Bográn decreed his exile and burned his *hacienda*. Bográn and Leiva, becoming frightened, changed all at once their policy of conciliation. When the Court of Appeals confirmed the sentence of eight years' imprisonment passed upon the official homicide of Yusecaran, a squad of soldiers marched into the court-room and liberated the prisoner, who was afterward promoted in rank by the President. While the Liberals were still angry over this act, and over the renewal of ar-

rests and of the flogging of political prisoners, a decree of banishment was issued against Policarpo Bonilla, who did not immediately join the exiles in Nicaragua, but went to Guatemala. A rising on the north coast, headed by his cousin, Manuel Bonilla, and one Nuilla, was easily put down by the Government troops, who shot Nuilla, but released Manuel Bonilla on parole. A more formidable movement in the south was checked by Gen. Vasquez, who recaptured the village of Danli after it was taken by exiles from Nicaragua, and the village of Corpus that had been seized by Sierra, and, driving the invaders back across the frontier, burned a village 12 miles beyond. Then Policarpo Bonilla went to Nicaragua, and, raising his standard, gathered before the end of 1892 a force of from 1,000 to 1,500 men, exiles and citizens who joined them from Honduras, armed nearly all with Remington army rifles and the rest with shotguns and *machetes*. When Bonilla proclaimed himself Provisional President, the valetudinarian Leiva resigned the presidency into the hands of Rosinda Aguerra, who, in behalf of the frightened Conservatives, offered to make peace with Bonilla and take him into his Cabinet. But Bonilla marched to the mining town of Tatumbla, 24 miles from Tegucigalpa, and fortified the place. While waiting there for the Government forces to attack, he was joined before the end of January, 1893, by Manuel Bonilla with 200 insurgents from Olancho, who had surprised the garrison at Juticalpa and armed themselves in the arsenal there. Gen. Vasquez marched out with a force not much superior to Bonilla's, composed mainly of Indians, who never fight in close order, and were not to be depended upon to carry the works by storm. Vasquez sat down before the rebel camp, and, while a little band of foreign mercenaries, nearly all Americans, who were able to hit at 1,000 or 1,500 yards, annoyed the enemy by picking off the officers and men who showed themselves, and occasional shots from two Krupp howitzers spread alarm among the Indians who had joined Bonilla's army, a large detachment stole around to the rear of the position and cut off Bonilla's communications with his base of supplies in Nicaragua. Vasquez led the attack on the rear of the rebels, and carried one after another the three lines of stone ramparts that they had erected on the mountain tops. The operations lasted from Feb. 2 till March 27. Vasquez planned to attack the enemy, whom he had so successfully hemmed in on both sides, but when morning came he found the camp deserted. Sending the main body of the army toward Nicaragua, to which he supposed the rebels had fled, he destroyed the town of Tatumbla, and set out on a leisurely march to the capital. Sierra, commander of Bonilla's troops, by a brilliant march over the mountain trails had reached Tegucigalpa, and on March 29, he sent 200 of his bravest troops to attack the town. The 400 Government troops fled before them, but rallied and checked them in the principal plaza. Sierra's men, fearing that they would be surrounded, withdrew to a bench on the mountain side, and when attacked there were recalled by Sierra, who saw the army of Vasquez approaching in the distance. Vasquez, when he arrived, sent troops around to attack the rebels in the

rear, and on April 2 they fled; and when he came up to them and repeated the manœuvre they evaded him again. The Government troops, according to the usual custom, massacred all the wounded and prisoners. Bonilla's forces were not well enough supplied with ammunition to continue the war long. On the news of his first successes, and the report that he was in possession of the seat of Government, the Liberals of the ports of Truxillo and Ceiba took possession of those places, and in various towns of the interior they fought the officials and the Government faction, and were successful. When Bonilla and Sierra were known to be in retreat, the supporters of Vasquez regained control, except in the southern country still occupied by the revolutionary troops, and the eastern provinces, where the Liberals long held out. Manuel Bonilla's force was defeated with heavy losses, and he was wounded. Ponciano Leiva resumed the presidency for the purpose of abdicating in favor of the victorious Vasquez, who was pro-

claimed Provisional President, with the powers of a dictator. Before June all the towns and departments were in the hands of the new Government. The revolutionary army had disbanded, and the leaders were fugitives.

In the beginning of November the American steamship "Costa Rica" put in at the Honduranian port of Amapala. Bonilla was a passenger, having embarked at a Nicaraguan port for Guatemala. Vallila, commander of the port of Amapala, demanded that he be surrendered to stand trial on criminal charges. The captain refused, and, getting up steam, stood out to sea. Before she got out of cannon range a dozen shells were fired at the vessel and burst near her. United States Minister Young telegraphed on Nov. 10 to the Minister of Foreign Affairs at Tegucigalpa to inquire if the Government of Honduras accepted the responsibility for the act. Lopez, the Honduranian minister, replied, disavowing the conduct of the officers, and offering an apology, which was accepted.

## I

**IDAHO**, a Northwestern State, admitted to the Union July 3, 1890; area, 84,800 square miles; population, according to the census of 1890, 84,385. Capital, Boise City.

**Government.**—The following were the State officers during the year: Governor, William J. McConnell, Republican; Lieutenant-Governor, Frank B. Willis; Secretary of State, James F. Curtis; Treasurer, William C. Hill; Auditor, Frank C. Ramsey; Attorney-General, G. M. Parsons; Superintendent of Public Instruction, B. B. Lower; Chief Justice of the Supreme Court, Isaac N. Sullivan; Associate Justices, Francis E. English, Thomas M. Stewart.

**Legislative Session.**—The second session of the Legislature, which meets every other year, began Jan. 2, and continued until the evening of March 6. The delays brought about by the Democrats and Populists in the Senate defeated many important measures. By them a rule of obstruction was inaugurated, and bills were held back until the last days of the session, when it had become too late to consider them in the House.

Among the bills held back was one reducing the State tax levy from 85 cents to 65 cents on the \$100. The levy of 85 cents has already produced a surplus, and its continuance, with the increasing assessment of the State, must necessarily produce a surplus in the treasury which will reach 25 per cent. of the total collection of taxes; but by reason of the failure to pass a law providing for the loaning of such funds, the public will derive no benefit from the accumulation.

Another bill that did not pass was one providing for a reapportionment of the representation of the State.

Much time was spent in the effort to pass a general law providing for the division of counties and the removal of county seats.

The Governor withheld his signature from a bill that reduced the liquor license from \$500 a year in the larger towns to \$300, making the cost of license uniform in large and small towns.

This bill was passed over the Governor's veto in the Senate, but the House refused to act with it. The Cœur d'Alène City School of Mines bill—an act providing for the establishment, location, maintenance, and support of a scientific school for the State of Idaho—was not approved because several of its provisions conflicted with the State Constitution, and others were of doubtful meaning. The act authorizing county commissioners to issue bonds for the purpose of refunding the indebtedness of their county was held to give too much latitude to the commissioners, and it therefore was not signed, nor was the bill defining the property relations of husband and wife.

Just before the close of the session an appropriation bill to cover the State expenses for the years 1893 and 1894 was rushed through the Senate, and the House was forced to concur and pass it without amendment. The law providing for the organization, government, and powers of cities and villages was the subject of prolonged debate before its passage. The act was intended to apply to Boise City as well as all other cities; but it is by some asserted that Boise City has a special charter which the repealing clause can not affect. The age of consent was fixed at fourteen years. Until this year Mormons in Idaho have been deprived of the right to vote. Much litigation and much legislation has arisen from this condition of things, but during this session a bill was passed enfranchising them without conditions.

Among other bills passed are these:

Providing for internal improvement of the State by the construction of a system of wagon roads in the counties of Boise, Custer, Lemhi, Idaho, Shoshone, Kootenai, Latah, and Nez Percés, and providing funds for the construction of this system of roads by the issuance of a series of bonds to the amount of \$135,000.

Appropriating \$30,000 for the Idaho exhibit at the World's Fair.

Organizing Lewiston State Normal College.

Requiring the sheriff to select only *bona fide* citizens, residents of his county, to serve as a *posse* in



the service of process when resistance is offered or anticipated.

Providing for the establishment of a soldiers' home.

A bill for the protection of game and fish.

A bill to protect telegraph and telephone companies and secure secrecy of dispatches.

Providing for contracting the labor of convicts in the Penitentiary, the labor to be performed within the grounds of the Penitentiary.

Authorizing the commissioners, upon petition of one fourth of the qualified electors of the county, to fix the bounty for the destruction of the coyote, wild cat, fox, lynx, bear, squirrel, rabbit, gopher, muskrat, panther, cougar, with a provision that the bounty for rabbits, gophers, and squirrels shall not exceed 5 cents each.

Providing a penalty for persons convicted of making, selling, or disposing of any key used to open any switch lock, car lock, etc., without consent of the company owning the same.

Making it a felony for any one to obstruct a railroad track so as to endanger the lives of passengers.

For the improvement of the Capitol building.

Requiring persons owning mining claims to make affidavit that the required amount of yearly assessment work had been done.

Providing for imprisonment not to exceed six months or a fine of not more than \$300 or both for any person who deals, plays, or conducts "French monte," "E. O. or roulette," "the thimble game," or "percentage stud poker," "craps," "strap game," "thimblergame," "patent safe game," "black and red game," commonly known as "the ten-dice game," "two-card box at faro," or any other percentage game, and further that the lay-out by which the game is played shall be seized by the officer making the arrest and sold at auction for the benefit of the school fund. If it can not be sold, it shall be destroyed.

Providing for the incorporation of institutions of learning.

Making it unlawful for employers to enter into agreements with their employees or persons about to enter their employment not to become or continue as members of labor organizations.

Providing for the prevention of the spread of fruit-tree pests, and for their extirpation.

Joint memorials to Congress were introduced praying

That those who served for thirty days as volunteers in suppressing the Nez Percé war of 1877 each be permitted to make a homestead entry of 160 acres on the 500,000 acres of Nez Percé reservation land, soon to be thrown open to settlement, and to prove up on the same without showing proof of residence.

Asking for an appropriation of \$10,000 for the support of a State soldiers' home; asking Congress to appropriate a sum sufficient to make a survey and secure an estimate as to the cost of dredging Spokane river, an outlet of Cœur d'Alène lake, so as to lower the water in that lake about five feet, preventing its backing up the St. Marie's and Cœur d'Alène rivers, inlets of the lake, and submerging adjacent lands.

Asking Congress to pass a law providing for the free and unlimited coinage of silver as it existed prior to the demonetization act of 1873, and that the relative standard value thereof be fixed as nearly as possible on the basis of 412½ grains to the dollar.

**Education.**—The amount of the school fund subject to distribution for 1893 was \$40,000. The school population was 31,219, an increase of 5,478 during the past two years. The attitude of the Mormon population toward the system of popular education has undergone a marked change, and Mormon children are now attending the public schools.

The University of the State of Idaho was

opened in October, 1892; by January, 1893, 117 students had been enrolled. Only the west wing of the proposed university building has been erected, at an outlay of \$34,749. It is estimated that the cost of the additional building will be \$75,000. It is in the city of Moscow. Three agricultural experiment stations—1 at Nampa, 1 at Grangeville, and 1 at Idaho Falls—are under the general direction of the board of regents of the university, where also agriculture is taught.

**Finances.**—The Committee on State Affairs and Federal Relations submitted to the Legislature the following statement of the condition of the State's finances:

#### LIABILITIES.

Outstanding registered 10-per-cent. warrants, Jan. 1, 1893.....	\$187,225 04
Warrants drawn in January, 1893, and payable from the 1892 appropriation.....	20,000 00
Unexpected balance World's Fair appropriation.....	8,072 00
Possible outstanding unregistered warrants....	5,000 00
Expenses second session Legislature.....	39,000 00
Civil deficiency, 1891-'92.....	12,500 00
Militia deficiency, including expenses Cœur d'Alène trouble.....	24,000 00
<b>Total debt, exclusive of bonds, Jan. 15, 1893.</b>	<b>\$245,797 04</b>

#### ASSETS.

Due from eighteen counties for 1892 taxes.....	\$259,000 00
Probable poll taxes.....	12,000 00
<b>Total.....</b>	<b>\$271,000 00</b>
Deduct 8 per cent. estimated delinquent.....	20,720 00
<b>Balance.....</b>	<b>\$250,280 00</b>
<b>Total indebtedness.....</b>	<b>245,797 04</b>
<b>Surplus, 1892.....</b>	<b>\$4,482 96</b>

It also estimated the ordinary expenses for 1893 and 1894 at \$328,750, and advised that this amount be all required to be raised by direct taxation during these two years. An increase of 10 per cent. in the assessed valuation of the State was expected, making the valuation for 1893 \$34,276,000.

In his message to the Legislature the outgoing Governor stated the bonded indebtedness of the State on Jan. 1, 1893, to be as follows: "The bonded indebtedness of the State actually outstanding on Nov. 15, 1890, was as follows: old bonds, act of 1877, \$46,715.06; Capitol-building bonds, act of 1885, \$80,000; insane-asylum bonds, act of 1885, \$20,000; wagon-road bonds, act of 1889, \$11,000; total, \$157,715.06. All these bonds draw interest at the rate of 6 per cent. During the two years just past the old bonds of 1877 and the \$5,000 of the issue of insane-asylum bonds became due and payable, and have been refunded, together with accrued interest with bonds, also drawing interest at 6 per cent., due in 1901, and payable in 1911, in pursuance of an act of the Legislature approved March 14, 1891. The same act also authorized the issuance of \$78,000 in bonds for the redemption of outstanding warrants, but there being cash in the general fund applicable to this purpose, a portion of the warrants was paid and canceled. The total amount of new bonds issued for refunding the old bonds and warrants and interest was \$102,000. The insane-asylum bonds and interest were refunded by the issuance of \$6,000 new bonds. Of the wagon-road bonds authorized by the act of 1889, there has been a further issuance of \$37,000, and the entire bond-

ed indebtedness of the State at this date is \$251,000."

**Penitentiary.**—The Penitentiary is about 2 miles east of Boise City, on a tract of 160 acres reserved for that purpose. The cost of keeping each prisoner has been about 73 cents a day, as the only labor performed by prisoners was in caring for the reservation and making their own clothing. In future this charge will be much reduced, as the prison is now authorized to contract the labor of convicts if such contracting does not conflict with the interests of manufacturers in the State. Improvement in the sanitary condition of the prison is very necessary. Statistics show that nearly all the convicts came into this Penitentiary without a trade.

**Insane Asylum.**—The Idaho Insane Asylum is at Blackfoot, Bingham County. The grounds cover several hundred acres. At the beginning of the year the number of patients was 98. So far as possible, employment is provided for the insane. In addition to caring for the farm and the vegetable garden, the men are employed during summer at brick making, and during the winter at cutting cordwood. Brick for first-class fire-proof buildings can be provided chiefly by the labor of patients. The work of the woman inmates of the asylum has been in the kitchen, laundry, and sewing room. The dresses, coats, trousers, and underwear needed by the patients are made in the asylum. The medical superintendent calls attention to the low rate of insanity in this State, less than one half the average rate in other States of the Union.

**The Deaf, Dumb, and Blind.**—Under the provisions of an act approved March 14, 1891, the State Board of Education was authorized to contract with the authorities of charitable institutions of other States and Territories for the education of the deaf, dumb, and blind. A contract was made with the Colorado Springs Deaf, Dumb, and Blind Asylum for the care of these unfortunates at an annual charge of \$250 for each pupil. In 1891 4 pupils—3 blind and 1 deaf—were sent to Colorado Springs; in 1892 6—4 blind and 2 deaf—were sent. It is estimated that the State contains about 50 who are entitled to its care.

**Soldiers' Home.**—Provision was made by the Legislature for the establishment of a soldiers' home within the State for honorably discharged Union soldiers, sailors, and marines who served during the civil war, for members of the State National Guard disabled while on duty, and for veterans of the Mexican War, all of whom are to be *bona fide* citizens of the State. The control of the home is vested in 5 trustees, to consist of the Secretary of State, commander for Department of Idaho, Grand Army of the Republic, and 3 others, 2 of whom are to be members of the Grand Army of the Republic; all to be appointed by the Governor. An appropriation of \$25,000 was made, to be secured from the sale of public lands given to the State by the Government for charitable purposes, instead of being taken directly out of the general revenue fund, the amount appropriated to be loaned to the institution by the State, which takes a lien on the land in question to secure the amount advanced.

**Irrigation.**—In the message of the outgoing as well as of the incoming Governor, special at-

tention was called to the importance of the establishment of a system of irrigation under fixed laws and regulations, and the appointment of a commissioner of irrigation was strongly advocated. A decision of the Attorney-General, to the effect that it would be unconstitutional to pass a law exempting canal property from taxation, was called forth by a petition from several canal companies to the irrigation committee, asking for a law exempting irrigation ditches from taxation. The committee decided that it would be unconstitutional to comply, and their decision being referred to the Attorney-General, was confirmed by him.

The topographical division of the geological survey is engaged in work that will be of great benefit in establishing a system of irrigation. In the chief valleys of the southwestern portion of the State streams will be gauged for a considerable period. From the results can be learned how much water passed the gauging point any day in a year. Maps of the valleys will be made. From weather reports can be estimated the amount of rain and snow that fell. A record of every water right along the stream will be secured, and a description of every ditch, canal, reservoir, reservoir site, etc.

The amount of agricultural lands in Idaho is 16,000,000 acres, and of this area three fifths is arid.

**Wagon Roads.**—Much benefit will undoubtedly accrue to the State from the construction of the system of wagon roads authorized by the last Legislature. The main road will pass from Banner, Boise County, *via* Warrens, Idaho County, through Nez Percés and Latah Counties, to the mouth of St. Marie's river, Kootenai County, and thence to Wallace, Shoshone County. Branches will extend from Mount Idaho to Elk City, and from Bear valley, Idaho County, through Custer and Lemhi Counties, to the head of the north fork of Salmon river, near the Montana line. This means about 300 miles of road. Nearly all the valley and open lands of any value in the State have been already taken up under the various acts of Congress, and the lands that are chiefly valuable for their timber are in the interior and mountainous portions of the State. To pay for their construction the issuing of a series of State-road bonds, to the amount of \$135,000, was authorized, and the charge of the surveying and construction is confided to a commission to consist of one commissioner from each county through which the road will pass, or a person selected by each board.

**Game and Fish.**—The game law enacted this year provides that no moose, caribou, or elk shall be killed prior to Sept. 1, 1897, and after that only between Sept. 1 and Dec. 31. The season for deer, mountain sheep, antelope, and goats is from Sept. 1 to Jan. 1. None of these animals shall be killed for their hides, nor shall any one buy or sell such hides or transport the same. The animals shall not be hunted with dogs. The Mongolian pheasant can not be killed until Aug. 1, 1897. The season for killing pheasants, grouse, sage hens, and fool hens is from Aug. 1 to Jan. 1; for quail and prairie chickens, from Oct. 15 to Dec. 15; and for ducks, geese, and swans, from Aug. 15 to April 15. No fish, except salmon, salmon trout, and sturgeon, shall be taken except



by hook and line; and none of any kind shall be taken in any way, except for home consumption or brooding purposes, between Nov. 1 and April 1 of the succeeding year.

**Mormons.**—It is estimated that the Mormons of voting age number in Bingham County 3,000; Bear Lake, 700; Cassia, 350; Oncida, 850. To most of these the right of franchise has been extended this year.

Almost since the organization of the Territory the Mormon Church within its borders had advocated bigamy and polygamy. To put a period to the advancement of its doctrines, the Territorial Legislature passed the "test-oath act," which prescribed an oath to be taken by all persons as a condition precedent to registration and the exercise of the elective franchise. This act excluded all members of the Mormon Church from the elective franchise. Some of the members of that organization at once set about devising schemes by which the law might be evaded or set at naught. In October, 1888, just prior to the election, a large number of the members made a pretended withdrawal from the organization and thereafter registered as voters, taking the required oath. Several persons were indicted in a district court, and, a test case having been made, the question of the validity of the "test-oath law" was passed upon by the Supreme Court of the United States in the case of *Davis vs. Beson*, and the validity of the statute was affirmed by that tribunal.

When Idaho became a State the substance of the test-oath statute enacted by the Territorial Legislature was embodied in its Constitution. The first Legislature that convened under the State organization determined to prescribe additional limitations and conditions for the right of suffrage. Accordingly, on Feb. 25, 1891, it passed an election bill that provided, among other things, that the registrar before he registers any applicant must require him to swear that he has not since Jan. 1, 1888, belonged to an organization which has at any time taught the doctrine or encouraged the practice of polygamy. This law has remained in force until February of this year. In October, 1892, the Supreme Court of the State unanimously decided that the law was constitutional and must be upheld.

In October, 1890, a manifesto was issued by authority of the so-called Mormon Church, and afterward confirmed by church conference, in which it was declared to be the policy of the Church to abandon further practice of polygamous relations. Since that time it has been constantly claimed by members of this Church that the manifesto was issued in good faith, while those high in authority outside the Church have represented that the members and adherents of this Church have generally abstained from plural marriages and polygamous relations. In consideration of evidence placed before him to this effect, the President of the United States issued a proclamation granting full amnesty and pardon to all persons liable to the penalties of the act of Congress by reason of unlawful cohabitation under cover of polygamous or plural marriages who have abstained from such unlawful cohabitation since November, 1890.

The disabilities under which Morimons are made to suffer under the Constitution of the

State of Idaho are these: Bigamists and polygamists are not permitted to exercise the franchise, neither is any person who belongs to any church organization or incorporation that teaches bigamy and polygamy. Relying on the claims of members of the Mormon Church that it has absolutely abandoned both the practice and the teaching of polygamy and no longer permits what is known as plural, patriarchal, or celestial marriages, the Legislature meeting this year passed a new election law eliminating what have been called the retroactive features of the test oath and permitting any man to register and vote who does not *now* practice or teach polygamy or who belongs to a church that does not *now* practice or teach polygamy, or who is not a bigamist. The constitutional disabilities alone remain in force.

**Woman Suffrage.**—The chairman of the House Judiciary Committee propounded to the Attorney-General the following question:

Will it require an amendment to the Constitution to enable females to exercise the right of suffrage in this State at any and all elections, and hold office in the State, or will an act of the Legislature be sufficient to accomplish the purpose?

and it was answered in substance as follows: The State possesses the power to prescribe the qualifications of electors, and to designate the particular classes of persons who may vote, subject to the restrictions of the Federal Constitution. It is settled that a State may in its constitution restrict the right of suffrage to males. One of the express conditions of section 2 of Article VI of the State Constitution confines the right of suffrage to male citizens of the United States, except at school elections. It also states that the Legislature shall never annul any of the provisions in this article contained. Women have the right to vote at school elections if they have the qualifications of electors, but while the Legislature may prescribe additional qualifications, limitations, and conditions, it can not extend the right of suffrage to females. This would require an amendment to the Constitution. A joint resolution was offered to amend the Constitution by extending the right of suffrage to women, but it was killed on its third reading.

**World's Fair.**—The Legislature of 1891 voted \$20,000 for World's Fair purposes, and to this amount \$30,000 was added by the Legislature of 1893. The result of the expenditure of these amounts was a most satisfactory agricultural exhibit, comprising wheat, corn, oats, clover, flax, hemp, cotton, tobacco, figs, almonds, walnuts, apples, quinces, peaches, pears, plums, cherries, apricots, nectarines, prunes, berries, and grapes. The wonderful mineral exhibit was made in the Mining Building, in a white-and-gold pavilion, fashioned in the style of a classic temple.

**ILLINOIS**, a Western State, admitted to the Union Dec. 3, 1818; area, 56,650 square miles. The population, according to each decennial census, was 55,162 in 1820; 157,445 in 1830; 476,183 in 1840; 851,470 in 1850; 1,711,951 in 1860; 2,539,891 in 1870; 3,077,871 in 1880; and 3,826,351 in 1890. Capital, Springfield.

**Government.**—The following were the State officers during the year: Governor, John P. Altgeld, Democrat; Lieutenant-Governor, Joseph B. Gill; Secretary of State, William H. Hinrich-

sen; Auditor, David Gore; Treasurer, Rufus N. Ramsey; Attorney-General, Maurice T. Moloney; Superintendent of Public Instruction, Henry Raab; Railroad and Warehouse Commissioners, Isaac M. Philips, J. R. Wheeler, and Jonathan C. Willis; Superintendent of Insurance, Bradford K. Durfee, appointed in July; Chief Justice of the Supreme Court, Joseph M. Bailey; Associate Justices, John Scholfield, who died on Feb. 13, Simeon P. Shope, David J. Baker, Alfred M. Craig, Benjamin D. Magruder, and Jacob W. Wilkin.

**Finances.**—For the biennial period ending Oct. 1, 1892, the treasury statement is as follows: Balance in all funds, Oct. 1, 1890, \$4,445,467.99. Receipts for the two years ensuing—general revenue fund, \$5,854,269.26; State school fund, \$2,091,058.17; local bond fund, \$2,641,415.85; total, \$10,586,743.28. Disbursements—general revenue fund, \$5,856,678.82; State school fund, \$2,126,967.90; delinquent land tax fund, \$331.06; unknown and minor heirs fund, \$2,348.40; local bond fund, \$2,696,333.71; total, \$10,682,659.89. Balance on Oct. 1, 1892—general revenue fund, \$3,524,803.88; State school fund, \$278,346.49; unknown and minor heirs fund, \$12,407.38; local bond fund, \$533,993.63; total \$4,349,551.38. The bonded indebtedness outstanding remains at \$19,500. These bonds were long since called in and have ceased to draw interest, but have not been presented for payment and are probably lost.

**Legislative Session.**—The regular biennial session of the General Assembly began on Jan. 4, and adjourned on June 16. Comparatively few measures were enacted into law, notwithstanding the length of the session. The State was redistricted for members of Congress and for members of the State Senate. The compulsory education law of 1889, known as the Edwards law, against which so much clamor had been raised by the foreign-born element, was repealed and a new law was enacted requiring every person having control of any child between seven and fourteen years of age to cause such child to attend some public or private day school at least sixteen weeks annually, twelve of which shall be consecutive. This act does not apply to any case where the child has been or is being otherwise instructed for a like period of time in the elementary branches of education, or whose physical or mental condition renders attendance impracticable or inexpedient, or who is excused for sufficient reasons by any competent court of record. A very moderate penalty, not exceeding \$20, may be imposed on any person violating these simple requirements. The manufacture of clothing, purses, feathers, artificial flowers, and cigars was regulated by an act which also provides for the appointment of a State factory inspector and deputies. Children under fourteen years of age are forbidden to work in any manufacturing establishment, factory, or workshop, and children between fourteen and sixteen years may be allowed to work therein only under certain regulations. No female shall be employed therein more than eight hours in any one day, or forty-eight hours in any one week. It was also made unlawful for any individual or firm, or agent, officer, or employee of any company or corporation to prevent or at-

tempt to prevent employees from forming, joining, and belonging to any lawful labor organization. Any such person who coerces or attempts to coerce employees by discharging or threatening to discharge them from his employ or the employ of any firm or corporation because of their connection with such organization shall be subject to fine or imprisonment or both in the discretion of the court.

The insurance department of the State Auditor's office was made a separate State department under the control of a superintendent appointed by the Governor with the advice and consent of the Senate. A commission consisting of 2 members of the Senate and 3 members of the House was created for the purpose of revising and codifying the public statutes of the State, and was directed to report at the session of 1895. The sum of \$100,000 was appropriated for carrying into effect the act of 1887 establishing an Industrial Home for the Blind. A State Home for Juvenile Offenders was established, and provision was made for the necessary buildings and for its management.

For each of the years 1893 and 1894 a levy of \$1,500,000 for general State purposes, and of \$1,000,000 for school purposes, was authorized.

Provision was made for submitting to the people at the next general election a constitutional amendment giving the General Assembly power to regulate and control contracts, conditions, and relations existing or arising between corporations and their employees.

Other acts of the session were as follow:

To prevent and punish abandonment of wife or children by the husband.

Prohibiting employment of aliens as peace officers.

To regulate foreign building, loan, and homestead associations doing business in the State.

Authorizing the organization of district mutual wind-storm, cyclone or tornado insurance companies.

Revising the law regulating life and accident insurance companies on the assessment plan, and regulating fraternal beneficiary societies.

Revising the law regulating the commitment and detention of lunatics.

Establishing a naval militia.

To provide for the creation of pleasure driveways and park districts.

To provide for the enlargement of Lincoln Park, Chicago.

To prevent the formation of trusts and combines.

Providing for a commission to promote uniformity in State laws.

Providing for an investigation of the whisky trust.

**Charities.**—The charitable institutions of the State are 11 in number. They consist of the Northern Insane Hospital at Elgin, with an average attendance of 905; the Eastern Insane Hospital at Kankakee, average attendance 1,703; the Central Insane Hospital at Jacksonville, average attendance 1,079; the Southern Insane Hospital at Anna, average attendance 802; the Asylum of Insane Criminals at Chester, recently opened, average attendance 51; the Institution for the Deaf and Dumb at Jacksonville, average attendance 373; the Institution for the Blind at Jacksonville, average attendance 162; the Asylum for the Feeble-minded at Lincoln, average attendance 485; the Soldier's Orphan's Home at Normal, average attendance 398; the Charitable Eye and Ear Infirmary at Chicago, average



attendance 132; and the Soldiers' Home at Quincy, average attendance 846. The total average number of inmates in these institutions is 6,935, and the average net cost *per capita* for their maintenance is \$163 per annum.

**Education.**—The following statistics from the report of the State Superintendent of Public Instruction cover the school years ending June 30, 1891, and June 30, 1892;

ITEMS.	1891.	1892.
Children of school age .....	1,160,051	1,221,832
Children enrolled in public schools..	799,053	809,452
Average daily attendance .....	560,059	574,738
School districts.....	11,509	11,578
Average school year in months.....	7.4	7.4
Male teachers .....	7,091	6,170
Female teachers.....	15,942	16,176
Monthly wages, male teachers.....	\$55 55	\$56 92
Monthly wages, female teachers....	\$45 31	\$46 06
Value of school property.....	\$27,833,249	\$29,924,373
Private schools reported .....	975	955
Pupils in private schools .....	105,753	90,444
Teachers in private schools.....	2,925	2,867

**Penitentiary.**—On Dec. 1, 1892, there were confined in the Joliet Penitentiary 1,434 convicts, and in the Chester Penitentiary 613. The convict lease system was abolished by a constitutional amendment adopted in 1886, but this amendment could not change existing contracts, and as the State authorities had already made a number of long-term convict leases, it was necessary that the agreements therein contained should be carried out. These leases have expired from time to time until in January, 1893, only 269 convicts at Joliet and 125 at Chester were employed thereunder. As fast as they were released, the convicts have been set to work under the "piece-price" system, which was adopted as a temporary expedient until the General Assembly should provide some law regulating their labor. At the session of 1893 action was taken authorizing the Penitentiary authorities to employ the released convicts in such occupations as would best secure their health, discipline, and reformation, and money was appropriated for purchasing machinery, tools, power, and raw material for their use. The new reformatory at Pontiac has been thoroughly organized, and by proclamation of the Governor was opened to receive prisoners early in January of this year. On Dec. 1, 1892, there were 339 inmates at the State Reform School.

**Railroads.**—The report of the Railroad Commissioners for 1892 shows the railroad mileage of the State to be 14,677.88 miles, an increase of 360.57 miles over 1891. Illinois still leads all the States in the total railway mileage in operation and the number of miles of railway per square mile of territory. The gross earnings from operation of railroads were \$306,618,011.79; the operating expenses, \$206,049,930.77; income from operation, \$10,568,081.02; total income, \$114,426,308.23; expenses assignable as fixed charges, \$80,086,358.33; net income, 54 roads, \$36,616,701.29; net deficit, 27 roads, \$2,276,751.39. Fifteen operating and 11 leased or subsidiary lines paid dividends amounting to \$25,327,515.47, but the Centralia and Chester, the East St. Louis Connecting, and the Pawnee roads failed to earn enough to pay expenses. The total earnings and income of the railroads

in Illinois aggregated \$81,793,012.43. There was an increase of 6.96 per cent. in the receipts from passengers and of 12.99 per cent. in the receipts from freight. The total earnings from operation show an increase of 12.30 per cent. and the total earnings and income of 11.26 per cent.

The total number of railway employees in Illinois was 66,680, and their aggregate annual salary \$40,072,676.88, an increase of 5,712 employees and of \$3,184,025.81 in salary.

**Illinois and Michigan Canal.**—The earnings of this canal for the two years ending with 1892 amounted to \$158,333.65, and the disbursements to \$152,212.17. During this period the sum of \$28,516.98 was expended for repairs and ordinary improvements. New gates have been put in at the Henry and Copperas creek locks, for which the General Assembly of 1891 made a special appropriation of \$25,000.

**State Banks.**—A compilation of reports made by the various State banks on April 10 shows that their combined resources aggregated \$118,446,833.63. The principal items in this aggregate were: Loans and discounts, \$82,600,673.73; overdrafts, secured and unsecured, \$216,450.78; United States bonds, \$35,414.87; other bonds and stocks, \$10,009,626.83; cash on hand, \$8,647,543.61; due from other banks, \$13,932,066.78; checks and other cash items, \$1,859,780.27; collections, \$88,813.07. The larger items among the liabilities aggregate the following amounts: Capital stock, \$18,072,500; surplus fund, \$5,225,712.79; undivided profits, \$3,288,517.72; savings deposits subject to check, \$27,305,030.96; individual deposits subject to check, \$46,348,972.84; demand certificates of deposit, \$4,185,764.63; time certificates of deposit, \$7,575,137.82; certified checks, \$565,724.70; cashier's checks outstanding, \$349,313.47; due to other banks, \$5,080,449.15; bills payable and notes re-discounted, \$441,055.38.

**Labor Riot.**—On June 9 a bloody encounter occurred at Lemont between a mob of striking laborers and an armed force of sheriff's deputies. Three persons were killed outright, and more than a dozen were wounded. The difficulty grew out of an attempt on the part of the strikers to prevent any one from superseding them in the quarries and on the drainage canal. This encounter aroused such bitter feeling that the Governor, upon the request of the sheriff of Will County, ordered the militia to the scene on the day following the riot. Their presence restored order, and after a few days, no further disturbance occurring, the Governor, having visited the scene and counseled obedience to law, decided to order their withdrawal.

**The Anarchists pardoned.**—On June 27 the country was astonished by the news that Gov. Altgeld had granted pardons to the 3 anarchists, Oscar Neebe, Samuel Fielden, and Michael Schwab, who were convicted for participation in the memorable Haymarket massacre in Chicago on the night of May 4, 1886, when several policemen were killed and many seriously wounded by the explosion of a dynamite bomb that was thrown as they approached the crowd they were ordered to disperse. Fielden and Schwab, together with 5 other leaders, were sentenced to be hanged, but succeeded in securing a commutation of their sentence to life imprisonment, while

Neebe received a sentence of fifteen years. The Governor, in his statement accompanying the pardons, alleged that the jury that tried their cases was packed; that it was prejudiced, and therefore incompetent to try the case; that there was no evidence connecting the prisoners with the crime charged, and that the judge who presided at the trial was prejudiced.

**Suits against Former State Officers.**—Late in January, in accordance with instructions from Lient.-Gov. Gill, then acting as Governor, Attorney-General Moloney brought suit against ex-State Auditor Pavay and his sureties, claiming that the ex-Auditor had violated his official bond by retaining possession of the private account books relating to the insurance department, and by drawing a salary as insurance commissioner in addition to that of Auditor. On Feb. 10 the acting Governor further instructed the Attorney-General to bring suits against all the auditors and State treasurers who had held office since 1870. In his letter of instructions he made the following charges:

1. That the auditors of public accounts have for many years drawn 3 salaries, namely, 1 as auditor of public accounts of \$3,500 per annum, 1 as Commissioner of Insurance of \$5,000 per annum, and 1 as *ex officio* member of the State Board of Equalization at \$5 per day—in violation of section 23, Article V of the Constitution, prohibiting State auditors from receiving in excess of their salary (\$3,500) “any fees, costs, perquisites, or compensation”; and, further, that the books and records necessary to show the receipts and expenditures of the insurance department have been illegally sequestered by outgoing auditors of public accounts.

2. That for years the public moneys in the State treasury have been loaned at interest by State treasurers, and the interest or profit accruing from the money so loaned has been converted to the use of former State treasurers, and for such interest they have not accounted to the public of the State of Illinois.

To this order the Attorney-General soon responded by bringing suit on the bond of E. S. Wilson, who retired from the office of State Treasurer at the beginning of the year, and in March he began legal proceedings against ex-Auditors Charles E. Lippincot and Charles P. Swigert. The questions that are involved in these suits had not been determined at the close of the year 1893.

**Chicago.**—On April 4 an election for members of the city government was held which aroused unusual interest from the fact that the officials to be chosen, especially the mayor, would have the duty of representing the people of Chicago in all public ceremonies attendant upon the World's Fair, and in entertaining visiting officials and celebrities. Carter H. Harrison, who had already served several terms as mayor, received the Democratic nomination; Samuel W. Allerton was the nominee of the Republicans and of a citizens' convention, and De Witt C. Cregier received the nomination of the Labor party. After a sharp canvass, in which nearly every newspaper of influence in the city united in opposing Harrison, he was elected, having a plurality exceeding 20,000 over Allerton.

Another important election occurred in the city in November for judges of the local courts. Judge Joseph Gary, who presided at the trial of the anarchists in 1886, and whose conduct there-

in had been severely criticised by Gov. Altgeld, was a candidate for re-election. Although a Democrat and rejected by the convention of his own party, he was nominated on the Republican ticket, and was earnestly supported by the better element of both parties. In spite of the opposition of Gov. Altgeld, he ran ahead of the ticket, and was re-elected by a handsome majority, carrying with him into office nearly all the other Republican candidates. On Oct. 28 Mayor Harrison was assassinated (see article HARRISON, CARTER HENRY, in this volume). On Dec. 19 a special election was held to choose a mayor, at which John P. Hopkins, Democrat, was successful, receiving 112,700 votes to 111,313 for George B. Swift, the Republican candidate, and 1,517 for the Socialist Labor nominee.

**INDIA**, an empire in southern Asia dependent on the British Crown, is governed, pursuant to certain general acts of Parliament, by a Governor-General, popularly styled the Viceroy, and his subordinates, under the general control of the Secretary of State for India, who is a member of the British Cabinet. The Secretary of State is assisted by a Council of at least 10 members, 9 of whom must have served or resided ten years in India. All expenditures of the revenues must be passed upon by the Council; but in matters involving foreign relations, the policy of the Government toward the native states, or other matters requiring secrecy, the Secretary of State may act without the Council. The Governor-General is assisted by a Council of 5 ordinary members, supplemented by a member representing the Department of Public Works and the commander in chief of the forces. Governors and lieutenant-governors also become extraordinary members when the Council meets within their provinces. The ordinary members have charge of the Departments of Home Affairs, Revenue and Agriculture, Military Affairs, Legislation, Finance and Commerce, and Public Works. There is a Legislative Council, consisting of the Council of the Governor-General and from 10 to 16 additional members appointed by him. The ordinary members of the Executive Council are appointed by the Crown, as are also the Governors of Bombay and Madras. The Lieutenant-Governors of Bengal and of the Northwest Provinces and Oudh, and the Chief Commissioners of Assam, the Central Provinces, and Burmah are appointed by the Viceroy, subject to the confirmation of the Secretary of State. The Governors of Madras and Bombay (including Sindh) have each an Executive and a Legislative Council, and a separate civil service and a separate army. The Lieutenant-Governors of Bengal and of the Northwest Provinces have only legislative councils. The chief commissioners have no councils or legislative powers. The provinces have divisions administered by commissioners, and these divisions are subdivided into districts under collector magistrates and deputy commissioners, which are the units of administration. Each district magistrate has under him usually a joint magistrate, an assistant magistrate, and deputy collectors or other officers. Many of the magistrate collectors exercise judicial as well as administrative functions. The term of the Marquis of Lansdowne as Viceroy expired in December, 1892. Sir Henry Nor-



man, Governor of Queensland, was appointed in September to take the place at the expiration of the term, and after at first accepting, ultimately declined the appointment for personal reasons. It was then offered to Lord Cromer, who also declined. The Earl of Elgin, born 1849, was appointed Viceroy early in October, and signified his acceptance of the office. His father was appointed Viceroy in 1862, and died in India.

The Indian Councils act, passed by the Imperial Parliament in 1892, provided for enlarged representation in the Supreme Council and in the several provincial councils; it also provided that the council members should be allowed the privilege of interpellating the Government, and that in the Supreme Council discussion of the budget should be allowed in all cases; whereas heretofore discussion had been permitted only when fresh taxation was considered. The act only laid down general principles, leaving the task of practically applying them to be worked out by the Government of India, subject to the approval of the Secretary of State. Early in the present year the Viceroy made known the rules which would govern interpellations in the Supreme Council, these being essentially the same as those which obtain in the Imperial Parliament. It is left discretionary with the president to disallow any question to which answer at the time might jeopardize the public interests. The rules for the provincial councils are similar, but forbid interpellation upon matters not under the control of the local government, as well as all questions, except as to matters of fact, relating to any subject in controversy between the local government and the Supreme Government or the Secretary of State. As to the budget, the rules provide that a full explanation of it shall be made in Council each year, after which members are privileged to speak upon it and the financial member may reply, the president closing the discussion. The Viceroy proclaimed these rules and the privileges to which they relate in force from Feb. 2, 1893. The Councils act provides that the maximum number of additional members of the Viceroy's Legislative Council shall be 16, of whom at least one half shall be nonofficial. It was proposed by the Indian Government and approved by the Secretary of State that there should be 10 nonofficial members, of whom 4 should be recommended by the legislatures of the provinces having councils, 1 should represent the interests of commerce, and 1, perhaps, be chosen from the Calcutta bar, while the selection of the other 4 should be left entirely to the discretion of the Viceroy. The new system, while it creates various elective bodies, does not give them the power of absolute election, but confines them to the privilege of recommending candidates to the Government. The right of appointment remains with the governors of provinces, and in the Supreme Council with the Governor-General in Council; but in commenting upon this point in the Legislative Council, the Viceroy remarked that such recommendation would be entitled to the greatest weight, and was not likely to be disregarded except in cases of the clearest necessity.

**Finances.**—The revised estimate of revenue for 1891-'92, and the budget estimate for 1892-'93, were, in tens of rupees, as follow :

REVENUE.	1891-'92.	1892-'93.
Land revenue .....	23,880,500	24,675,500
Opium revenue .....	8,026,100	7,634,600
Salt revenue .....	8,620,700	8,544,700
Stamps .....	4,226,900	4,229,600
Excise .....	5,096,800	5,102,400
Provincial rates .....	3,476,500	3,623,100
Customs .....	1,687,000	1,691,800
Assessed taxes .....	1,641,600	1,645,200
Forests .....	1,697,800	1,567,200
Registration .....	390,400	392,200
Tribute .....	778,900	762,100
Interest .....	882,500	911,100
Post-office, telegraphs, and mint ..	2,545,400	2,618,000
Civil departments .....	1,643,600	1,615,800
Miscellaneous .....	891,100	959,900
Railroads .....	19,654,900	18,832,700
Irrigation .....	2,249,600	2,216,700
Buildings and roads .....	615,700	606,400
Military departments .....	776,900	739,000
Total .....	88,585,900	88,367,900

The expenditure under the different heads in 1891-'92, according to the revised estimates, and that for 1892-'93, according to the budget estimates, was, in tens of rupees, as follow :

EXPENDITURE.	1891-'92.	1892-'93.
Interest .....	4,334,000	3,977,100
Refunds, compensations, etc. ....	1,735,400	1,753,400
Cost of collection .....	7,813,900	8,528,200
Post-office, telegraphs, and mint ..	2,440,500	2,547,900
Civil salaries .....	13,863,000	14,132,500
Miscellaneous civil charges .....	5,045,000	5,170,900
Famine relief and insurance .....	1,209,900	1,206,700
Railroad construction .....	182,600	301,560
Railroad revenue account .....	20,133,700	20,407,200
Irrigation .....	2,963,200	2,919,500
Buildings and roads .....	6,248,700	5,920,100
Army .....	22,506,900	21,898,500
Defense works .....	550,000	614,500
Total .....	89,127,400	89,333,000

Deducting balances due the Imperial Government on provincial accounts, the expenditure for 1891-'92 stands at Rx 88,665,900, and for 1892-'93 at Rx 88,221,300. In addition to these amounts a capital expenditure not charged against revenue on railroad and irrigation works is set down for 1891-'92 at Rx 3,500,000, and for 1892-'93 at Rx 4,035,000.

The closed account for 1891-'92 showed an additional surplus of Rx 113,435, making it Rx 467,000. The figures for 1892-'93 as revised showed an increase in the net revenue of Rx 1,891,600, while the net expenditure increased Rx 3,120,000, thus converting the anticipated surplus of Rx 164,600 into a deficit of Rx 1,081,900. The budget estimate of revenue for 1893-'94 is Rx 90,005,700, and of expenditure Rx 91,600,800, the result being a deficit of Rx 1,595,100. The principal increase in the estimated revenue of 1892-'93 was Rx 971,600 in opium, the crop of which had been for three years a partial failure. This led the Government to reduce the number of chests sold, and resulted in a material appreciation in the prices obtained, while the cost of production was considerably decreased. The other items which went to make up the increase were land, salt, stamps, excise, and others of the general revenue. Of the increased expenditure, Rx 1,635,300 was due to the fall in exchange during the year below 1s. 6d. per rupee, the price calculated in the budget, in addition to which there was a considerable increase of expenditure

in England and on the army in India. The deficit for 1893-'94 is due mainly to exchange, Rx 2,229,400, and a reduction of Rx 600,000 in the opium revenue, while there is some addition to the army expenditure. On the other hand, there is an estimated increase of Rx 647,700 in the ordinary revenue, some improvement in estimated railroad receipts, and some reduction in estimated expenditure, both in England and in India. The fall in exchange has in two years added Rx 4,142,400 to Indian expenditure. It was expected that the Secretary of State would draw bills during the current year to the amount of £18,700,000. The rupee is reckoned at 1s. 2½d.

The cultivation of the poppy in British territory is permitted only in parts of Bengal, the Northwest Provinces, and Oudh, though some opium is produced in the Punjab for local consumption. The Government advances funds to the opium grower in the monopoly districts to enable him to put in the crop, the whole of which he is bound to sell at a fixed price to Government agents, who transmit it to Patna or Ghazipur, where the Government factories are located. The product is then packed in chests and sold in Calcutta, at monthly auction sales, for export to China. Opium is also produced in a number of the native states, which have agreed to conform to the British system. Opium exported from their territories is subject to a heavy duty, and upon exportation from the country must pay to the Indian treasury a duty, recently reduced from 650 to 600 rupees per chest. In 1855-'58 the net revenue from opium averaged Rx 4,580,000; while from 1882 to 1891 the average was Rx 6,540,302.

The consolidated debt on March 31, 1891, was Rx 207,154,763, of which Rx 102,746,555 were payable in India, and Rx 104,408,208 in England. There was also an unfunded debt in India of Rx 11,271,306, making the total debt Rx 218,426,069. The revenues and expenditures in tens of rupees of each of the governments for the year ending March 31, 1891, are given in the following table:

GOVERNMENTS, ETC.	Revenue.	Expenditure.
India .....	14,537,295	19,935,102
Bengal .....	19,695,541	8,910,594
Assam .....	1,027,214	698,480
Punjab .....	7,291,572	4,711,533
Northwest Provinces and Oudh..	10,653,551	4,991,031
Central Provinces.....	2,029,024	1,337,472
Madras.....	11,647,255	8,284,856
Bombay .....	13,248,054	8,692,584
Burmah .....	5,087,045	3,835,507
In England .....	392,009	15,566,875
Exchange.....	128,089	5,087,144
Total .....	85,741,649	82,053,478

**Abolishing Free Silver.**—In March, 1892, the Indian Government began a correspondence with the Secretary of State for India, in the course of which it was proposed that, in case it became evident that the Brussels Conference would not arrive at a satisfactory conclusion, and no direct arrangement could be made between India and the United States regarding silver, the mints of India should at once be closed to the free coinage of silver, and arrangements be made for the introduction of a

gold standard. The Secretary of State referred the whole matter to a committee of seven members, of which Lord Herschell was chairman. The committee recommended the closing of the mints against the free coinage of silver, accompanied by an announcement that, though closed to the public, they will be used by the Government for the coinage of rupees in exchange for gold at a provisional ratio of 1s. 6d. for the rupee, and that at the Government treasuries gold will be received in satisfaction of public dues at the same ratio. The committee further recommended that the time for taking action should be left discretionary with the Government of India, subject to the approval of the Secretary of State. A bill in which for 1s. 6d. was substituted 1s. 4d. as the provisional value of the rupee, was introduced by the Government in the Legislative Council at Simla on June 26, 1893, and passed. The Viceroy said it was not proposed to substitute a gold for a silver currency, nor to attempt at present to fix a legal-tender price for gold. The feeling of satisfaction with the act abated somewhat when the Secretary of State found it necessary to sell his bills on the Indian Council below the provisional price of 1s. 4d. for the rupee. The exchange value of the rupee fell below 15d. early in October, but no bills were sold by the Secretary of State. Sales were made on Oct. 26 at 15½d., and that continued to be the price through November and December, though the sales made were comparatively small. The total sales of bills and telegraphic transfers from April 1 to Dec. 19 amounted to 104,625,375 rupees, and produced £6,491,985. On Dec. 21 the royal assent was given to an act of Parliament empowering the Secretary of State for India to borrow £10,000,000, or any part thereof, to meet the expenditure of the Indian Government in England. This removed the necessity of further sales of rupee paper to meet immediate requirements, unless a more favorable rate of exchange could be obtained. The imports of uncoined silver into India continued so heavy even after the closing of the mints that the imposition of an import tax upon it was advocated by members of the Indian Government. The Government of India announced in August that, in compensation for the great decline in the value of the rupee, Government servants, whether civil or military, would thereafter receive one half of their salaries, up to the limit of £1,000, at the rate of 18d. per rupee.

**Defense.**—Besides the British army in India, numbering 74,031 men of all ranks, there was, at the beginning of 1893, exclusive of artificers and followers, a native army numbering 144,755 men of all ranks, making the aggregate strength of the Indian army 218,786 men. The British army in India was made up as follows: Artillery, 419 officers and 12,821 noncommissioned officers and privates—total, 13,312; cavalry, 261 officers and 5,418 noncommissioned officers and privates—total, 5,679; engineers, 293 officers; infantry, 1,537 officers and 52,176 noncommissioned officers and privates—total, 53,713; invalid and veteran establishment, 11 officers and 24 noncommissioned officers and privates—total, 35; staff corps, 841 officers; general list, 117; unattached officers, 2; unemployed general



officers, 39. The native army comprised: Artillery, 33 European and 26 native officers, and 3,752 noncommissioned officers and privates—total, 3,811; cavalry, 362 European and 626 native officers, and 22,439 noncommissioned officers and privates—total, 23,427; sappers and miners, 56 European, and 63 native officers, and 3,706 noncommissioned officers and privates—total, 3,825; infantry, 1,119 European and 2,043 native officers, and 110,530 noncommissioned officers and privates—total, 144,755. Measures are progressing which will enable the Imperial Government to draw from the various feudatory states contingents of well trained and equipped troops to take place in line with the regiments of the regular Indian army. These special contingents, which are known as imperial service troops, numbered, at the beginning of the present year, 17,028, of which 9,510 were infantry, 7,218 cavalry, and 300 artillery. At the end of July, 1893, over 48,000 magazine rifles had been distributed to the British infantry, while 29,000 were held in reserve, and 44 batteries had received 12-pounder guns.

**Commerce and Production.**—The following table gives, in tens of rupees, the values of the leading imports and classes of imports during the year ending March 31, 1892:

IMPORTS.	Value.
Cotton manufactures .....	28,689,472
Metals, hardware, and cutlery .....	6,894,067
Silk, raw and manufactured .....	3,014,698
Sugar, raw and refined .....	2,561,996
Woolen goods .....	1,762,031
Liquors .....	1,442,095
Railway plant and rolling stock .....	1,484,173
Oils .....	2,635,955
Machinery and millwork .....	2,111,696
Coal .....	1,250,493
Provisions .....	1,771,793
Apparel .....	1,398,027
Salt .....	627,953
Spices .....	797,196
Glass .....	728,203
Drugs .....	650,425
Paper .....	470,339
Umbrellas .....	414,942
Grain and pulse .....	215,590

The total value of the merchandise imported during the year on private account was Rx 66,587,457, against Rx 69,034,900 in the preceding year.

The values of the principal exports of private merchandise of Indian production during the year ending March 31, 1892, are given in the following table:

DOMESTIC EXPORTS.	Value.
Rice .....	13,385,971
Wheat .....	14,380,462
Cotton, raw .....	10,754,812
Cotton, manufactured .....	7,035,086
Opium .....	9,562,461
Seeds .....	12,208,458
Hides and skins .....	5,186,002
Jute, raw .....	6,848,493
Jute, manufactured .....	2,513,100
Tea .....	5,968,129
Indigo .....	3,214,076
Other dyes and tans .....	764,710
Coffee .....	1,998,659
Wool, raw .....	1,013,864
Wool, manufactured .....	94,788
Spices .....	408,978
Lac .....	751,224
Sugar, raw and refined .....	508,417
Raw silk and cocoons .....	518,627
Silk, manufactured .....	183,957
Oils .....	588,811
Wood .....	609,463
Provisions .....	776,581
Saltpeter .....	365,618

The total value of the domestic exports for the year was Rx 103,550,831, against Rx 95,902,193 for the preceding year. The value of the foreign merchandise exported during the year ending March 31, 1892, was Rx 4,485,179.

The distribution of the foreign trade among the principal countries is shown by the following table, which gives the values, in tens of rupees, of the imports and exports of merchandise for the year ending March 31, 1892:

COUNTRIES.	Imports.	Exports.
Great Britain .....	48,241,400	33,446,985
China .....	2,877,138	13,711,883
France .....	1,041,678	10,945,575
Egypt .....	91,282	7,181,460
Belgium .....	1,324,027	5,460,273
Germany .....	1,524,969	5,073,527
Straits Settlements .....	2,358,598	4,997,769
United States .....	1,199,468	3,872,593
Italy .....	535,906	2,985,457
Ceylon .....	669,777	2,769,883
Austria .....	839,407	2,174,645
Japan .....	65,746	1,289,787
Mauritius .....	1,719,871	1,158,436
Australia .....	287,315	967,739
Holland .....	155,415	932,071
Arabia .....	553,297	644,499
Persia .....	709,992	594,829
East Africa .....	326,591	560,719
Spain .....	14,802	246,779

The following table shows, in tens of rupees, the imports and exports of specie and bullion, both on private and Government account, for five fiscal years:

YEAR.	GOLD.		SILVER.	
	Imports.	Exports.	Imports.	Exports.
1888 .....	3,236,053	243,572	10,589,803	1,361,052
1889 .....	3,119,088	305,154	10,725,872	1,479,192
1890 .....	5,071,027	455,724	12,388,474	1,450,598
1891 .....	6,500,832	864,660	15,483,654	1,258,518
1892 .....	4,118,929	1,705,137	10,603,733	1,581,549

The imports of silver during the year ending March 31, 1893, amounted to about Rx 15,000,000, and continued unusually heavy throughout the calendar year.

The total imports of merchandise and treasure, including those of the Government, during the year ending March 31, 1892, reached the value of Rx 84,155,045, and the total exports amounted to Rx 111,460,278. Imports of merchandise to the value of Rx 54,706,516, and exports to the value of Rx 67,237,583, passed through the Suez Canal.

The foregoing figures are for the sea-borne traffic, and do not include the transfrontier land trade, the value of which, for merchandise only, for three years ending March 31, is given in tens of rupees, in the following table:

YEAR.	Imports.	Exports.	Total.
1890 .....	3,261,700	3,263,400	6,525,100
1891 .....	3,515,200	3,029,700	6,544,900
1892 .....	3,970,900	3,918,200	7,889,100

**Navigation.**—The total number of entries of vessels at British Indian ports during the year ending March 31, 1892, was 5,686, aggregating 4,308,375 tons. Of these, 2,325 were British, aggregating 3,563,678 tons; 953 were British Indian, aggregating 146,659 tons; 721 were foreign, aggregating 507,944 tons; and 1,687 were

native, aggregating 90,094 tons. The whole number of clearances were 5,472, aggregating 4,282,476 tons, of which 2,335 vessels, of 3,583,354 tons, were British; 977, of 148,963 tons, were British Indian; 645, of 468,904 tons, were foreign; and 1,515, of 81,055 tons, were native. Of the entries, 1,043, aggregating 2,019,283 tons, and of the clearances, 1,268, aggregating 2,412,341 tons, were of steam vessels passing through the Suez Canal.

**Railroads.**—The number of miles of railroads in operation in March, 1892, was 17,564, and the number of passengers carried during the year was 122,855,337, against 114,082,246 in the preceding year; while the freight moved aggregated 26,158,953 tons, against 22,612,718 tons, during the previous year. The working expenses amounted to Rx 11,303,847, which was 47·02 per cent. of the gross earnings; and the net earnings realized were Rx 12,736,432, giving an average return on the capital expenditure on working lines of 5·76 per cent., against Rx 10,310,913 net earnings, and 4·85 per cent. return for the preceding year. The total expenditure of the state on railroads, including lines under construction or survey, amounted to Rx 227,669,765.

**Posts and Telegraphs.**—During the year ending March 31, 1891, the post-offices handled 288,066,477 letters, postal cards, and money orders, 24,935,368 newspapers, 1,901,547 parcels, and 10,375,319 packets. The revenue was Rx 1,402,748, and the expenditure Rx 1,396,535. The length of the telegraph lines was 37,070 miles, with 113,512 miles of wire, and the number of paid messages was 3,507,100. The receipts were Rx 781,034, and the expenses Rx 763,980.

**The National Congress.**—The Indian National Congresses were organized while the Marquis of Ripon was Viceroy, as a means of making known to the Government in an orderly but forcible manner the wishes and views of the native population in political affairs, and for the purpose of securing a larger native representation in the administration of the Government. The first Congress convened in 1884. These Congresses have been held annually since that time. The eighth met at Allahabad on Dec. 30, 1892, with 700 delegates, under the presidency of W. C. Bonerjee, of Calcutta. The Congress adopted four resolutions: (1) That, while accepting Lord Cross's Councils act as intended to give the people of India a real representation in the legislative councils, it regretted that the act does not in terms concede to the people the right of electing their own representatives. (2) That simultaneous examinations for the civil service should be held in England and India. (3) That serious mischief has been done to the country by the combination of judicial and executive functions in the same officials. (4) That, in view of the diversity of opinion on the currency question, the Congress hoped that, unless forced to do so, the Government would take no steps to change the currency standard.

**Burmese Frontier Troubles.**—The Kachin tribes, a hardy and warlike people who occupy the mountainous northeastern districts on the borders of Upper Burmah, early in January, 1893, made repeated attacks upon a British exploring party which was making its way in a northeast-

erly direction from Bhamo to establish a fortified post at Sima, in the Kachin hills, and on the Nampoung river. In one of these attacks Lieut. Dent was dangerously wounded. After the post was established at Sima it was invested by the Kachins, 1,000 strong, and in a sortie Capt. Morton, who was in command of the post, was killed. The post was strengthened, and an attempt was made to open the road between Sima and Nhrang, but after some severe fighting the road was abandoned to the Kachins. The fighting continued at and around Sima through January and most of February, the forces consisting at first entirely of the native military police, but eventually it was determined to send re-enforcements of both native and British troops, and near the end of February the officer in command reported that the rising was crushed, and that the submission of all the villages around Sima was complete.

Meantime trouble with the Kachins had broken out in the Northern Shan States, where the Kachins besieged Theinni, and killed Lieut. Williams and a native officer who proceeded against them at the head of a column of military police. In this case, however, a force of British and native infantry was promptly sent out, and the rising was quelled. There was also some fighting with the tribes in the Chin hills, but they were brought to submission and disarmed. In April the Kachins round Sima raided several villages, driving out the police, who had been re-enforced from the fort, and compelling them to retreat to Sima. Strong re-enforcements were sent to the fort at Sima, and the rebel tribes were driven from its vicinity, but no further operations against the Kachins east of the Irrawaddy were undertaken. This termination of the campaign was considered very unsatisfactory in Burmah, as a number of rebellious villages had not been visited, and no adequate punishment had been inflicted. It was generally believed that the Kachins had been encouraged, if not actually assisted, by the Chinese authorities, as a Chinese officer in a handsome laced uniform was found among the killed near Sima.

**Religious Riots.**—The magistrates of Rangoon, the chief city of Burmah, in deference to the Hindu population, by whom the cow is regarded as a sacred animal, prohibited cow-killing near the Hindu temple during the Bakri Id festival in June, and in resentment of this the Mohammedans began, on the 22d, to make riotous demonstrations, which culminated three days later in an attack on the police. The principal officials were on the spot, and made strenuous efforts to quiet the mob; but the rioters charged the police with stones and fired upon them with fatal results, and the recorder of Rangoon ordered the police to fire upon and charge the mob. The rioters suffered a loss of 20 killed, while many were seriously wounded. This did not suffice to subdue them, and a regiment of soldiers was called out, which cleared and occupied the main streets. Afterward, through the efforts of leading Hindu and Mohammedan merchants, quiet was restored. Similar riots occurred during the festival in Azimgar. A mob stoned the police, seriously injuring the district superintendent, whereupon the police opened fire, killing and wounding many of the rioters. Great alarm



prevailed; the English women and children were sent away, and troops were sent from Fyzabad to the scene of the trouble. Rioting from the same causes occurred in July at Ballia, to which 100 men of the Bengal infantry were sent to quell the disturbance. But the most serious of these religious outbreaks began in Bombay on Aug. 10. It was the day of the Divasra holiday of the Hindus, and also a Mohammedan prayer day. The Hindus made a great noise with their tom-toms near the principal mosque, and after the morning prayer some 2,000 Mohammedans rushed out of the mosque, shouting their war cry and running toward the neighboring Hindu temple. Apprehensive of an outbreak, the police were massed near the temple, where they met and drove back the Mohammedans. Rioting then became general throughout the city, especially in the native town and in the suburbs, and was continued throughout the two days following. There are upward of 500,000 Hindus in Bombay, while the Mohammedans number about 160,000, and it was estimated that at least 50,000 men took part in the riots. The police were unable alone to cope with such widespread disorder, and the military were promptly called out. In addition to the troops of the garrison, the volunteers were summoned, and marines were brought from the war ships in the port and troops from Poona. Comparative quiet was restored on the night of the 12th, but the outbreaks continued for several days. The rioters on both sides fought fiercely with sticks and stones, and several mosques and Hindu temples were desecrated or destroyed. The number of killed, so far as known, was 36 rioters and 3 policemen. The immediate cause of these religious riots was believed to be the activity of the missionaries of the Cow Protection Society in stirring up the feelings of the Hindus against the cow-killing Mohammedans, and while the educated and better classes on either side took no part in the riots, it was evident that they did little to prevent them.

**Khan of Khelat deposed.**—In April the Indian Government was advised that the Khan of Khelat had murdered his Prime Minister, caused other high officials to be mutilated, and held a number as prisoners. A column of troops was ordered forward from Quetta, and the Khan was called upon for an explanation, and required to release the prisoners. The Khan admitted to the Viceroy's agent that he had killed 3,000 men and women since his accession, thirty-six years ago. Upon the recommendation of the agent the Khan was deposed in August, and his eldest son, Mir Mahmud, recognized as his successor. The position of the state remained otherwise unaffected.

**INDIANA**, a Western State, admitted to the Union Dec. 11, 1816; area, 36,350 square miles; population by the census of 1890, 2,192,404. Capital, Indianapolis.

**Government.**—The State officers during the year were: Governor, Claude Matthews, Democrat; Lieutenant-Governor, Mortimer J. Nye; Secretary of State, William R. Myers; Attorney-General, Alonzo G. Smith; Auditor, J. O. Henderson; Treasurer, Albert Gall; Superintendent of Public Instruction, H. D. Vories; Statistician, William A. Peelle; all Democrats; Judges of the

Supreme Court, Silas D. Coffey, Walter Olds, Jephtha D. New, James McCabe, Timothy O. Howard.

**Finances.**—The Auditor's compilation from the returns of the taxable values of the several counties for this year gave: Total true valuation of taxables, \$1,266,855,377; total State tax on this sum, \$1,704,806.44; total value of railroad property, \$160,387,420; total number of polls, 385,619. The grand total of taxes for all purposes estimated for the year was \$18,037,759.51. The amount of delinquent tax, including the past year and the preceding years not yet outlawed, was \$3,001,906.69.

Following is the assessment of express, telegraph, telephone, and sleeping-car companies as fixed by the State Board of Tax Commissioners. These figures are exclusive of the real estate, structures, machinery, fixtures and appliances subject to local taxation within the State: Express companies, \$1,225,890.75; telegraph and telephone, \$2,976,925.25; sleeping-car, \$558,400; total, \$4,761,216. This is the first assessment made of these companies since the supplementary tax law passed in 1893 went into effect.

The State debt at the beginning of the year, with interest, amounted to \$8,830,615.12. The matured bonds, to the amount of \$340,000, with interest, \$51,287.50, were paid on April 1.

A census bulletin published in April shows facts about mortgages as follows: The aggregate of farm mortgages in the State is \$74,554,426. In 1890 the value of farms and improvements, exclusive of personal property, was \$529,537,587. These figures are below the real value of the property, but upon that basis the debt on farms is less than 14 cents on a dollar, while that on lots and improvements is almost 13½ cents. The mortgage debt upon the true value of the real estate in Indiana is 9.79 per cent., lower than any Northern State now reported.

**Banks.**—The report compiled from official data showing the number of bank failures and resurrections from January to September, shows that 36 Indiana banks failed and 7 resumed.

An investigation of the failure of the Indianapolis National Bank resulted in 7 indictments. That against the president contains 167 counts. Two indictments were found in connection with the failure of the Vincennes National Bank.

An abstract of the reports made to the comptroller of the currency in October shows the total resources of the national banks in the State to be \$53,994,670, and the total liabilities the same, including individual profits, \$1,867,075, and unpaid dividends, \$32,446. The average reserve was 37.41 per cent., or about 12½ above the legal requirement. The individual deposits are \$26,495,725, and the cash on hand, aside from cash items and clearing-house exchange, amounts to over \$8,000,000.

The first report on the building and loan associations of the State gives the number as 477. The assets, including \$640,501.65 cash on hand, were, in June, 1893, \$27,538,061.94, with liabilities the same, including \$1,760,587.82 of undivided profits. The total receipts were \$17,340,856.46; the disbursements the same, including the amount of cash on hand as above. The total number of shares in force June 30, 1893,

was 680,216. The depositing members were 85,520; the borrowing members, 41,382. The authorized capital stock is \$219,144,500; the capital stock subscribed and in force, \$84,069,257.

**Industries.**—The fourth biennial report of the Bureau of Statistics gives figures based on investigations for 1891, as follow: Eight industries—namely, iron, railway-car building, wood, woolen, quarry, encaustic tiles, wagons and carriages, and glass—have an investment in buildings, grounds, and machinery of \$13,810,950; the annual cost of materials used aggregates \$24,239,919; the value of their product amounts to \$44,473,312. The whole number of establishments was 427, including mining companies. They employ 28,830 men, 1,852 boys, and 1,778 women and girls. The average daily wages of the skilled and unskilled men was \$1.85 on statements from the employers, and \$1.95 on statements of the employees.

Tables regarding the iron trade, based upon reports of 93 establishments in 17 cities, show the value of buildings in use to be \$5,543,573; annual cost of material used, \$9,568,211; annual value of manufactured products, \$19,265,997; months in operation during the year, 11.1; average per cent. of increase in wages, 4.3; average hours in day's work, 9.9. Only one city, Hammond, showed a decrease in wages, and that decrease was 8 per cent. The highest average price paid skilled labor was \$3.99 a day, and the average lowest \$1.59 a day. The average lowest paid unskilled labor was \$1.18.

In the statistics concerning the wood industry an average increase of wages of 7.45 per cent. is shown.

The bureau reports the number of pounds of wool produced in the State in 1891 as 3,443,796. The total annual value of the manufactured product was \$1,903,659, giving employment to 1,962 persons.

**Coal.**—The latest figures of the product of coal at hand are for 1891. The total product was 2,973,474 short tons; spot value, \$3,070,918. Compared with the output of 1890, the product of the Indiana coal mines in 1891 shows a decrease of 332,463 short tons and a loss in value of \$188,315. The decreased output was largely due to the three months' strike in the Brazil region; but whether this would account for so great a falling off is to be doubted. The general average price was \$1.03 per ton, an increase of 4 cents over the price in 1890. The average number employed was 5,879.

**Education.**—The apportionment of school money prepared in May gives the whole number of children between six and twenty-one as 795,113; the total amount collected and ready for apportionment, \$1,415,003.97, equal to \$1.75 *per capita*, with \$15,000 for the State Normal School, and a balance of \$8,556.22.

The superintendent is preparing a revised edition of the school laws, with special reference to protecting teachers from illegal exactions. It is said that the trustees have, in many instances, shown a willingness to bind teachers in their articles of contract down to stipulations in direct contravention of the statutes. For instance, in contracting with a teacher to teach a term of school it is generally stipulated in the articles that he shall not receive pay for certain

legal holidays, when the statute expressly affirms that he shall.

Plans were made for a new building for the Normal School, to cost \$60,000, but the Legislature appropriated only \$40,000. Under the law this money must be used for the object for which it was appropriated before Nov. 1, else it is covered into the State treasury. Therefore contracts had to be let for as much work as the \$40,000 would pay for.

**Charities.**—A memorial from the superintendents of the 4 insane hospitals was submitted to the Senate, setting forth the inadequacy of their accommodations.

In 1890 the total population of the State was 2,192,404. The ratio of insane to the total population, according to the census of the whole State, was 1 to 660. The capacity of hospitals of this State was: Central Hospital, 1,523; Southern, 390; Eastern, 435; Northern, 410. This gives a general ratio of hospital capacity to population of 1 to 869.

Notwithstanding this appeal, the Central Hospital was cut from \$260,000 for maintenance to \$220,000 a year, with the specific appropriation of \$100,000 not granted. The 3 other insane hospitals get the same for maintenance and repairs they did two years ago, with no specific appropriations. The number of insane, by the report of the State Board of Charities, is 2,767.

The Institution for Feeble-Minded Children asked \$200,000 for a new building and a farm, but received only the usual amount for maintenance, with \$2,000 for incidentals cut off.

The Blind Asylum's maintenance was cut from \$30,000 to \$25,000, while that of the Deaf and Dumb Institution was increased from \$55,000 to \$62,000. The Knightstown Home was cut on maintenance from \$95,000 to \$90,000, and did not get the extra appropriation of \$28,000 asked.

**Prisons.**—The Woman's Reformatory received an appropriation of \$40,000. The earnings and receipts of the institution amounted to \$12,795.47 during the year, leaving the net cost of maintenance \$27,204.53. An indebtedness of \$6,851.31, incurred for repairs made necessary by fire, has been canceled. The cost of maintenance for each inmate was \$169 for the year. The salaries and wages amounted to \$12,683.60, subsistence to \$7,000.65, and clothing to \$2,541.84. An inmate of the girls' department, seventeen years of age, confessed to having set the fire that burned the prison in March, 1892.

**The Grand Army.**—The national encampment of the Grand Army was held in Indianapolis, Sept. 4 to 7. The report of the Adjutant-General shows that the membership in good standing is 397,233, a net loss in the past year of 2,657. During the year there were 7,002 deaths in the order, more than in any previous year. Under the column "Expended for Charity" was reported \$178,745. Since these records have been kept there has been reported under this head \$2,500,000. The Woman's Relief Corps disbursed \$58,628. Resolutions were adopted censuring the pension legislation and administration of the Government.

The number of men in line in the procession was estimated at 22,000.

A controversy was caused in July, 1892, by the action of the commission in charge of the sol-



diers' monument in progress of building at Indianapolis, in placing the dates of the Mexican War on an astragal near the top, beside those of the war of the rebellion. Protesting resolutions were passed by encampments and army posts, a public meeting was held, the commission was petitioned, and an appeal was made to the Legislature. In April, at the State encampment, a protesting resolution was passed, with a declaration of the purpose of those represented not to support any candidate for the Legislature who would not pledge his influence to have them removed. The commission at length voted for their removal, and it was done in September.

**Legislative Session.**—The Legislature convened on Jan. 5, and adjourned on March 6. The message of the retiring Governor recommended grouping the State institutions under fewer boards of control and the appointment of at least one woman on each board; favored the movement for better roads; and made a strong appeal for State aid to the National Encampment of the Grand Army of the Republic, to be held at Indianapolis, and for appropriations for the completion of the soldiers' monument, and the State exhibit at the World's Fair. He recommended free text-books and appropriations to the higher institutions of learning under the care of the State, and the establishment of a soldiers' home.

The bill for the soldiers' home was defeated, and also the Grand Army appropriation bill, a bill to abolish the prison contract system, an antitrust bill, a bill to enable mortgages to count as a set-off in taxation, a bill to give a minority party watchers on election boards, a street-car paving bill designed to compel the railroad company of Indianapolis to bear the expense of paving between tracks, and a libel bill to relieve publishers from liability for damages if prompt retraction be made of libelous matter.

An apportionment law was passed, slightly different from that of 1891, which was declared unconstitutional by the Supreme Court. It is claimed that it will give the now dominant party a majority of 20 in the Senate and 26 in the House. A suit against the act was filed in the circuit court in November. The complaint alleges gross inequalities in the apportionment of districts; it declares that by this act

Forty-three counties are formed into 22 districts, to each of which 1 Senator is apportioned. Eleven of said districts, composed of 21 counties, contained 148,204 male inhabitants above the age of twenty-one years, while the other 11 of said districts, composed of 22 counties, contained 97,207 male inhabitants over twenty-one years of age. Said first-named 11 districts contained 50,977 more male inhabitants according to said enumeration of 1889 than were contained in said latter districts, and by such apportionment the senatorial representation of 26,984 male inhabitants twenty-one years of age of said districts, being the unit for 2 Senators with a fraction of 4,944 in excess, is wrongfully denied to the counties contained in said districts, and is given to the counties contained in said other 11 districts, whereby their representation, which of right should be but 9 Senators, is increased to 11, and the representation of said other 11 districts is reduced to 11 senators, when it should of right have been 13 Senators.

It is alleged that the act is unconstitutional in that it violates the provision in regard to the basis of Representatives prescribed for counties.

The enumeration of 1889 makes the Representative unit 5,510, so that any county having this number was entitled to one Representative, while by the act of 1893 some counties having that number were denied a separate and individual Representative, and other counties having less were accorded a Representative, and in some cases also a joint Representative with other counties. The court was therefore besought to enjoin the clerks of counties from issuing notices of an election under that act in November, 1894.

An act drawn by the Building Association League of the State was passed at its request. It is designed to shut out the national associations, and requires full reports of the local associations to be made to the State Auditor.

There was a long struggle over a bill to restore to the Governor the appointments for the State institutions. On this the Democratic majority was divided, and the Republicans voted in its favor, so that it was passed.

The general appropriation bill gave, in round numbers, \$5,025,000 for the next biennial period. Separate appropriation bills that were passed dispose of about \$200,000. Many salaries and expense and maintenance funds were increased.

A revenue tax bill cuts the school fund  $2\frac{1}{2}$  cents, and leaves the total State levy, 32 cents, divided thus: School fund,  $13\frac{1}{2}$  cents; general and institution funds, 15 cents; sinking fund, 3 cents; State University,  $\frac{1}{2}$  cent.

An act was passed repealing the clause on elections, requiring the publication of nominations. The publication of sample ballots is done away with, so that so far as appears there is no provision whatever for giving any election notices by the county clerk in general elections, or by the city or town clerks in city or town elections. As the law now stands, there is no provision for official publication of any proposed constitutional amendment.

Another act affecting elections was one abolishing the spring elections in cities not under special charters, and uniting them with the November elections, at the same time extending the terms of holding office from two to four years. It provides that officers now holding in towns coming under the law whose terms would expire in May and September, 1893, or at any other time, shall hold their respective offices till September, 1894.

Other acts passed were these:

Forfeiting subsidies to railroads where contracts are not complied with.

Preventing the discharge of employees for unionism. To raise to fourteen years the age under which children can not be employed in mines and metal factories.

To raise the age of consent to fourteen years.

Providing for six-year and life licenses for teachers.

Making first railroad liable for freight all the way through.

Permitting railroads to issue preferred stock.

Forcing biweekly payments of salary to minors.

To compel employers to provide seats for women and children in factories, etc.

To protect union labels.

The Democrats re-elected David Turpie United States Senator by a vote of 35 to 11 in the Senate, and 63 to 36 in the House, over Charles W. Fairbanks, the Republican candidate.

**The Fee and Salary Law.**—The Legislature of 1891 passed a law establishing salaries for county officers, and doing away with the fee system, in obedience to a general demand for a reform in that respect, but the operation of the law was put off for two years, thus not affecting the candidates then standing for office. Some efforts were made in the Legislature of 1893 to remedy obvious defects in the law, but nothing was done about amending it. After the adjournment of the Legislature suit was brought by the sheriff of Vigo County to compel the Auditor to pay him mileage for the transfer of prisoners to the Penitentiary, and claiming that the law of 1891, according to the provisions of which the Auditor had refused the demand, was in conflict with the provisions of the State Constitution, and therefore void. It does not appear that the Attorney-General prepared briefs in defense of the law. The decision in the circuit court was against the law.

**Court Decisions.**—The long-standing case in regard to the legality of the election of R. S. Robertson as Lieutenant-Governor in 1886 was closed in October. The defendant, A. G. Smith, the present Attorney-General, who claimed the office in virtue of his election as President of the Senate in 1885, and exercised it, drawing some part of the salary, confessed judgment for \$500, and the suit was dismissed at his costs. Details of the contest are given in the "Annual Cyclopædia" for 1887.

A suit against a saloon keeper in Indianapolis, to enjoin him from building and maintaining a saloon next to the plaintiff's residence, was first tried in the circuit court, which sustained the demurrer filed by the defendant's attorneys, maintaining that the complaint was defective. The complaint attacked the constitutionality of the liquor license laws of the State, and alleged further that the saloon was a nuisance, and should be abated. Both parties elected to try the case in the lower court on the constitutional question alone, and it was decided against the plaintiff. On appeal, the Supreme Court affirmed the decision. A petition for a rehearing was granted, and the opinion handed down reversed the former decision. This sends the case back to the circuit court. It is regarded as an important victory for the opponents of saloons, since it decides that the license does not protect the saloon keeper from suits for damages to adjacent property.

**IOWA**, a Western State, admitted to the Union Dec. 28, 1846; area, 56,025 square miles. The population was 192,214 in 1850; 1,911,896 in 1890. Capital, Des Moines.

**Government.**—The following were the State officers during the year: Governor, Horace Boies, Democrat; Lieutenant-Governor, Samuel L. Bestow, Democrat; Secretary of State, W. M. McFarland, Republican; Auditor, C. G. McCarthy, Republican; Attorney-General, John Y. Stone, Republican; Treasurer, Byron A. Beeson, Republican; Adjutant-General, George Green, Democrat; Superintendent of Public Instruction, J. B. Knocpfler; Commissioner of Labor Statistics, J. R. Sovereign; Railroad Commissioners, John W. Luke, Republican, Peter A. Dey, Democrat, George W. Perkins, Republican; Chief Justice of the Supreme Court, Gifford S. Robinson, Re-

publican; Associate Justices, Charles T. Granger, Josiah Given, and James H. Rothrock, Republicans, and L. G. Kinne, Democrat.

**Finances.**—The biennial report of the Auditor, submitted in October, gives the whole amount paid into the treasury during the two years ending June 30, 1893, on account of general revenue, as \$3,706,151.77, which, being added to the \$488,058.95, the cash in hand July 1, 1891, gave a total of \$4,194,210.72 available for current expenses. The disbursements for the same period amounted to \$3,781,229.27, leaving a balance June 30, 1893, of \$412,981.45. The monthly reports of the county treasurers, for the month of July, 1893, show that there was \$33,004.19 cash in their hands on the first day of July, 1893, belonging to the State.

**Valuations.**—The State Board of Equalization reported an increase of 7.6 per cent. on the value of land per acre over the valuation of 1891. The report rendered omitted one county, Woodbury, from which no report had been received, reserving the right to raise its value to the average, if it should fall below, or 7.6 per cent. Exclusive of that county, the number of acres was 33,845,145; the assessed value, \$285,082,014; the value per acre, \$8.42; the gain over 1891, 37 cents; the gain per cent., 5; the equalized value, \$297,616,208; equalized value per acre, \$8.66.

Tables given in the official register show the average incumbrance on farms to be \$1,319; the average rate, 7.36; the number of families owning incumbered farms, 77,111; the value, \$305,658,669; the incumbrance, \$101,745,924; and percentage of incumbrance to value, 33.29.

**Banks.**—The Auditor's report places the increase in the number of State and savings banks during the year ending June 30, 1893, at 81, the largest increase in any one year in the history of the State. The whole number of banks reported up to that date was 325, of which 148 were savings banks. The total assets of the State and savings banks were \$59,011,405.14, an increase in assets during the year of \$1,843,437.47. Of this amount, \$1,749,920 is increase in capital by reason of the organization of new banks. The total deposits June 30, 1892, were \$42,476,395.89. Those of June 30, 1893, were \$42,151,434.35, or a decrease of \$324,961.58.

The deposits in the savings banks amounted to \$25,426,031.70, and their total assets to \$34,733,976.49. By the statistics of failures of State and private banks from January to September, it appears that 28 Iowa banks suspended, and 3 resumed.

**Insurance.**—The Auditor's latest available report on insurance shows the business transacted during the year 1892. During that year 34 life-insurance companies, of which 4 were Iowa companies, and 121 fire-insurance companies, 20 of which were Iowa companies, were authorized to do business in the State.

Of the fire companies, the amount of risks written was \$253,233,462; the premiums received, \$4,268,999.55; the losses paid, \$1,734,312.39; the losses incurred, \$1,698,474.94; the percentage of losses to premiums, 40.6.

The amount of life policies written during the year was \$27,938,987; of those terminated during the year, \$21,066,987; of those in force at the end of the year, \$85,449,197. The premiums



received amounted to \$2,476,556.17; the losses incurred, to \$716,307.75; the losses paid, to \$686,444.75. The percentage of losses incurred to premiums received was 28.9.

**Mining.**—Reports of the State mine inspectors for the two years ending June 30, 1893, give the following figures: Total tons produced the first year, 4,047,479, and the second year, 4,614,875; number of miners the first year, 6,996; the second year, 7,766; value of product the first year, \$5,848,651; the second year, \$7,042,654. At the end of 1892 the number of mines was 298, in 1893 it was 337.

A State convention of coal miners held at Oskaloosa in October adopted resolutions asking that "the Secretary of the State Mine Inspectors Board be a practical miner," and that a bill be enacted to provide for the pay of "the coal miners and laborers of Iowa every two weeks, and that not more than one week's pay be kept back at any one time."

**Butter.**—Some idea of the butter product of Iowa may be gathered from the fact that it nearly equals the gross earnings of the railroads in the State each year. For the year ending June 30, 1892, the 10,000 miles of Iowa railroad earned \$37,405,171, while the butter produced during the same months was worth \$32,922,986. If the value of the milk and cheese sold be added, it will surpass the earnings of the railroads.

**Education.**—The report of the State superintendent for the biennial period ending Sept. 30, 1893, gives the total enumeration of persons of school age as 687,150, of whom 513,614 are enrolled in the public schools, with an average attendance of 324,217. There are 13,433 schoolhouses, valued at \$15,110,494, with apparatus valued at \$461,094, and libraries aggregating 122,728 volumes. Male teachers to the number of 4,837 were employed at an average salary of \$38.73 per month, and 23,464 female teachers at an average of \$30.81. The total of teachers' salaries was \$4,789,323. There were 4,328 graded and 12,387 ungraded schools, taught on an average seven months and sixteen days in the year. The average cost of tuition per month was \$1.89. The cost of schoolhouses, grounds, libraries, and apparatus during the period was \$1,303,970; fuel and other contingent expenses came to \$1,722,248; and the total expenditures, including salaries, amounted to \$7,815,541. The annual interest of the permanent fund amounted to \$229,508; the total equalized assessment of the entire State to \$565,857,799.

The State Normal School has 17 instructors and professors, and 811 students; has graduated 587 since its establishment, of whom 108 were in the classes of 1892-'93; and has an income for the year of \$27,955, exclusive of charges for board and lodging.

The report gives statistics of 13 colleges and universities in the State, with a total of 350 instructors and professors and 6,083 students. Three hundred and three baccalaureate degrees were conferred in course 1892-'93. The total income for the year, excepting 3 institutions not reported, was \$316,538, exclusive of charges for board and lodging. The benefactions reported amounted to \$120,438. This does not include Drake University, which had about \$100,000 added to its endowment fund.

The permanent school fund was \$4,663,770.42 at the beginning of the year, having been increased \$65,502.71 in 1892 from the sale of school lands, nearly all of which are now disposed of. When the direct-war-tax refund was made in 1892 the State paid \$234,948.01 of its indebtedness to the school fund, and now it owes only \$10,937.18.

**Charities.**—The expense of taking care of the insane of the State at the State hospitals for the quarter ending June 30 was \$95,956. It was divided among the 3 hospitals as follows: Independence, \$35,448; Clarinda, \$26,320; and Mount Pleasant, \$34,188. A large part of this is paid back to the State by the several counties who have patients in the hospitals. Very few of the incurables are kept at the State hospitals.

The commissioners of the Soldiers' Home at Marshalltown decided not to recommend an appropriation for more cottages. "The expense of keeping these families is considerable. Although in the matter of clothing them there has been the utmost economy in the buying, yet it costs a good deal, as the soldiers' wives were almost destitute of comfortable wearing apparel." During the past two years 566 men have been cared for, and 46 have died, at an average age of fifty-eight. The average cost per man for two years is \$150.

**Prisons.**—The January report of the reform schools showed that there were 393 boys at Eldora, and 137 girls at Mitchellville. The Auditor issued warrants for their support amounting to \$4.651—\$3,144 to Eldora and \$1,507 to Mitchellville.

The report from the State Penitentiary at Anamosa for March showed an average of 304 inmates. Warrants were drawn for \$3,045.65 for support, \$639.67 for improvements, and \$2,525 for salaries of officers and guards.

The Fort Madison Penitentiary showed in March an average of 420 convicts. The Auditor issued a warrant to this institution for \$2,556.67 for salaries of officers and guards. Investigation was made of the affairs of both prisons, which resulted in the suspending of the warden at Fort Madison, the committee finding that the surplus fund arising from loss of time by guards was not satisfactorily accounted for.

**Destructive Cyclone.**—Dreadful havoc was caused by a cyclone that swept over northwestern Iowa July 6. The greatest destruction was at Pomeroy, a town of 900 inhabitants, where only 9 houses were left standing unmarred. A relief committee was immediately appointed, and help for the suffering was sent from all parts of the State. The report of the committee, rendered in October, showed a total of 71 deaths from the cyclone. In all \$69,761 in cash was contributed, besides lumber, brick, etc. The committee restored 100 homes, and furnished complete relief to 150 homeless families. The total property loss is finally placed at \$250,000.

**Outrage in Muscatine.**—A monstrous crime was committed in Muscatine in May. A large can of powder was exploded in the cellar of each of the houses of Hon. John Mahin, editor of the Muscatine "Journal"; E. M. Kessinger, retired capitalist; and N. Rosenberger, attorney. The interiors of all the dwellings were completely wrecked and the escape of their 15 sleeping occu-

pants from death seems miraculous. The owners of these residences were prosecuting the saloon keepers, against whom injunctions had been granted. The county supervisors offered a reward of \$2,000 for the apprehension of the perpetrators, and the citizens raised by subscription nearly \$5,000 more. Subscriptions were also taken to assist in rebuilding the wrecked houses, and the mayor and council were called upon to close immediately all saloons. They were all closed within four days. Citizens of other parts of the State assisted in raising the fund for rebuilding and refurnishing the homes.

**Judicial Decisions.**—A case to test the constitutionality of the medical-practice act and the pharmacy law was brought before the Supreme Court by the Eclectic Medical College of Des Moines to compel the State Board of Medical Examiners to grant certificates to its graduates allowing them to practice. The judgment of the lower court dismissing the petition was affirmed, the decision thus sustaining the State law.

A decision in regard to taxation of church property not used for church purposes was rendered in the case of a lot bought by a congregation with the expectation of building a church upon it. Afterward the congregation decided not to use it, and built in another place. To assist in the erection of the church the property in question was mortgaged for \$5,000. The petition says that the church intends to sell the property and use the proceeds to liquidate the debt of the church. The property was assessed by the assessor for taxation, and the board of supervisors refused to remit the taxes. The church refused to pay; as a consequence it was sold for taxes, and the church wanted the county treasurer restrained from issuing a tax deed. The defendant demurred to the petition, and the demurrer was sustained, the court deciding that the intention to use the proceeds arising from the sale for church purposes in no manner bears upon the present uses of the property, which is held for the purpose of sale, and hence can not claim exemption under the statute. The church will appeal to the Supreme Court.

An action was brought by the taxpayers of Lyon County to enjoin the payment of \$120,000 of county bonds, issued at a time when the constitutional limit of taxation was \$71,876.35. The action was begun in 1887. The defendants in this case were bondholders who joined in the issues in the district court. The court holds that the bonds are all void because issued at a time when the indebtedness of the county was far in excess of the constitutional limit. The remedy of the bondholders to recover what they are entitled to, the court says, is to bring action against the county.

The question of the right of the Governor to remit costs came up before the Supreme Court on appeal. Bonds were given for the appearance of a man indicted for keeping a liquor nuisance. He went away and the bond was declared forfeited. Gov. Boies remitted the judgment. The county attorney then made a showing of the costs in the case and the amounts due him as commissions and attorney's fees in the case, and demanded that the bondsman should be held for the amount due Harrison County and the county attorney as costs. This

was sustained by the district court. The question raised in the appeal is as to the authority of the Governor to remit costs and attorney's fees. The Supreme Court holds "that others, and not the public, own the costs; that the Governor, in his acts of remission, represents the public and can only remit that which, under the law, goes to the public."

**Political.**—Four tickets were put into nomination for the election of State officers Nov. 7.

The Republican convention met at Des Moines Aug. 16. The platform asserted that

The campaign claims of the Democratic party in the election of 1892 have proved false, and the claims made by the Republican party proved true. Not an allegation made by the Democratic party as to the McKinley law or reciprocity, not a claim of the vaunted good results of the Democratic success, has come true; but in the withholding of the pensions of Union soldiers, in business paralysis, in mills and manufactories closed, in suspended banks, in bankrupted firms, in the distress of farmers, in the growing multitude of tramps, in falling wages of thousands of working people discharged from employment, in the monetary stringency, in the prevailing hard times and public distress, are the fulfillment of what Republicans predicted with historic warrant, as to the known capacity of the Democratic party to distress and afflict the American people.

When President Cleveland said, in his recent message to Congress, that our unfortunate financial plight, with the evil conditions he depicted, are principally chargeable to congressional legislation touching the purchase and coinage of silver by the General Government, he omitted the largest producing cause. This is the sinister effect of the threatened Democratic attempt to overthrow protection and a protective tariff, as embodied in that wise measure known as the McKinley law, and so close American manufactures and overwhelm the industries that give profitable employment to American capital and American labor.

It declared in favor of maintaining both gold and silver as tender for the paying of debts, and that Congress should provide for equal values in gold, silver, and paper dollars; it declared opposition to State-bank money, and denounced a "cheap and depreciated money of low purchasing power as an especial hardship upon the poor and all who receive wages." It commended the administration of President Harrison, and condemned the pension policy of the present Administration. On the issue of prohibition the platform declared that

Prohibition is no test of Republicanism. The General Assembly has given to the State a prohibitory law as strong as any that has ever been enacted by any country. Like any other criminal statute, its retention, modification, or repeal must be determined by the General Assembly, elected by and in sympathy with the people, and to them is relegated the subject to take such action as they may deem just and best in the matter of maintaining the present law in those portions of the State where it is now or can be made efficient, and give to the localities such methods of controlling and regulating the liquor traffic as will serve the cause of temperance and morality.

The ticket nominated was: For Governor, Frank D. Jackson; for Lieutenant-Governor, Warren S. Dungan; for Railroad Commissioner, John W. Luke; for Superintendent of Public Instruction, Henry Sabin; for Judge of the Supreme Court, Gifford S. Robinson.

The Democratic convention was held at Des Moines Aug. 23. The platform declared in favor of tariff reform, and urged Congress to give "the



country early relief, having in view a permanent, stable, honest, and equitable revenue system." It denounced the McKinley tariff and the Sherman act, demanding the immediate repeal of the silver-purchasing clause, declared in favor of both gold and silver as the standard money of the country, and

The coinage of both gold and silver without discriminating against either metal or charge for mintage, but the dollar unit of coinage of both metals must be of equal intrinsic and exchangeable value, or be adjusted through international agreement, or by such safeguards of legislation as shall insure the maintenance of the parity of the two metals and the equal power of every dollar at all times in the markets and in payment of debts, and we demand that all paper currency shall be kept at par with and redeemable in such coin.

It commended the administration of President Cleveland, and expressed faith in his intentions and his policy.

On pensions and prohibition the platform declared as follows:

We favor just and liberal pensions to deserving veterans, and in their interest we urge that the names of all fraudulent and illegal pensioners be eliminated from the rolls, but the pension of no worthy soldier should be disturbed.

We demand, in the interest of true temperance, the passage of a carefully guarded license-tax law, which shall provide for the issuance of license in towns, townships, and municipal corporations of the State by a vote of the people of such corporations and which shall provide that for each license an annual tax of \$500 be paid into the county treasury, and such further tax as the town, township, or municipal corporation shall provide.

The nominations were: For Governor, Horace Boies; for Lieutenant-Governor, Samuel L. Bestow; for Railroad Commissioner, Thomas Bowman; for Superintendent of Public Instruction, J. B. Knoepfer; for Judge of the Supreme Court, John Claggett.

The People's party held its convention Sept. 5. The platform declared that there are two parties only—the People's party, and the Gold party. It approved the South Carolina method of liquor control, and declared in favor of woman suffrage; favored the election of President and Vice-President by direct vote of the people, and demanded taxation of mortgages. The principal emphasis was placed on the silver question:

The one overshadowing, all-absorbing issue before the American people to-day is the question whether the debtors of the United States shall be allowed to pay their debts in the money of the Constitution, or whether their homes and property shall be confiscated for the benefit of pirates. The only party that votes as a unit against the tricks of the millionaires is the People's party.

The nominees of the convention were: For Governor, J. M. Joseph; for Lieutenant-Governor, E. A. Ott; for Railroad Commissioner, John Idle; for Superintendent of Public Instruction, Mrs. E. J. Woodrow; for Judge of the Supreme Court, A. W. C. Weeks.

The Prohibition party held a convention May 31, and adopted resolutions declaring

That the paramount issue in State and national politics at this time is the annihilation of the traffic in intoxicating drinks.

That the prohibitory law of Iowa should be maintained and strengthened by provisions for enforcement by State power in localities where it is persistently nullified or criminally neglected.

It further censured the pharmacy law as amended, and called for a law making 2 cents a mile the maximum for passenger rates on railroads, favored woman suffrage, tariff for revenue only, suppression of trusts, unrestricted immigration, the abrogation of the extradition treaty with Russia, an antioption law, and free coinage, the silver dollar being made to contain a dollar's worth of metal. The nominations were: For Governor, B. O. Aylesworth; for Lieutenant-Governor, J. C. Reed; for Railway Commissioner, D. H. Gillet; for Superintendent of Public Instruction, Belle H. Mix; for Judge of the Supreme Court, J. A. Harvey.

Dr. Aylesworth is President of Drake University, and withdrew from the canvass, on the ground that the university needed all his time. Bennett Mitchell was then made the nominee for Governor.

The Citizens' State Temperance Convention, opposed to the Republicans on the prohibition issue, put L. S. Coffin in nomination for Governor, but made no other nominations. Mr. Coffin withdrew, and the name of Bennett Mitchell was substituted. The Secretary of State refused to print this nomination and the Republican nominations for other offices on a ticket to be called the "Citizens' Republican Prohibition Ticket," on the decision of the election board that it was against the law.

The election resulted in a victory for the entire Republican ticket. Jackson, for Governor, received a total of 207,159 votes; Boies, 174,793; Joseph, 23,511; and Mitchell, 10,107.

A large number of votes were thrown out on account of being defective, under the Australian-ballot system, 271 voters in Polk County alone losing their votes in this way.

**ITALY**, a constitutional monarchy in southern Europe. The Chamber of Deputies consists of 508 members, elected, in the proportion of 1 to 57,000 inhabitants, by male citizens twenty-one years of age who can read and write and pay 19-80 lire or franes in direct taxes, or have served in the army two years, or possess certain special educational or other qualifications. Soldiers in active service do not vote. Government officials, except certain high functionaries and officers of the army and navy, not to exceed 40 altogether, are not eligible, nor are ordained priests. The second Chamber, called the *Senatus*, is composed of men who have attained distinction in some pursuit, or occupy high offices, or pay 3,000 lire of taxes. Senators are nominated for life by the King. They must be at least forty, and Deputies thirty years of age. The King exercises the executive powers through his responsible ministers. The reigning King is Umberto I, born March 14, 1844, who succeeded his father, Vittorio Emanuele, Jan. 9, 1878. The heir apparent is Vittorio Emanuele, Prince of Naples, born Nov. 11, 1869. The Cabinet in the beginning of 1893 consisted of the following ministers: President of the Council and Minister of the Interior, Giovanni Giolitti; Minister of Foreign Affairs, Benedetto Brin; Minister of the Treasury and Minister of Finance *ad interim*, Bernardino Gri-

maldi; Minister of Justice and Ecclesiastical Affairs, Teodorico Bonacci; Minister of War, Gen. Luigi Pelloux; Minister of Marine, Admiral Racchia; Minister of Commerce, Agriculture, and Industry, Pietro Lacava; Minister of Public Instruction, Ferdinando Martini; Minister of Public Works, Francesco Genala; Minister of Posts and Telegraphs, Camillo Finocchiaro Aprile.

**Finances.**—The budget estimate of revenue for the year ending June 30, 1893, was 1,666,122,-471 lire; the estimate of expenditure, 1,694,275,-629 lire. The total ordinary receipts were estimated at 1,528,913,851 lire, of which 233,306,875 lire were derived from the income tax, 231,000,-000 lire from customs, 193,000,000 lire from the tobacco monopoly, 106,342,000 lire from the land tax, 84,000,000 lire from the house tax, 76,130,-000 lire from the state lottery, 73,300,000 lire from stamps, 73,299,800 lire from Government railroads, 69,023,244 lire from octrois, 63,500,000 lire from the salt monopoly, 62,700,000 lire from registration dues, 49,000,000 lire from the post-office, 36,300,000 lire from succession duties, 36,-179,337 lire from repayments, 33,000,000 lire from excise duties, 29,140,550 lire from various taxes on transactions, 18,450,000 lire from the tax on railroads, 15,100,000 lire from telegraphs, 11,180,208 lire from state property, and about 36,000,000 lire from other sources. The total ordinary expenditure was estimated at 1,546,626,-357 lire, of which 450,155,182 lire were for interest on the consolidated debt, 91,292,413 lire from the floating debt, 78,959,282 lire for interest on the redeemable debt, 27,711,540 lire for railroad annuities, 15,050,000 lire for the civil list and appanages, 73,462,820 lire for fixed annuities, 148,-010,943 lire for expenses of collection, 243,058,-765 lire for war, 100,735,465 lire for the navy, 53,750,786 lire for the Interior Department, 52,-640,903 lire for posts and telegraphs, 39,451,578 lire for public instruction, 33,161,186 lire for the Department of Justice, 29,303,831 lire for public works, 9,605,534 lire for the Department of Commerce and Agriculture, and 8,469,207 lire for foreign affairs. The extraordinary expenditures of the Ministry of Public Works were set down as 76,979,780 lire; of the Ministry of Marine, 6,875,-000 lire; of the Ministry of War, 4,450,000 lire. The capital of the consolidated and redeemable debt amounted in the beginning of the financial year to 11,979,718,057 lire. The total interest charge was 584,658,951 lire.

**The Army.**—The permanent army in 1892 had a total strength of 247,809 officers and men under arms, comprising 14,448 effective officers and 191 on half pay, 107,249 regular infantry, 22,739 cabineers, 13,114 bersaglieri, 8,828 Alpine troops, 10,257 infantry attached to the military districts, 24,131 cavalry, 30,970 artillery, 7,604 engineers, 1,437 men attached to military schools, 2,320 sanitary troops, 1,868 commissariat troops, 229 men in invalid and veteran corps, and 2,424 in penal establishments and disciplinary companies. There were 5,279 officers and 594,181 men of all arms enrolled in the permanent army who were on unlimited leave of absence. The mobile militia numbered 6,348 officers and 525,-179 men, and the territorial militia 10,756 officers and 1,940,322 men. There is a special corps of African troops which consisted on June 30,

1892, of 215 European and 32 native officers and 6,122 men, of whom 3,795 were natives.

**The Navy.**—The "Italia" and "Lepanto" were, until the "Royal Sovereign" and her sister ships were added to the British navy, the heaviest war ships in the world, having a displacement of 13,896 and 13,550 tons respectively. They have no belt of armor, as all the vital parts are below water, protected from a plunging fire by steel deck armor, which is 6 feet below the water line. The citadel is protected with inclined armor 19 inches thick. The four 100-ton guns with which each is armed are mounted *en barbette*. The "Lepanto" has a speed of 18.4 knots; the "Italia," 17.8 knots. Of the same class and type is the "Re Umberto," which carries 68-ton guns; also the "Sardegna" and "Sicilia," not yet completed. Each of these vessels cost about \$5,000,000 to build and equip. The "Duilio" and "Dandolo," of 11,138 and 11,202 tons displacement, are central-citadel ships armed with 4 100-ton guns each, and having 22 inches of armor on the citadel. The barbette ships "Lauria," "Francesco Morosini," and "Andrea Doria" have a displacement of 11,000 tons and 18 inches of armor at the water line. Four old broadside ships under 3,000 tons, with 4½-inch side armor and 4- and 3-ton guns, and a turret ram, complete the list of battle ships of the first class, besides one building of 13,090 tons displacement. The 11 turret ships have a total armament of 168 guns over 10 centimetres, and 366 smaller guns. There are 12 deck-protected cruisers, launched between 1883 and 1893, carrying 114 heavy and 219 small cannons; 4 corvettes, armed with 24 heavy and 63 light cannons; 12 torpedo cruisers, launched between 1886 and 1893; 8 dispatch vessels and 7 torpedo avisos; 9 first-class and 4 second-class gunboats, 75 seagoing torpedo boats, 38 first-class and 21 second-class torpedo boats, 14 torpedo launches, 15 transports, 6 school ships, 8 coast guards, 8 auxiliary cruisers, 6 paddle-wheel gunboats for the lagoons, and 13 vessels for harbor service. There are 4 deck-protected cruisers, 1 torpedo cruiser, and 12 seagoing torpedo boats under construction. The navy is manned by 1,458 officers and 17,871 men, besides 4,090 for coast defense. It was decided in 1893 to add 2,000 men.

**Navigation.**—The merchant navy, on Jan. 1, 1892, numbered 6,624 vessels, of 811,264 tons, of which 6,308, of 609,821 tons, were sailing vessels, and 316, of 201,443 tons, were steamers. During 1892 there were 121,099 vessels, of 23,043,131 tons, entered at Italian ports, and 119,895, of 23,297,089 tons, cleared. Of the vessels entered, 15,813, of 6,953,106 tons, were engaged in foreign trade, of which 9,348, of 1,851,483 tons, were Italian, and 6,465, of 5,101,623 tons, were foreign. Of these there were entered with cargoes 13,392, of 6,408,371 tons, and the number of steamers was 6,195, of which 1,434, of 1,266,499 tons, were Italian.

**Commerce.**—The total value of the special imports for 1891 was 1,126,584,582 lire, and of the special exports 876,800,155 lire. The imports of precious metals were 54,286,700 lire, and the exports 62,709,400 lire. For 1892 the special imports amounted to 1,173,400,000 and the special exports to 958,200,000 lire. The imports of precious metals were 44,000,000 and the exports



53,900,000 lire. The values, in lire, of the principal imports in 1892, compared with the values in 1891, are given in the following table:

IMPORTS.	1891.	1892.
Cereals .....	127,000,000	167,200,000
Raw silk .....	60,400,000	101,800,000
Coal .....	101,800,000	95,000,000
Cotton .....	97,400,000	92,700,000
Hides and skins .....	43,900,000	42,600,000
Woolen goods .....	49,400,000	42,400,000
Iron .....	43,600,000	40,800,000
Cotton goods .....	39,000,000	34,900,000
Coffee .....	31,800,000	32,500,000
Sugar .....	28,800,000	30,400,000
Fish .....	28,500,000	29,100,000
Timber .....	36,200,000	29,100,000
Machinery .....	27,800,000	26,600,000
Wool .....	25,500,000	25,000,000
Colors and dye stuffs .....	21,800,000	24,700,000
Silk manufactures .....	20,700,000	22,600,000
Chemical products .....	22,500,000	20,700,000
Animals .....	21,800,000	20,700,000
Gums and resins .....	18,100,000	19,500,000
Tobacco .....	15,200,000	16,600,000
Seeds .....	17,600,000	15,800,000
Petroleum .....	14,200,000	14,800,000
Cheese .....	14,000,000	13,700,000
Linen yarn .....	12,700,000	13,200,000

The values of the principal exports for 1891 and 1892 were as follow:

EXPORTS.	1891.	1892.
Silk .....	268,100,000	325,500,000
Olive oil .....	62,500,000	60,300,000
Wine .....	40,500,000	56,200,000
Onions, etc. ....	24,200,000	30,600,000
Sulphur .....	29,600,000	29,100,000
Hemp and flax .....	24,100,000	28,000,000
Eggs .....	22,800,000	23,200,000
Wood manufactures .....	13,100,000	21,100,000
Butter and cheese .....	17,800,000	19,700,000
Coral manufactures .....	17,700,000	18,600,000
Silk fabrics .....	16,300,000	17,900,000
Cotton .....	19,200,000	17,500,000
Skins .....	20,300,000	16,500,000
Marble and alabaster .....	16,500,000	15,300,000
Tartar .....	17,300,000	15,000,000
Almonds .....	20,500,000	15,000,000
Zinc ore .....	13,600,000	14,300,000
Fruits .....	10,500,000	12,700,000
Animals .....	21,800,000	11,500,000
Rice .....	11,000,000	9,700,000

The following table shows the amount of trade with the principal foreign countries in 1892, compared with the trade in 1891, the values being given in lire:

COUNTRIES.	1891.		1892.	
	Imports.	Exports.	Imports.	Exports.
England .....	262,300,000	117,400,000	244,600,000	113,200,000
France .....	190,100,000	196,300,000	168,500,000	147,100,000
Germany .....	135,900,000	133,700,000	143,900,000	145,500,000
Austria-Hungary .....	128,000,000	98,200,000	122,300,000	105,800,000
Switzerland .....	47,600,000	154,600,000	49,500,000	173,200,000
United States .....	73,700,000	73,600,000	78,800,000	100,200,009
Russia .....	89,700,000	13,300,000	124,200,000	10,200,000
British India .....	91,700,000	13,600,000	66,300,000	14,600,000
Belgium .....	25,300,000	23,200,000	27,200,000	24,400,000
Argentine Republic .....	11,800,000	24,600,000	20,500,000	25,900,000
Turkey in Europe .....	26,100,000	15,300,000	26,000,000	15,200,000
Egypt .....	20,000,000	7,600,000	18,500,000	10,700,000
Spain .....	9,700,000	11,700,000	9,200,000	10,900,000
Central America .....	9,700,000	900,000	14,200,000	500,000
Romania .....	9,100,000	800,000	12,500,000	500,000
Turkey in Asia .....	2,300,000	1,500,000	5,600,000	3,100,000
Malta .....	900,000	11,300,000	1,000,000	9,700,000
Australia .....	200,000	1,600,000	100,000	1,100,000
Other American countries .....	16,500,000	8,400,000	9,400,000	15,900,000
Other African countries .....	7,200,000	9,100,000	5,800,000	10,500,000
Other Asiatic countries .....	2,900,000	900,000	7,500,000	700,000
Other European countries .....	20,200,000	21,900,000	17,800,000	19,200,000
Total .....	1,180,900,000	939,500,000	1,173,400,000	958,200,000

**Session of Parliament.**—The ministerial programme for 1893 included the renewal of subventions for the foreign and coasting steam navigation lines, which expired on March 15; a law for promotions in the army, which fixed the age of retirement; a law for consolidating the banks of issue; a divorce law, and one requiring civil marriage previous to a religious ceremony; and a law for the payment of civil and military pensions. The first of these bills passed the Chamber on March 2. The second was rejected by the Senate, and was withdrawn. The Pension bill was intended to relieve the budget of the charges for workmen's pensions by transferring the business to the Loan and Deposit Bank. The bill for requiring civil marriage had a useful object, because cases were frequent of men deserting wives after marrying them in church, but not completing the contract by a civil marriage. The Minister of Justice, Teodorico Bonacci, offended the Clericals by presenting this and the Divorce bill, and the Liberals because he did not press them. On May 19 the Chamber rejected the estimates of the Ministry of Justice as a rebuke to the Cabinet for its financial policy, and to this minister in particular on other grounds. The Cabinet resigned as a body, but the King declined to accept the resignation of any except the Minister of Justice, and requested the Premier to fill his place and the Ministry of Finance, which was held provisionally by Grimaldi, the Minister of the Treasury. Two Senators were selected, on May 24, for the vacant portfolios—Judge Eula as Minister of Justice, and Gagliardo as Minister of Finance. The Pension bill passed the Senate on June 2. On the resignation of Eula the portfolio of Justice was given to Santamaria. An important reform contemplated by the ministry was the suppression of several small universities, and their consolidation with those that are well equipped and prosperous. There are 17 state universities and 4 free universities, supported by provinces and communes, besides the Milan Academy for Philological and Literary Studies, and the Florentine Institute, which lacks only the law department. All these institutes have authority to grant diplomas, and some of them create advocates and physicians on very easy

conditions. The number of students varies from 49 in the Free University of Ferrara to 4,074 in the University of Naples, the number of professors from 4 at Macerata to 60 at Naples. The whole continental portion of the former Kingdom of the Two Sicilies has only this one university, while the island of Sicily has one at Palermo with 1,125 students, another at Catania with 454, and a third at Messina with 203. The University of Rome, with 82 professors and tutors and 1,297 students, serves for the rest of southern Italy. Tuscany has the Universities of Pisa, with 596, and Siena, with 169, and the Institute of Florence, with 434 students; Umbria has the Free University of Perugia, with 119 students; in the Marches, Macerata has 91 students, and the free universities of Camerino and Urbino 93 and 79 respectively; in Emilia, besides Bologna, with 1,245 students, there are the Universities of Parma, with 238, Modena, with 319, and the insignificant free university at Ferrara. In the north of Italy, Piedmont, Liguria, Lombardy, and Venetia have each a well-visited Government university, Turin having over 1,400, Genoa 940, Pavia some 1,100, and Padua 1,200 students. On the island of Sardinia, where education is so backward that 66 per cent. of the recruits are unable to read, there are 2 universities—one at Sassari, with 136, and one at Cagliari, with 119 students. Minister Martini's plan of organic reform, which included the granting of corporate rights to the universities, the improvement of the official status of the professors, and the extension of the live universities by amalgamating some of the weak ones with them, roused such opposition—particularly in Messina, Sassari, Siena, and Modena—that the reform was once more put off for fear of offending local pride.

**Bank Scandals.**—There are 6 banks in Italy authorized by statute to issue bank notes. Their notes constitute the main currency of the country, the only other money being small bills issued by the Government, amounting in 1891 to 341,949,000 lire, the silver and bronze subsidiary currency, and whatever gold is retained with the paper at a heavy discount. The amount of bank notes in circulation at the beginning of 1892 was returned as 1,121,601,000 lire. The assets of the 6 issue banks at that date were officially stated to be 3,363,297,000 lire, and the liabilities 3,355,357,000 lire. Before calling for a decision on the question of renewing the privileges of these banks for six years more, the Government ordered an official inquiry into their condition and management.

The fact that the Banca Romana had exceeded its legal issue of bank notes by 62,000,000 lire was known after the arrest of its president, who was charged furthermore with publishing false balance sheets, and with counterfeiting in having manufactured in London 40,000,000 lire more of bank notes, with which he intended to cover up the cash deficit of the bank, and putting some of the bills in circulation. On Jan. 27, Antonio Monzilli, director of the credit office in the Ministry of Agriculture and Commerce, was arrested on the charge of embezzlement and falsification. The judicial inquiry showed that a conspicuous member of the Right, the Deputy Rocco de Zerbi, had at various times received money from the Roman Bank, amounting to 400,000 lire. On

application being made for the Chamber to permit his arrest, he declared that he courted a criminal trial; but before he could be arrested he died, it was supposed, by his own hand. Baron Michele Lazzaroni, a man of reputed wealth, popular among Romans, and a favorite at court, was arrested as an accomplice of his uncle, Cesare Lazzaroni, and was accused also of having opened false current accounts and fraudulently obtaining large sums in the name of an artist named Peralta, who was arrested afterward. Pietro Tanlongo, until he too was arrested, carried on a clandestine correspondence with his imprisoned father, and instructed him in the pretended revelations that he made in his answers to the judge. The letters were concealed in loaves of bread sent to the prisoner, and as soon as he began to receive them Bernardo became loquacious and told of giving Depretis 3,000,000 lire for electoral purposes in 1887, and 152,000 lire to Giolitti, Lacava, and Grimaldi in the last elections. When, besides Giolitti and the Marquis di Rudini, he implicated Crispi, the latter joined in the demand for a parliamentary inquiry. A budget of incriminating documents, which was called Tanlongo's *libro d'oro* ("golden book"), was found by the police. Crispi's name was involved not only in the *Panamino* ("little Panama"), as the Italian scandal was humorously named, but at the same time in the French Panama, as his name was found in one of Reinach's lists as the recipient of a check for 50,000 francs in March, 1891. This was explained satisfactorily by the fact that he was the attorney of Reinach's firm and trustee of property in Italy belonging to the Reinachs. It came out that among the unpaid acceptances of the Banca Nazionale was a note of his for 175,000 lire, which he had borrowed as proprietor of the "Riforma" newspaper. This note was eventually taken up with money given by King Umberto, who was believed to have sacrificed 4,000,000 lire of his private fortune for the purpose of releasing public men from similar debts to the banks. Nicotera, who is honored as one of the heroes of the war of independence, found himself in a more embarrassing situation than Crispi. Tanlongo had letters from him asking for money, which he would fetch himself, and in the banker's handwriting was a remark about 150,000 lire obtained from the bank, and alleged to have been paid out by Nicotera for the Government. The examiner explained that he had borrowed 44,000 lire from the Banca Romana, and 135,000 from the Banca Nazionale, to aid an institution in which his sister was interested, and had redeemed his notes on entering the Rudini Cabinet out of a loan obtained from his friend, the Marquis de Medici, whom he owed also 50,000 lire.

Orsini, who conducted the official examination of the banks, reported that the Banca Romana had issued 64,500,000 lire of bank notes beyond the legal limit of 73,000,000 lire. Four fifths of the commercial paper held by the bank was overdue and unsecured. There was a cash deficit of 28,600,000 lire unaccounted for except by fictitious accounts current recently opened in the names of unknown individuals, Tanlongo's account being represented as overdrawn by over 4,000,000 lire, Lazzaroni's by an equal sum, and that of Prince Torlonia to a large amount.



The criminal court on June 13 found Cuciniello guilty of embezzling 2,450,000 lire from the Bank of Naples with the connivance of D'Alessandro, the cashier, and sentenced the one to ten, the other to six years of imprisonment. On July 15 the examining judge discharged all except eleven of the persons arrested for fraud and corruption in connection with the Banca Romana, and of these, 4 were discharged for lack of evidence by the Court of Appeal on Sept. 21. This latter decision, by which Pietro Tanlongo and Michele Lazzaroni escaped trial, was regarded as disgraceful by the public, and such was the indignation at the supposed bargain to purchase the silence of the older prisoners that the district attorney took an appeal, which was denied by the Supreme Court. Bernardo Tanlongo, Cesare Lazzaroni, Antonio Monzilli, the Government supervisor of banks, Lorenzo Zammarrano, Gaetano Belluci-Sessa, a lawyer who had acted as agent in Tanlongo's briberies, and two employees of the bank named Agazzi and Toccafundì were held for trial.

An investigating committee of 7 Deputies of unimpeachable honesty and patriotism selected from all parties concluded its work during the vacation. When the new session opened, on Nov. 30, the reading of the report was demanded as soon as the house was called to order. Among the men censured were Minister Grimaldi, Under-Secretary Count Michele Amadei, Augusto Elia, Baron Nicotera, Alessandro Narducci, Luigi Niceli, Duke Gennaro di San Donato, Pietro Delvecchio, Filippo Cavallini, Francesco Montagna, Luigi Simonetti, and Bruno Chimirri. The committee recorded its disapproval of Premier Giolitti, who knew of the bank's irregularities as early as 1889; of ex-Premier Crispi, of Miele, and of Prof. Luigi Luzzatti, formerly Minister of Finance, who were all cognizant of the condition of the bank. Urbano Rattazzi, Minister of the Royal Household, was found to have borrowed largely from the bank, and consequently he had already been dismissed. Pietro Lacava, the Minister of Commerce, was reproved severely for not having made a thorough inspection and for keeping from the Legislature the facts that he knew.

**Change of Ministry.**—The reading of the report produced a tumult that compelled the President, Giuseppe Zanardelli, to suspend the sitting amid the volley of furious invectives and insults that were hurled at the ministers. Gioletti and his colleagues, who had commanded a large majority when the Chamber was adjourned, were forced into an unprecedented act by the novel situation. They at once presented their resignation to the King, and when the Chamber met on the following morning declared that they would meet their assailants as members of Parliament, not as ministers discredited before the country by suspicions of malfeasance and dishonesty. The Radicals charged them with seeking to evade impeachment, and amid general disorder the session was again suspended. There was no leader of a majority on whom the King could call because the ministry had retired without being regularly assailed, and so the King asked Giuseppe Zanardelli, President of the Chamber, to form a ministry. Zanardelli tried to effect a combination on a

broad nonpartisan basis that would include Sonnino, the leader of the Center, and Fortis, the Radical leader, and when this failed he almost succeeded in getting together a Cabinet drawn entirely from the Left, but was finally compelled to confess his failure to the King, who on Dec. 5 sent for Crispi. On Dec. 14 the Cabinet was constituted as follows: Francesco Crispi, Premier and Minister of the Interior; Baron Blanc, Minister of Foreign Affairs; Baron Giorgio Sonnino, Minister of Finance and Minister of the Treasury *ad interim*; Giuseppe Sarrocco, Minister of Public Works; Andrea Calenda di Tavani, Minister of Justice; Gen. Stanislao Mocenni, Minister of War; Admiral Constantino Morin, Minister of Marine; Augusto Baeeli, Minister of Education; Paolo Boselli, Minister of Agriculture; Count Luigi Ferraris, Minister of Posts and Telegraphs.

**Monetary Difficulty.**—The year 1893 was marked by financial and monetary disturbances resulting from a complication of causes to which the bank exposures were only contributory. The financial position of the Government was really better than ever, inasmuch as the deficit was nearly, if not quite extinguished, the budget for 1893 showing on its face an actual surplus of 7,000,000 lire. The Government was thus relieved of the necessity of placing bonds abroad; but to strengthen its position it had been obliged to reduce the expenditure on new railroads from 266,000,000 to 29,000,000 lire and expenditure in other departments also, which contributed to the general dullness of trade. An excess of imports over exports depleted the gold reserves, leaving the Government no stock to draw on for payment of the interest on the debt held abroad. At the same time the French were unloading their large holdings of Italian *rentes* in order to invest in Russian Government bonds at a faster rate than they could be absorbed in Italy in the existing state of the money market. The fall in *rentes* resulting from this injured public and private credit had made it more difficult for individuals to buy back the securities, and for the Government to obtain 120,000,000 to 150,000,000 lire in foreign money to meet its obligations abroad. About 600,000,000 lire of the Italian stock held in France were repurchased by Italians. These operations were rendered more difficult and costly when, as a natural result of the monetary situation, gold rose to a premium of 5, then 10 or 12, and finally 20 per cent. The premium was only partly due to the illegal excessive issue of bank notes, because these notes were all guaranteed by the Government. In the spring silver also rose to a premium and speculators made a profit by exporting the fractional currency which was legal tender in any country of the Latin Union. In a short time silver vanished from circulation, and then even bronze coins were bought up and held for a premium. Ordinary business was paralyzed for want of small change. Some firms struck token coins; others accepted halves and quarters of the 5- and 10-lira notes of the Government, which also commanded a premium; and others issued their printed notes of the value of a lira, against which they deposited sums in banking institutions. The efforts of the Government to stop the exportation of silver by making it a misdemeanor

had little or no effect. The Government ordered the coinage of 10,000,000 lire of bronze pieces and the issue of 30,000,000 lira notes, and meanwhile entered into negotiation with the members of the Latin Union for the nationalization of small silver money. The French Government ordered an estimate of the amount of Italian fractional currency in France, and requested bankers and others to separate them and pay them in at the treasury, by which means a large quantity was obtained and remitted to the Italian Government. The French Government also convened a conference of representatives of the Latin Union at Paris for the purpose of deciding the question of nationalizing small silver coins, Belgium, Greece, and Switzerland having expressed a willingness to consider the matter. The conference decided to release the Italian fractional currency from the conditions of the convention, and to return the small coins to Italy on condition that no more fractional paper should be issued than the amount of the coin received, and that the silver coinage should not exceed 6 lire *per capita* as provided in the treaty.

**Sicilian Disturbances.**—The popular discontent and lawlessness in the island of Sicily was a reason even more imperative than the financial dilemma for calling back the Sicilian statesmen to the head of the Government. The south of Italy, especially Sicily, suffered keenly from the general economical distress that followed upon the tariff war with France. Socialistic leaders sprang up who taught the people there that they had specific grounds for desiring a social revolution and formulated demands that were caught up by the whole laboring and farming population. The land of the island belongs to absentee landlords who deal with the people mostly through agents, and the exactions have been felt as an oppression for ages. The taxes too are not willingly paid, and neither the authority nor the cost of the Central Government is as easily borne in this part of Italy as in other provinces. The vexatious *octroi* duties bear with exceptional severity on the Sicilians, though much of the money collected is diverted from its legitimate destination. The working people of the island who imbibed labor, anti-rent, and antitax ideas formed themselves into a socialistic society composed of little groups called *Fasci dei Lavoratori*, which first clamored for higher wages and improved conditions for labor. Brigandage and lawlessness reappeared as a consequence of privation and discontent. The symptoms of disorder began to manifest themselves when Giolitti became Premier. Before the beginning of 1893 some of the peasantry who had squatted on uncultivated land refused to be evicted and defied the officers of the law. A collision with the military was the consequence and several countrymen were shot. The agita-

tion against taxation and in favor of local autonomy and a reform in the land laws had assumed portentous dimensions when Crispi took charge of the interior. On Dec. 18 antitax rioters seized the municipal buildings of Monreale, a town near Palermo, overcoming the police. The troops charged the mob on the steps of the tax office, and eventually fired a volley, wounding 30. The mayor of this town, having expressed sympathy with the Socialistic demands, was suspended before the outbreak and threatened with prosecution for inciting to revolt. In Bioppo and other towns similar disturbances took place. The Government took vigorous measures to check insurrection. The *Fasci dei Lavoratori* were found to have prepared for a general uprising. They had secretly collected thousands of rifles and a large quantity of ammunition, and were well supplied with money, some of which was supposed to have been contributed by French Socialists. Troops were called out and quartered in the disturbed section, until by the end of the year there were nearly 40,000 garrisoned in Sicily. Gen. Morra di Lavriano was placed in command, and under martial law was clothed with arbitrary military and civil powers. In Pietraperzia the peasants tried to disarm the soldiers, who fired and killed 8 persons. In the village of Gibellina rioters burned houses, and the military, after two futile charges, fired on the mob, killing 5 and wounding 10. In Terrasini, near Palermo, the villagers set fire to the *octroi* offices. In Trapani the doors and windows of the town hall were smashed and bombs were exploded. In the large town of Marincò the mob of several thousand attacked the municipal buildings, and when the troops appeared there was a sharp fight in which 30 citizens were killed and 50 wounded and a number of soldiers were injured. At Calata Fimi several hundred peasants attempted to wreck the *octroi* offices and were dispersed by the troops. Similar conflicts occurred at Caltanesetta, Ragusa, Leonforte, Naro, and other places. While the central committee of the Socialist party, led by Napoleone Colajanni, issued a manifesto appealing to the people to renounce violence, which would be fatal alike to Sicily and to the party, the committee of the *Fasci dei Lavoratori*, the leading spirit of which was Giuseppe de Felice Giuffrida, Deputy for Catania, published one declaring the disturbances to be a painful necessity and a consequence of unbearable conditions which could only be remedied by force. A state of siege was proclaimed over the whole of Sicily. Premier Crispi would not have been able to arrest the insurrectionary movement so quickly, even with the overwhelming forces that were thrown into Sicily, if the people were not confident that he sympathized with them and would insist on legislation reforming the tax and land laws.

## J

**JAPAN**, a constitutional monarchy occupying islands east of Asia. The Emperor, Mutsuhito, born Nov. 3, 1852, is the one hundred and twenty-third of the line of mikados. The heir

apparent, Yoshihito, was born Aug. 31, 1877. By the Constitution of 1889, inheritance to the imperial title is restricted to the male line. The imperial houses from which heirs to the throne



may be taken are ten, to each of which allowances from the civil list are made annually. Eleven members of the Upper House of the Diet are styled princes. The fifth session of the Imperial Diet was formally opened by the Emperor on Nov. 28, 1893.

**Finances.**—The budget submitted to the Imperial Diet, Nov. 28, 1893, for the next fiscal year, in six books containing 1,438 pages, may be thus summarized, the figures standing for silver yen: Totals—revenue, 90,675,196; and expenditure, 85,472,159. The increase of income over that of last year, 2,649,481, is derived from the tax on *saké* and tobacco, customs dues, licenses, commissions and receipts from posts and telegraphs; the decrease of 926,573 is in mining-tax receipts and receipts from railroads, making a balance of 1,712,808. In expenditure there is a total increase of 3,624,054. Owing to the great development of administrative and civilizing agencies, the items of ordinary expenditure amount to 1,994,704; but as there has been saved by reduction of office expenses and salaries 1,695,315, the total actual increase is but 299,962. In extraordinary expenditure the items amount to 3,894,733, which sum is decreased 632,212 by a reduction of subsidy to the Japan Railway Company and less outlay on men-of-war, giving a balance of 3,262,521. The excess of revenue over expenses is 5,233,036. In the report of the budget committee, distributed Dec. 19, a retrenchment of 3,382,000 is proposed, by which the estimated surplus is 8,400,000. In March, 1892, the foreign debt was but \$3,840,000. The national debt (including the foreign) in 1892 was yen 251,743,709, which, with 22,000,000 of circulating notes payable in silver on demand and 25,702,384 of paper money, makes a total of 299,446,093. Of metal coinage, there have been made and circulated since the foundation of the mint, in 1879, until 1882 yen 193,582,540, of which yen 188,891,364 (63,426,861 gold, 109,665,118 silver, 4,267,349 nickel, and 11,532,036 copper) are in circulation. The paper money issued by the Government and national banks for ordinary business amounted, April 1, 1882, to yen 136,161,150.

**Trade.**—The total foreign trade for 1892 was nearly double that of 1884. Owing to the progress of native industries, the imports of raw material are increasing over the imports of manufactured goods. Since 1887 the value of imports has increased over 19 per cent. The value of cotton yarn and piece goods has decreased 17 per cent., while woollen goods remain stationary. In 1892 eleven times the quantity of raw cotton imported in 1887 entered Japan, and during these four years the export of fabrics made in Japan was over 400 per cent. The Japanese now compete with the British in the far East in certain lines of cotton goods. Exclusive of yarn made from native cotton, the increase of yarn consumed in 1887 was 25,000 tons; in 1892, 72,000 tons. Imports of sugar are increasing. Since 1890, owing to fluctuations in silver, Japan has been steadily selling in a dearer market and buying in a cheaper one. In 1892 the export of gold was nearly \$5,000,000, and the import nearly \$15,000,000 of silver. British trade has declined, and American trade has advanced. The foreign trade of Japan for the year 1892 amounted in exports to nearly \$65,-

717,350, and in imports to nearly \$53,308,810, or an increase in the whole foreign trade over that of 1891 of nearly \$2,592,170, and an excess of exports over imports of nearly \$14,408,540, more than a majority of the whole being done at Yokohama. During the past ten years raw silk has formed over 40 per cent. of the exports, while tea has fallen from 17 to 8 per cent., while the export of manufactured silk goods has greatly increased. In imports, cotton yarn from 22 per cent. in 1883 has fallen to 10 per cent. of the total value in 1892, while raw cotton has risen from 1 to 17 per cent., being now the most important article in the import trade. While Japan is yearly becoming more and more her own manufacturer, 82 per cent. of the foreign trade (78.5 per cent. of imports and 85.5 per cent. of exports) is in the hands of foreigners. Since 1887 the gold value of the import trade has increased 19 per cent., and the value of the export trade 60 per cent. The steady increase of trade with the United States is especially shown in "General View of Commerce and Industry in the Empire of Japan," published by the Government, and distributed at the World's Fair in Chicago. The total values of exports and imports for 1873 to 1891 show a steady increase of the former from yen 4,226,162 to 29,795,755, and of the latter from yen 1,017,761 to 6,840,048, showing that as a buyer from Japan the United States leads all nations, while as sellers only Great Britain and China exceed. Especially has mutual increase of trade been noticed since the Centennial Exhibition of 1876. The first Japanese chamber of commerce was established in 1878, since which date 50 more have come into existence. These, with the other organizations which have sprung into existence in recent years and are noted below, exert a powerful influence in developing the commercial energies and resources of the whole empire.

**Army and Navy.**—On Dec. 31, 1891, the total enrollment of persons in the employ of the military service was 269,620, of whom 251,254 were soldiers, 1,879 students, 10,581 petty officers, 3,587 officers, and 595 general and superior officers. Under the conscription law there were available in 1890 350,369 recruits, of whom 307,856 had just attained the conscript age of twenty. Of the recruits, 20,365 were placed in active service and 127,565 assigned to the reserve. The empire is divided into 6 military departments, in which are 19 hospitals, the proportion of deaths among 100 sick soldiers being 1.24, and of deaths among 1,000 being 7.11. In the navy department, Dec. 31, 1891, were 14,190 persons, of whom 13,092 were officers and sailors in active service; 35 steam vessels, of 61,763 tons displacement and 76,665 horse power, mounting 324 cannon, all of the finest modern European model and equipment, and manned by 5,726 officers and subordinates, formed the Japanese fleet. In the 3 naval hospitals the death rate of the sick was 1.33, and of every 1,000 men was 5.87.

**Industry.**—In almost all the items under this head the progress shown is extraordinary. The stimulus of foreign demands and of the cultivated tastes of the people, besides the application of Western arts and sciences, are the underlying causes of the increase. Of land owned by proprietors, 61 per cent., and by farmers, 39 per

cent. is cultivated. Eleven thousand five hundred and twenty-three acres of rice and other arable lands are now under cultivation, the total product of 3 crops—rice, rye, wheat—in 1891 being 90,391,865 bushels, averaging 21 bushels to the acre. Mulberry plantations for the food of silkworms cover 617 acres. Most of the fertile land is in valleys, but there are vast spaces of forest, mountainous, or poorly productive land, though famines are now preventable on account of railways and improved transportation by land and sea. On account of the silicious bamboo which covers densely much of the land otherwise utilizable as pasture, sheep can not be profitably reared. The area belonging to the state and covered by forests, groves, and wild bamboo amounts to 26,018 acres, but a steady decrease of the area of infertile and increase of reclaimed or fertile land is noticed as compared with previous years. The total number of horses is 1,546,368, and of cattle is 1,044,976, which, considering the great development of railways and new articles of food, is a relative as well as actual increase over former years. Of tea, 55,723,352 pounds were grown in 1890. In the *saké* manufacture 14,752 distilleries and breweries produced of the various alcoholic beverages made from rice 63,456,500 gallons, while 948,565 persons brewed *saké* for domestic use. Of soy, the increased production of 23,160,040 gallons, as compared with little over half that amount in 1885, we note that there is a European demand, the condiment being now well known either in a pure state or as the basis of widely advertised sauces with local European names. The output of pottery and porcelain for 1890 was valued at yen 2,882,508, and of pipes yen 1,504,560. During the year 1891, 367 patents were issued, 117 models deposited, and 554 trademarks registered.

To meet the modern conditions of business there are now in Japan more than 50 chambers of commerce, 2,013 trades unions organized by those who pursue the same trade in the whole empire, 13 rice exchanges, 3 stock and 3 general exchanges, and 1,916 markets at which daily, monthly, or several times a year, buyers and sellers gather from various places for the purchase and sale, according to the old methods, of products, fabrics, and new or second-hand articles of all sorts. The 134 national banks of the country have a paid-up capital of yen 48,701,100. The Bank of Japan, with its paid-up capital of yen 10,000,000, gives stability and equilibrium to the system, and is the organ of the Government's financial administrations. Private banks number 252, with a paid-up capital of yen 19,796,000. Semibanking corporations numbering 678 have a capital of yen 13,827,000. Of joint-stock companies for commercial purposes there are 2,631 with capital aggregating yen 182,137,828; of these, 315 are agricultural, 1,296 commercial, and 1,020 industrial. Instead of the old system of isolated and individual workshops the tendency is to associated labor and the concentration of capital in large manufactories, with the accessories of steam and other engines. Companies and individuals now own 2,489 factories, of which 739 have steam engines (1,519 engines with 28,500 horse power) and 464 with hydraulic engines (1,283 engines of 4,772 horse power), the capital invested being yen 70,734,764. The pro-

duction and manufacture of silk occupies the first importance, after which follow, in relative importance, weaving, mining, refining of metals, and the preparation of rice, tobacco, *faïence*, watches, bricks, and cotton. Besides 5 Government technical schools of navigation, industry, fine arts, posts and telegraph, there are numerous schools in the commercial cities which further the progress of commerce and industry. Of the 767 serial publications, 167 are devoted to agriculture, commerce, and industry, and 170 to science. Besides the great educational and special museums in the cities of Kioto, Tokio, and Nara, there are in the various prefectures 36 industrial museums. Of the 1,864 miles of railway in 1893 the Government owns 551 and private corporations own 1,313 miles, in all of which, to Sept 30, 1892, yen 78,303,127 had been invested, and on which in one year 25,790,302 persons traveled. Other traffic and travel on wheels was done by 31,965 horse vehicles, 178,041 *jinrikishas*, 11,027 ox carts, and 763,056 handcarts.

#### Salt-Making, Fisheries, and Navigation.

—A maritime population, numbering 865,189 active fishermen, living in 365,329 houses, with 277,698 boats or junks, produced in 1890 dried and salt fish, seaweed, and other marine products to the value of yen 10,257,134; sardines, dried or in oil, 323,548,790 pounds; besides 7,950,570 pounds fish oil. Salt meadows, or sea-shore tracks of sand which are sprinkled with sea water—the bed being leached after evaporation, and the brine boiled down—produced 24,331,700 bushels of salt. The salt beds covered 19,088 acres, and there were 17,595 furnaces for reducing the brine. Transportation by sea is now carried on by 607 steamers, of 95,588 tons burden and 21,167 horse power, the sailing ships built in European style numbering 835, of 50-137 tons burden, commanded by 1,366 Japanese and 138 foreign captains, and manned by 7,502 natives. To these are to be added 18,701 junks, with a tonnage amounting to 3,167,096, and 617,618 small boats. Sixty-eight national light-houses and lightships guard the coast, while 77 similar aids to navigation are maintained by local authority or enterprise. In 1891 46 vessels of foreign and 800 of native model were lost or damaged on the coasts or at sea, causing over 622 deaths.

**Organized Charity.**—Japan has sent hundreds of special missions to Europe and America to study administrative affairs, jurisprudence, and the various arts and sciences calculated to develop material civilization; but study of foreign methods of public benevolence has thus far and rarely been prosecuted by private individuals. Rich nobles and merchants have also generously contributed to literary, educational, and scientific objects, but it is rarely that private munificence founds hospitals, homes, asylums for the sick, aged, or needy. Little work of this sort is done by either Shinto or Buddhist temples. What has been done in benevolent enterprise by the Christian missionaries has been, on account of slender resources, rather by way of stimulating example. The initiation of public charity has been encouraged by their Majesties the Emperor and Empress, who have given handsomely from their private purse. Three imperial ordinances have called attention to the



subject with good effect, especially on behalf of foundlings, victims of calamity, and of contagious diseases. Already a few public hospitals, insane asylums, homes for foundlings, etc., exist in Tokio, Osaka, Akita, and Nagoya, which supplement the work of the private hospital, which are means of income to physicians educated in Western medicine and surgery. The Akita Benevolent Association is the development of an asylum for orphans, the aged, and the unfortunate, which was founded in 1829. The rules and regulations of this association, published April 4, 1892, are now circulated over the empire to encourage imitation. Already charity bazars, concerts, and theatricals are now the fashion, and in Tokio are under the patronage of eminent men and women. The world-famous actor Danjiro in 1892 gave 3 representations in aid of the poor—said to be the first Japanese instance of the kind. There are also the Red Cross Society, and special organizations for relief in epidemics, such as cholera. In case of earthquakes, inundations, fires, and famines, public subscriptions are made, and the Government furnishes relief. In 1891, 784,423 persons were afforded relief in food, shelter, tools, seeds, or by remittance of taxes to the extent of yen 984,095, as compared with 1,165,113 persons at an expense of yen 1,009,286 for the previous year when the great earthquake took place. In 1890, 17,487 sick, infirm, or aged were aided gratuitously by public funds, and 128,872 persons assisted temporarily repaid their loans; 5,431 foundlings were succored at a public cost of yen 28,761.

**JEWS.** Abroad, one turns first to Russia, where the process of nationalizing, felt by all creeds and classes not of the dominant faith, is peculiarly severe in its relations to the Jews. The silent rebuke of the civilized powers was not without its effect, so far as any open outbreaks are concerned, but the laws of expulsion to the pale are strictly enforced, with their attendant hardships. Within the pale immigration is now assisted by the Government to a certain degree. A rabbinical conference was called by the Czar, and the first sessions were held in November, but its practical result is not yet known. In Germany and Austria-Hungary Semitism is growing less intense. The Ahlwardt disclosures were a boomerang for the party, which is now being understood as hostile not to the Jew alone, but to capitalists in general. The rise of an organization opposed to the anti-Semites, with a journal of its own, supported by many non-Israelites of distinction, is a happy augury. In France the anti-Semites suffered severe defeat. In Switzerland the agitation against the Jewish method of slaughtering animals succeeded, and the subject was discussed in Germany and elsewhere. In Roumania proscriptive measures are still enforced, but in Bulgaria civil and religious liberty is maintained, while Turkey's attitude continues peaceful and progressive. In England the Russian migration, with its effects on the labor world, has been the subject of newspaper and parliamentary debate. It has been shown that the accessions of pauper aliens have been few. Still the problem of Russian immigration remains. A new director has been appointed for the Argentine colonies, and the condition of the

colonists may be summarized thus: In the province of Santa Fé—Moiseville, 436; Monigotes, 69. Province of Buenos Ayres—Mauricio, 789. Province of Entre Rios—Clara, 999; San Antonio, 291. On land purchased by the colonists themselves: Province of Cordoba—Ballesteros, 69; St. Julio, 30. In all, 2,683 colonists, who possess 5,276 oxen, 1,128 milch cows, 331 mules, and 2,076 horses. About 40,000 acres are sowed, mostly with wheat and maize. In addition, over 100,000 vines and fruit trees have been planted in Clara colony alone. Among the colonies are distributed 8 thrashing machines, 8 steam engines, 97 reaping machines, and 6 other machines (steam and horse power) for maize; 24 sowing and 4 mowing machines, besides 1,345 plows, 843 harrows, and 264 agricultural carts. The buildings actually erected are: Moiseville, 91 houses, 1 school, and 1 synagogue, also 150 wells sunk; Mauricio, 314 houses, 2 schools, and 320 wells sunk; Clara, 270 houses; San Antonio, 111 houses, 1 synagogue, 1 school, and 29 wells sunk—a total of 793 houses, 3 schools, 2 synagogues, and 499 wells.

According to the blue book on the census of India, issued this year (although its statistics bear on the year 1891), there were 17,200 Jews in India, of whom 10,500 are in Bombay, 2,800 in Aden, 1,300 in Cochin, and 1,450 in Calcutta. There are two sections of the community—white, and black. In the ranks of the native army are many Jews, who, while maintaining the principles of their faith, have adopted the language and much of the social customs of the Maratta population by whom they are surrounded.

Despite obstacles—social, political, and religious—the Jews abroad continue to display commendable activity in every sphere. In pure science, medicine, and philology their progress is more marked than in literature proper, although there is a gratifying addition to the ranks of young writers in England, Germany, and France in particular. There has been no interruption in the work of erecting new synagogues and public institutions. More attention is being paid to industrial training, and an agricultural school has been organized near Hanover. Special incidents of interest were the gifts of a million francs for a maternity hospital in Paris, without distinction of creed; of a consumptive hospital by Baron Nathaniel de Rothschild, of Vienna, and the late Baron Bleichroeder, of Berlin; the election of Maurice Loewy as Vice-President of the Paris Academy of Sciences; the silver jubilee of Dr. M. Elstatter, Finance Minister of Baden; the appointment of M. A. Isaacs as Solicitor-General for Victoria, and election of Nathaniel Levi and Emanuel Steinfeld to the legislative council; and the lecture by Chief Rabbi Adler, of London, before the Church of England Sanitary Association on "Sanitation as taught by the Mosaic Law." Claude G. Montefiore's Hibbert Lectures were published in London, together with Joseph Jacob's "The Jews of Angevin England," and I. Zangwill's "Ghetto Tragedies." An Anglo-Jewish historical society was founded. S. Alexander was appointed to chair of Logic and Philosophy in Owen's College, Manchester. Dr. Kayserling, of Buda-Pesth, continued his researches as to the Jews and the discovery of America. Among works published about the Jews and Judaism

were Nahida Remy's "Culturstudien über das Judenthum" (Berlin), Leroy Beaulieu's "Israel chez les Nations" (Paris), and Dr. Steinschneider's "Hebrew Translations of the Middle Ages" (Berlin).

At home, the year that has closed was marked by no more suggestive event than the Congress of Religions at the World's Fair. Both in this and in the Jewish Denominational Congress, as well as in the Jewish Women's Conference, the Jews were represented by speakers and essayists of force and ability. In the Congress of Religions papers were presented by Rev. Dr. Gottheil on "Moses"; Miss Josephine Lazarus, "The Outlook for Judaism"; Rev. Dr. Felsenthal, "The Sabbath in Judaism"; Rev. Dr. E. G. Hirsch and Rev. Dr. H. P. Mendes, "Orthodox Judaism"; Rev. Dr. I. M. Wise, "The God Idea in Judaism." In the Jewish Women's Congress the chief papers were by Mrs. Helen K. Weil, Miss Julia Richman, Mrs. Eva L. Stern, Mrs. Panline Rosenberg, Miss Ray Frank, Mrs. L. Manheimer, Miss Mary Cohen, Mrs. M. D. Louis, Miss Lesem, Miss Henrietta Szold, on subjects connected with Jewish history and literature, and on philanthropic and economic topics. At the Jewish Denominational Congress the programme included the following among its features: "The Synagogue and the Church, and their Mutual Relations with Reference to their Ethical Teachings," K. Kohler, New York; "Contributions of the Jews to the Preservation of Sciences in the Middle Ages," S. Sale, St. Louis; "Popular Errors about the Jews," Joseph Silverman, New York; "Ethics of the Talmud," M. Mielziner, Cincinnati; "A Concise Digest of the History of the Jews as far as their Share in the Culture of the Various Nations and Ages is concerned," G. Deutsch, Cincinnati; "A Jewish Department of the Chautauqua," H. Berkowitz, Philadelphia; "Religious Education of the Jews in Modern Times," Max Heller, New Orleans; "Position of Woman among the Jews," M. Landsberg, Rochester; "Atheism," Ad. Moses, Louisville; "Ethical Judaism: What the World benefited by its Teachings," A. Kohut, New York; "A History of the Education of the Jews, both Public and Private," H. Zirndorf, Cincinnati; "Popular Lectures," Adolph Raden, New York; "Reverence and Rationalism," M. H. Harris, New York; "Attitude of Judaism to the Science of Comparative Religions," L. Grossmann, Detroit; "A Review of the Messianic Idea of the Jews from the Earliest Times to the Rise of Christianity," J. Schwab, St. Joseph, Mo.; "The Historians of Judaism of the Nineteenth Century," E. Schreiber, Toledo, Ohio.

At the sixth convention of the Central Conference of Rabbis, held in Chicago, Aug. 23, Rev. Dr. I. M. Wise presided, and the revised prayer-book, a hymnal, and a union catechism were subjects of debate.

At the second annual session of the American Jewish Historical Society, held in New York, Dec. 27, the papers submitted were as follow: Dr. Cyrus Adler, "Settlement of the Jews in the Ohio Valley"; Rev. Henry Cohen, Galveston, "Settlement of the Jews in Texas"; Rev. Dr. B. Felsenthal, Chicago, Ill., "History of the Jews of Chicago," "What is the Exact Date

of the Trial of Jacob Lumbrozo for Blasphemy?" "A Sermon by Moses Mendelssohn, translated into English and printed One Hundred and Thirty Years Ago," "Concerning the Jewish Congregation in Surinam"; Mr. Herbert Friedenwald, Philadelphia, "Jacob Isaacs and his Petition to the House of Representatives concerning the Conversion of Salt Water into Fresh Water," "Letter of Jonas Phillips, of Philadelphia, to the Federal Convention," "Memorials to the Continental Congress"; Prof. R. J. H. Gottheil, "On a Manuscript Hebrew Translation of a Spanish Book on the Conquest of Mexico and Peru"; Dr. Charles Gross, "Unpublished Documents from the Public Record Office, London"; Mr. J. H. Hollander, Baltimore, Md., "The Civil Status of Jews in Maryland, 1634-1776," "Sketch of Haym Salomon, from an Unpublished Manuscript of Jared Sparks"; Max J. Kohler, Esq., New York, "Phases of Jewish Life in New York before 1800," "The Lopez and Rivera Families of Newport"; George A. Kohut, New York, "Correspondence between the Jews of Malabar and the Jews of New York," "A Petition from the Jews of Germany to Congress," "Some Jewish Wills"; N. Taylor Phillips, Esq., New York, "Family History of the Rev. David Machado," "Unpublished Letters of the Rev. Gershom Mendes Seixas"; Mrs. Isabella H. Rosenbach, Philadelphia, "Aaron Levy."

Among the new works of the year were Rev. M. Fluegel's "Spirit of Hebrew Legislation," Rev. L. Adler's "Sabbath Hours," Max J. Kohler's edition of Judge Daly's "The Jews of North America," Prof. Abram S. Isaacs's "Stories from the Rabbis," "Melodies of the Synagogue," issued by the Jewish Women's Congress, and a further installment of Dr. Jastrow's "Talmudic Dictionary." The Jewish press has been increased by additions in Richmond, Syracuse, Boston, and Portland, Ore.

The fiftieth anniversary of the Benai Berith Order was appropriately celebrated in New York, Philadelphia, and in other cities. Attempts were made to organize young Israel by a Jewish Endeavor Society, and Dr. Berkowitz began his Jewish branch of the Chautauqua. Efforts were made to establish a technical institute in Philadelphia, and, despite the financial panic, nearly a million dollars was raised for the new Mount Sinai Hospital, New York. The condition of the Russian immigrants in New York caused much solicitude, but no concerted attempt is made to divert the stream from the metropolis. Some idea of the extent of the work of the United Hebrew Charities of New York may be gathered from these statistics presented at the annual meeting. There were 5,620 applications requiring action, classed as local poor, and 3,770 Russian and Roumanian cases. In addition there were 4,279 cases in the local department and 525 in the Russian previously investigated and again brought up. Transient relief was also given to 697 persons who were not visited by any committee, but were investigated at the office, and supplies were afforded to 2,714 similar cases; 4,177 persons were supplied with transportation, and 4,432 found employment through the agency of the society, making a total of 55,309 persons who were assisted in various



ways. Among the applicants aided in the local department were 542 widows and 402 persons over the age of sixty years. The total receipts were \$178,910.95; the disbursements, \$177,513.89. Among latter items are: Cash relief, \$64,490.77; transportation, \$38,001.53; supplies and lodging, \$23,552.51; free burial, \$4,610.50; maternity, \$2,551.61; medical aid, \$4,839.10; salaries, \$13,352.48. Work was found for 694 office boys, 230 porters, 104 tailors, 322 laborers,

486 factory hands, 108 clerks, 91 dishwashers, 85 drivers, 12 elevator men, 14 farmers, 9 furriers, 6 bell boys, 6 harness makers, 11 printers, 28 jewelers, 26 locksmiths, 32 machinists, 3 musicians, 13 nurses, 17 packers, 39 painters, 17 plumbers, 12 pocketbook makers, 54 pressers, 72 sales people, 32 domestics, 93 shoemakers, 9 stablemen, 8 tanners, 9 teachers, 72 tinsmiths, 5 typewriters, 12 upholsterers, 9 varnishers, 33 waiters, 24 watchmakers, 20 weavers, etc.

## K

**KANSAS**, a Western State, admitted to the Union Jan. 29, 1861; area, 82,080 square miles. The population, according to each decennial census, was 107,206 in 1860; 364,399 in 1870; 996,096 in 1880; and 1,427,096 in 1890. Capital, Topeka.

**Government.**—The following were the State officers during the year: Governor, Lorenzo D. Lewelling, Populist; Lieutenant-Governor, Percy Daniels; Secretary of State, Richard S. Osborne; Auditor, Van Buren Prather; Treasurer, William H. Biddle; Attorney-General, John T. Little; Superintendent of Public Instruction, Henry M. Gaines; Superintendent of Insurance, S. H. Snider; State Bank Commissioner, John W. Breidenthal; Railroad Commissioners, John Hall, P. B. Maxson, W. D. Vincent; Chief Justice of Supreme Court, Albert H. Horton; Associate Justices, W. A. Johnston, S. H. Allen.

**Finances.**—On July 1, 1890, there was a balance of \$715,138.13 in the State treasury; the receipts for the two years ensuing were \$5,392,531.10, and the disbursements \$5,380,506.72, leaving a balance of \$721,162.52 on July 1, 1892. The balance on Nov. 30, 1893, was \$678,731.50. The State debt, which is not large, is being gradually reduced.

**Legislative Session.**—The regular biennial session of the Legislature began at Topeka on Jan. 10. At the preceding November election the People's or Populist party had elected its entire general ticket for State officers and a majority of the members of the State Senate, but had failed to secure control of the Lower House. The State Canvassing Board, which met late in November, found, on the face of the official returns, that 15 Republicans and 25 Populists had been elected to the Senate, and 63 Republicans, 58 Populists, and 2 Democrats to the House, while in one representative district (Coffey County) there was a tie vote. As required by law in such a case, the board proceeded to decide by lot which of the 2 candidates should be entitled to the seat, with the result that the Republican candidate was chosen. After the result of the canvass had been declared, an error was found in the official returns from Haskell County, by reason of which the board had certified the election of A. W. Stubbs, Republican, when in fact his Democratic opponent, Joseph Rosenthal, had received a majority of the votes cast. The returns were sent back to the county clerk for correction; but, as the board had performed its duties as required by law and had dissolved, it was claimed that the members could not legally be called together again for the purpose of receiving and

acting upon the corrected returns. In order to test this question, Rosenthal, late in December, began mandamus proceedings in the State Supreme Court against Stubbs, and obtained a decision early in January to the effect that the Canvassing Board could not be reconvened, and that he must await the action of the Legislature. Simultaneously with the beginning of this proceeding by Rosenthal, the Populist candidates for Coffey, Republic, and Jackson Counties brought similar proceedings against their Republican opponents; but their cases were not argued or decided prior to the meeting of the Legislature. The Populists also served notice upon several of the Republican Senators and Representatives that their seats would be contested before the Legislature when it should convene, whereupon the Republicans retaliated by serving like notice of contest upon several Populist members. The charge had been freely made by the Populist leaders since the election that they had been deprived through fraud of their majority in the Lower House, and, as the time for the legislators to assemble drew near, it was asserted that the Republicans, in spite of their apparent majority, would not be allowed to organize that body. The Senate was organized by the Populists without difficulty, but in the House both sides came prepared for a stubborn contest. After a stormy session, 2 Houses were organized—one by the Republicans, in which 63 members participated, the other by the Populists, in which 58 members took part. The 2 Democratic members took no action on either side. George L. Douglass was chosen Speaker of the Republican House, and J. M. Dunsmore of the Populist. The rival Speakers occupied the platform side by side, and each House attempted to conduct its business regardless of the other. The Republicans at once proceeded to admit Rosenthal to the seat for which the Republican candidate, Stubbs, held the certificate, the latter having refused to participate in the organization of the Republican House or in any way to take advantage of the error by which the certificate was given him. The Populists, after electing officers, proceeded to unseat 18 Republican members without investigation of the merits of each case, and installed in their places 11 Populists, securing in this way an apparent majority. Both Speakers remained in the chair all night, the Republicans fearing to adjourn lest they should be locked out of the Capitol, which was then controlled by Populist officials. An understanding was finally reached, by which both sides were allowed access to the Representatives' hall pending a settlement of the

controversy. No change in the situation occurred on the second day: but on Jan. 12 Rosenthal and his 2 Democratic colleagues, who had heretofore been neutral, announced that they regarded the Republican majority as forming the only legally organized House, and that they would hereafter act with it. In spite of the fact that the Douglass House now contained 66 members, all holding legally issued certificates, the Populist Governor, Lewelling, later in the same day, sent a communication to the Dunsmore House recognizing it as the legally constituted House of Representatives. On the following day the Populist Senate gave its recognition to the Dunsmore organization, which now had every equipment for the transaction of business except a majority of the persons holding certificates of election to the House. For several days the contest remained unchanged, each House holding regular sessions. On Jan. 18 Gov. Lewelling issued a manifesto, defending his course, from which the following is an extract:

Being personally satisfied that the Populist House had a majority of the *legally elected* Representatives, notwithstanding the possession of the majority of certificates by the opposite party, I deemed it my duty to recognize it as the House of Representatives. The Senate is presumed to have been governed by like considerations.

In reply, Speaker Douglass issued a counter-manifesto, from which the following paragraph is taken:

It has been the universal custom in this State, and is the accepted rule in parliamentary bodies, that members whose election has been ascertained in the usual way, and who have received from the constituted authorities the proper certificates of election, are *prima facie* entitled to seats in the body at its organization. If any other rule were adopted, no legislative body could ever be fairly organized, for a minority could always give notice of a sufficient number of contests to destroy the right of the majority to organize, and by placing the minority in control, it could maintain such control without limit. Every recognized authority upon this question is conclusive.

If, after a majority of the members of a House have regularly organized and proceeded to business, a minority of 58 members, by first mutilating an official roll and calling in 10 contestants for seats, can organize a House of Representatives, then one member can do so with the aid of 62 contestants, and there is an end to even the semblance of constitutional government. If the recognition of the Governor and the Senate can make such a body a part of the Legislature, there is little necessity of electing a House of Representatives by the people, for its political complexion will always be at the mercy of a partisan Governor and a partisan Senate.

On Jan. 23 a caucus of the Republican legislators was held, at which Joseph W. Ady was nominated on the third ballot as the party candidate for United States Senator, his principal competitor being United States Senator B. W. Perkins. The law required that on the following day a ballot for Senator should be taken in each House. In the Senate the Republicans voted solidly for their candidate, while the Populists, who had not yet agreed upon a candidate, scattered their votes. In the Dunsmore House the votes were also divided among several candidates, while the Douglass House voted for Ady. Later in the same day the Populist caucus succeeded in nominating Judge John Martin, a

Democrat, as its candidate, the vote on the fifteenth and final ballot being: Martin, 49; Judge Frank Doster, 35. On the next day, Jan. 25, the Houses met in joint session, over which the Populist Lieutenant-Governor presided. As he proceeded to recognize the Populist House, the Republicans refused to answer the roll call. Ninety-one members responded to their names, of whom 11 were Populists holding seats in the Dunsmore House by virtue of the attempted unseating of Republicans. Without these there was no quorum. When the vote for Senator was taken, two Democrats, Senator O'Brien and Representative Rosenthal, who had not before recognized the Dunsmore House, voted with the Populists, and Wilson, the independent Republican from Meade County, who up to this time had been acting with the Republicans, recognized the Populist presiding officer and gave his vote to the Populist caucus candidate. The result of the ballot was the election of Martin, who received 86 votes to 4 for M. W. Coburn and 1 each for W. S. Hanna, F. J. Close, and S. H. Snider. Before the result had been announced, Senator Baker demanded that the Republicans be given the right to vote. This was refused, the election of Martin was declared, and the session dissolved. Thereupon the Republicans organized a second joint session, elected Speaker Douglass president, and passed a resolution declaring that as ten of the members who had voted in the former joint session were not entitled to their seats, there had been no election. A ballot was then taken in which 77 votes were cast for Ady, and the session adjourned. This attempt to elect a Republican claimant to the senatorial office was soon abandoned, as the Republicans could not hope to secure a majority of the Legislature in a joint session. Both parties now sought to affect a settlement between the rival Houses, but without success. The Republicans were anxious to bring the questions at issue before the State Supreme Court, but such a proposition was scouted by the Populists. Finally the Republicans decided upon the plan of arresting Ben. C. Rich, chief clerk of the Dunsmore House, and bringing him before the Douglass House to answer for contempt of the latter in interrupting and hindering its proceedings. They believed that Rich would resist imprisonment through *habeas corpus* proceedings, which would bring the whole question into the court. The arrest was made on the afternoon of Feb. 14 by the sergeant at arms of the Douglass House, but the fact soon became known to the Populists, who rallied and finally released him and escorted him to the Governor's office. During the conflict 2 Republicans were knocked down, and several men on each side were badly bruised. The encounter occurred in the center of the city and created great excitement.

After this episode the Populists decided to lock the Republicans out of the hall of Representatives. Sheriff Wilkerson, of Topeka, Republican, was called upon by the Governor to assist him in preventing their entrance, but refused to obey. When, therefore, on the morning of Feb. 15, the Republican members reached the Capitol they found it guarded by Populists. Rushing past the guards, in spite of threats,



they succeeded in reaching the hall only to find the doors locked. Sledge hammers were brought into use, and, the doors being forced, they entered and took possession of the hall. As soon as the Populists learned what had been done, Gov. Lewelling was notified, and he promptly called out the militia and instructed them to proceed to the hall and eject the Republicans from the floor.

Meanwhile the latter, fearing trouble, proceeded to bolt the doors and barricade the entrances to the hall. Several companies of the militia soon appeared and were drawn up around the Capitol, awaiting orders, and cannon were brought out from the arsenal. The Republicans found themselves besieged. The heat was turned off from the hall, and no food was allowed to pass through the militia lines. At this juncture Gov. Lewelling appeared before them and urged them to abandon the hall and prevent a conflict, but was met with a prompt refusal. The commander in chief of the State militia, Col. Hughes, was a Republican and a member of the House. Late in the evening of this day he appeared before his colleagues and informed them that he would sooner resign his command than carry out an order to eject the Republican House, and that a majority of his command would withdraw from the militia with him. He further intimated that orders to the guards, so far as they related to the taking of provisions into the hall, had been relaxed. Hardly had this been said when a string was dropped out of every window, and in shorter time than it can be told baskets filled with substantial lunches were hoisted up, and the Republicans broke their long fast.

Telegrams were sent by the Governor to various parts of the State, ordering out the militia, while at the same time, in response to other telegrams, hundreds of Republicans hastened toward Topeka, bound to see that the Republican legislators were protected. It soon became evident that the Governor could not rely upon the militia, which was officered largely by Republicans and could not be trusted to obey his orders in ousting a body of men with whom these officers were in sympathy. The feeling on both sides was intense, and the slightest friction would have precipitated a conflict. Cooler heads sought to effect a peaceful solution of the difficulty, and on Feb. 16 various propositions were submitted on both sides and discussed. Finally, on Feb. 17, an agreement was reached by which the Republican House was given undisputed possession of the hall, and the Populist House agreed to hold its meetings elsewhere; no arrests were to be made by either House of the members or officers of the other; the militia was to be disbanded, and the *posse* of Sheriff Wilkerson to be dismissed. This truce left the real difficulty still unsettled, but the Republicans had already made up a case for the court. On Feb. 15 the sergeant at arms of the Douglass House had arrested L. C. Gunn, of Topeka, on the ground that he had refused to appear before a committee of that House when summoned. He applied to the Supreme Court for a writ of *habeas corpus*, and the case was heard on the following week, Gov. Lewelling and the Populists being represented by counsel. A decision

was rendered on Feb. 25, two of the three judges (both Republicans) deciding in favor of the Douglass House, the third judge (a Populist) dissenting. In the face of this decision it was impossible for the Dunsmore House to maintain its organization with any pretense of right, and on Feb. 26 it disbanded and those of its members who held certificates of election joined the Douglass House, recognizing its legality. Seven weeks of the session had already been consumed in this wrangle, and only a few days remained for legislation. But this time was well utilized. One of the most important enactments was an Australian-ballot law, applicable to all elections for national, State, district, county, city, and township officers. It contains the usual provisions for nominating candidates by conventions or nomination papers. Except in case of municipal elections, the county clerk shall have charge of preparing and printing the official ballots. The names of all candidates shall be printed on each ballot, the nominees of each party being arranged in a column under the party name. Plain white paper, through which the printing can not be read, shall be used. Voters shall indicate their choice by marking a cross opposite the name of each candidate of their choice, or by writing in a name and placing a cross opposite thereto. Each polling place shall contain voting booths, and the door or curtain shall be closed when the voter is preparing his ballot. Employees are allowed two hours without loss of pay in which to vote on election days. The polls shall be open from eight o'clock in the morning till six o'clock at night.

An act to prevent corruption at elections requires every candidate and every political club and committee to file sworn itemized statements of election expenses with the county clerk within thirty days after every election. It was made unlawful for a candidate to hire any one to work in his interest on election day, and various forms of bribery were defined and punished.

Several acts were passed designed to drive money lenders from the State. One of these provides that all debts not payable in legal-tender notes shall be payable in standard silver or gold coins authorized by Congress, all stipulations in the contract to the contrary notwithstanding. Another provides that in all execution sales, and in all foreclosure proceedings (notwithstanding any provisions of the mortgage), the owner shall have eighteen months in which to redeem, and meanwhile shall be entitled to possession of the property.

All private corporations, except steam railroads and corporations engaged in producing farm and dairy products, are required to pay their employees weekly. Coal miners are authorized to employ a check weighman to care for their interests in the weighing of coal mined, and it is provided that all coal shall be weighed before being screened.

A valued-policy law, making the amount of insurance the measure of damages in case of total loss, was enacted.

For each of the fiscal years 1893-'94 and 1894-'95 a State tax of  $3\frac{1}{2}$  mills was authorized for current expenses, and an additional rate of two tenths of a mill for interest on the State debt. Suitable provision was at last made to se-

cure an exhibit of the resources of the State at the Chicago World's Exposition, the sum of \$65,000 being appropriated for that purpose. Among other appropriations were the following: \$50,000 for an additional wing to the State Normal School; \$70,000 for a detached ward cottage at Ossawatimie Insane Asylum; and \$50,000 for a physics and engineering building at the State University.

A constitutional amendment granting women equal rights of suffrage with men was adopted, and its submission to the people at the next election provided for.

Other acts of the session were as follow:

To prevent the introduction of cholera and other infectious diseases.

To provide for the construction and maintenance of levees.

Requiring railroad companies to stop at least one passenger train a day going in each direction at every county seat through which their line runs.

Requiring every telegraph company to maintain an office at every county-seat through which its line runs.

**Education.**—In 1892 the number of persons of school age in the State was 498,801, of whom 382,225 were enrolled in the public schools. This is a loss of 7,345 from the enrollment of 1891. The average daily attendance was 239,299, a decrease of 6,803 from 1891. There were 9,123 school districts in the State, and 9,088 school buildings. During the year 179 new schoolhouses were erected at a cost of \$151,620. To 3,722 male teachers an average monthly salary of \$52.10 was paid, and to 6,716 female teachers an average monthly salary of \$35.42.

The total amount of money received during the year 1891 for school purposes was \$5,044,299.68, of which the sum of \$3,538,450.91 was received of county treasurers from district school taxes. In 1892 the whole amount received was \$5,010,981.97, of which \$3,539,986.11 was received from the treasurers of the several counties of the State from district school taxes.

**Prisons.**—At the State Penitentiary there were 837 prisoners on Dec. 1, 1893.

The Legislature of 1885 made an enactment providing for a State reformatory for male criminals between the ages of sixteen and eighteen. Propositions came from several cities of the State for the location of this institution, and the commission appointed to locate it selected Hutchinson, and a structure there exists in an unfinished condition, although \$260,000 has been expended in its erection.

**Prohibition.**—The following is an abstract from the Governor's message upon this subject:

Prohibition is a part of the law of Kansas; not only statutory law, but a part of the Constitution of the State. A very large class of our people earnestly believe in the efficiency of the law, while a respectable element are not personally in favor of prohibition. Many of those who live in the larger towns and cities believe that the expense resulting from an honest, faithful effort to enforce the law exceeds the good results obtained, and is greater than the people should be made to bear. In the rural districts the law seems to be generally enforced; but it is not so well supported by public sentiment in the centers of population. Extraordinary powers have been placed in the hands of the executive for the enforcement of the law in cities of the first class through the metropolitan police system. It is un-

fortunate but true that these powers have in great measure been nullified by various law-evading devices, while serious evils have followed almost, if not quite, as objectionable as the one sought to be destroyed. In many places public sentiment seems to have encouraged and connived at the open violation of the law, and thus contempt is brought upon the authority of the State.

**KENTUCKY**, a Southern State, admitted to the Union June 1, 1792; area, 40,400 square miles; population in 1890, 1,858,635. Capital, Frankfort.

**Government.**—The following were the State officers during the year: Governor, John Y. Brown; Lieutenant-Governor, Mitchell C. Alford; Secretary of State, John W. Headley; Treasurer, Henry S. Hale; Auditor, L. C. Norman; Attorney-General, William J. Hendrick; Superintendent of Public Instruction, Edward P. Thompson; Commissioner of Agriculture, Charles Y. Wilson, all Democrats; Insurance Commissioner, Henry T. Duncan; Register of the Land Office, G. B. Swango; Railroad Commissioners, C. C. McChord, C. B. Poyntz, and Urey Woodson; Chief Justice of the Supreme Court, William H. Holt, Republican; Associate Justices, William S. Pryor, Joseph H. Lewis, and Caswell Bennett; Clerk of the Court of Appeals, Abram Addams, Democrats.

**Finances.**—The following general statement is given in the Auditor's biennial report:

At the close of the fiscal year ending June 30, 1891, there was in the treasury a balance of	\$11 04
The receipts for the year ending June 30, 1892, were.....	4,524,149 54
Making a total of.....	\$4,524,160 58
Expenditures for the same period.....	4,307,703 63
Leaving a balance, June 30, 1892.....	\$216,451 90
The receipts during the year ending June 30, 1893, were.....	4,123,783 24
Making a total of.....	\$4,340,235 14
Expenditures for the same year.....	4,160,753 34
Leaving a balance, June 30, 1893, of.....	\$179,481 80

The total taxable property for 1892, as returned by the county assessors, under the assessment made under the old law in the autumn of 1891, and equalized by the State Board of Equalization, was \$552,764,538; and for the year 1893, under the assessment made in the autumn of 1892 under the schedule of the new law, \$596,799,076.

**Valuations.**—The proportion of assessed to cash value of property has been 70 per cent., but this year, by reason of the new revenue law requiring a fair cash valuation, the Board of Equalization raised the per cent. to 80, holding that rate as the proper proportion to arrive at a fair adjustment of the assessed valuations as between counties, based on the previous year's cash transfers of property. The land and personalty subject to equalization, which excludes bonds, stocks, cash, etc., was assessed for 1893 in round numbers at \$321,132,000. The tax rate for 1893 was 42½ cents on each \$100 valuation, while the tax rate for 1892 was 47½ cents.

**Banks.**—The tables compiled from official data showed that from January to September only 7 bank failures occurred in Kentucky. The report of Kentucky banks outside of Louisville, for October, showed the reserve held to be 26.50 per cent., the required per cent. being 15.



**Railroads.**—The Railroad Commission completed its work of fixing assessments in December. The total assessment of railroad property in the State is \$55,005,765—last year's assessment \$52,316,038—making an increase of nearly \$3,000,000 on the last year, or \$21,000,000 more than the railroads themselves fixed the value on their property.

There have been built during the past year 59.47 miles of road, though these are mostly extensions, no road in the State building road to a greater extent than 16 miles. Several old pieces of road have been abandoned, which leaves the actual total mileage increase at 36.

A contract was given in December for building 60 miles of railway in eastern Kentucky, connecting the coal fields of Pike County with the Big Sandy river at Whitehall.

The Court of Appeals rendered a decision in October in what is known as the Railroad case. The act of 1884 exempted newly constructed roads for five years from the beginning of the construction. The act of 1886, the Hewitt revenue bill, is held by the court as repealing the act of 1884 and withdrawing the exemption, not, however, to affect the roads that were actually begun before Sept. 14, 1886. The lower court held that the exemption continued, and was not repealed by the Hewitt bill. The result will give the State probably \$100,000.

Another decision by the Court of Appeals affecting railroads was that a regulation of a railroad company requiring a passenger entering a train without a ticket to pay 25 cents extra fare, this sum to be refunded upon the presentation to any ticket agent on the road of a "rebate check" furnished by the conductor, was not unreasonable, and that where a passenger, with knowledge of the rule, and with knowledge of the fact that there was no ticket office at the station for which he was destined, failed before starting on his journey to buy a round-trip ticket, which he knew he could procure, he could not complain that upon his return he was ejected from the train on his refusal to pay the 25 cents extra.

**State Institutions.**—The number of patients in the lunatic asylums at the end of the year was 2,337—625 in the Western, 942 in the Central, and 770 in the Eastern. The institutions are full.

At the end of the year 1,103 convicts were confined in the Frankfort Penitentiary, and 504 at Eddyville.

A long controversy has been going on in reference to the accounts between the State and the Mason & Foard Company, which for some time had the lease of the labor of convicts at the Frankfort prison. A report made by the sinking fund commissioners in February made claim to \$38,193.85 as due the State from the company; but a minority report of the Governor and the Secretary of State claimed an indebtedness of \$94,000. On the other hand, the company claimed that the State was indebted to it. The minority report of the commissioners implied mismanagement on the part of a former administration.

The contract expired April 1, though the company had the option of renewing it. This they gave up, and bids were advertised for for leasing the labor of the prison as a whole, but none were received. Then the Legislature authorized the

lease of the convict labor by the day at so much per head, and bids were again asked. None were entered except from the same company, which made 2 bids—1 for 500 men at an average of 37½ cents a day, the State to furnish the fuel, and the other for the same number at 35 cents, the company furnishing the fuel. Difficulties arose in the attempt to settle the terms of the contract, and it was not made. The commissioners, in August, decided to conduct a chair factory in the prison on the State's account. Nov. 1 convicts to the number of 150 were set at work, and the Governor's message stated that at the beginning of 1894 about 600 were employed, a contract having been made to dispose of the output to the extent of \$18,000 a month.

The case of accounts between the State and the Mason-Foard Company was taken into the courts. The commissioner to whom the case was referred for proof and auditing of the accounts, reported that the State owed the lessees \$12,234. The matter still remains to be settled.

**Education.**—An important opinion in reference to the use of the school fund was given by the Attorney-General this year, in answer to the Auditor, who wished to know whether a bill for stationery furnished the Department of Public Instruction could legally be paid out of the fund set apart for the maintenance of public schools. The Attorney-General gave as his opinion that the common-school fund could not be so used, it evidently having been the intention of the framers of the law to place that fund beyond the reach of any attempt to turn it aside from the purpose for which it was originally designed.

It appears that there is also ambiguity in the new Constitution on the subject of the manner of voting for school trustees, and of those entitled to vote.

**Local Option.**—Great excitement was caused in Breathitt County, June 4, by the blowing up with dynamite of the "Hustler" office by unknown persons. The "Hustler" is a weekly paper, edited by the Rev. J. J. Dickey, and its influence resulted in the recent passage of a local-option law.

A local-option election was held at Bowling Green, July 1, and resulted in a victory for the temperance people by a majority of 28. An all-day prayer meeting, women at the polls, and the ringing of church bells added to the excitement.

At Paducah the opponents of local option filed a petition, July 1, with the county judge, signed by about 800 voters, praying that he order an election to decide whether spirituous, malt, and vinous liquors shall be sold in that city. This action of the liquor men was to forestall the local-option people, as, if the city election was held, no other election could be held involving the same question for three years.

**Whisky.**—As great interest centers in the stocks of whisky in Kentucky, the following table has been prepared to show what the stocks were in the State at the end of each month from June 30, 1892, to June 30, 1893, in gallons:

June 30, 1892.....	82,851,182	Jan. 31, 1893.....	82,391,775
July 31.....	81,700,561	Feb. 28.....	86,221,723
Aug. 31.....	79,349,296	March 31.....	90,171,968
Sept. 30.....	77,556,471	April 30.....	92,164,249
Oct. 31.....	76,815,697	May 31.....	94,711,032
Nov. 30.....	76,314,153	June 30.....	98,889,332
Dec. 31.....	78,915,553		

The production for the year (that of June, 1893, being estimated) was placed at 22,549,281 tax gallons, or 563,762 barrels. The tax on this amounts to \$19,294,352.90. Forged whisky warehouse receipts to the amount of \$250,000 were found in March to have been floated, a large part being held by Louisville banks.

**Road Convention.**—The State Road Convention met at Bowling Green in April. The Committee on Road Law recommended the adoption of the Sims law by the Legislature. This law puts the control and repairing of all roads of dirt, stone, gravel, or other material in the hands of the fiscal or county courts. It provides that a yearly tax of 25 cents on the \$100, and a capitation tax not to exceed \$1.50, shall be levied for the construction and maintenance of roads.

**Natural Gas.**—Great excitement was caused in the early part of the year by the discovery of oil and natural gas at Petroleum, in the southern part of the State. A Pittsburg company leased a large tract in the section, and bored wells, one of which emitted a stream of natural gas, and the others oil. The discovery raised the price of land from \$2 to \$100 an acre.

**The Lottery.**—A decision was rendered Dec. 16, by the Court of Appeals, against the lottery in the State. The decision holds that the State had no constitutional right to contract its police powers away, and the purchase of the lottery franchise by authority of the Legislature will not stand. The general offices and branches of the Frankfort lottery were closed Dec. 18.

**Chickamauga.**—The State commissioners appointed to locate the positions of Kentucky troops on the battlefield of Chickamauga—now a national park—were on the ground in October. Kentucky had 18 regiments engaged on the National side in the battle, and 5 on the Confederate side. The positions of the Orphan Brigade and the spot where Gen. Hardin Helm fell, and the point at which Gen. Croxton's brigade opened the battle were fixed, as well as other points of interest to the Kentucky soldiers.

**The Muhlenberg Taxes.**—An armed force of deputies was taken by the United States marshal to Central City, in May, to enforce collection of the county-bond taxes. The marshal had instructions to see that the special collector of taxes for that county, appointed by the United States circuit court, was protected from violence while engaged in his duty, and to protect all property that may be seized for taxes. This is the culmination of a long litigation, in which the people of Muhlenberg County have sought to resist their bonded indebtedness, which was originally \$400,000, voted in 1868, in aid of the construction of the Elizabethtown and Paducah Railroad, 26 miles of which runs through Muhlenberg County. For five years after making the subscription the county levied and paid a sufficient tax to keep the interest on its bonds paid up. Then a spirit of repudiation took possession of the dominant element in the county, which resulted in the resignation of the justices of the peace, who, they supposed, had exclusive power to levy taxes, and the refusal of the sheriff to collect taxes. Early in 1885 a funding board proposed to compromise the debt by issuing new bonds for 30 cents to the dollar of the old debt, having twenty years to run at 6 per

cent. Up to July, 1885, about one third of the debt had been refunded, when 600 or 700 citizens filed a bill in the Muhlenberg circuit court enjoining the funding board from further refunding, the county judge from further levying taxes, and the sheriff from collecting taxes, or to pay either the original or the compromise bonds. This case was transferred to the United States circuit court, where the injunction was discharged. It was then appealed to the Supreme Court, which court remanded it to the State court. The State court discharged the injunction, and the Court of Appeals, in February last, affirmed that decision. In April the special collector made affidavit that he was threatened with violence, and the bondholders obtained an order directing the marshal to go into Muhlenberg County and enforce the collection of taxes and protect the collector. The debt, with interest from 1873, amounted to nearly \$1,000,000.

The residents of the county deny that the collector has ever been in any danger. A meeting of citizens was held at Greenville, May 29, and it was agreed that the county court should levy a tax of \$1 on each \$100 worth of property, to be based on the assessment of 1892, the tax to be collected by the sheriff.

**Legislative Session.**—The Legislature met in January, and adjourned July 3. Judge William Lindsay, Democrat, was elected United States Senator, to fill the vacancy caused by the resignation of John G. Carlisle, by a joint vote of 79 against 19 for Augustus E. Willson, the Republican candidate. The term will expire March 4, 1895.

The question of removal of the capital came up, Louisville, Lexington, Danville, and Bowling Green, being the competing sites. The name of Louisville was selected to fill the blank in the bill, and then the bill was voted down. Frankfort was illuminated on the evening of the day the vote was taken.

A new charter, granted to Louisville by the Legislature, was vetoed, on the ground that it permitted banks, trust companies, and the like, to be taxed by license or by a certain percentage of their gross incomes, while the Constitution provides that taxes "shall be uniform upon all property subject to taxation," and "all property, whether owned by natural persons or corporations, shall be taxed in proportion to its value, unless exempted by this Constitution; and all corporate property shall pay the same rate of taxation paid by individual property."

A bill on charitable institutions was vetoed. It was similar to the old bill, except that it abolished the Institution for Feeble-Minded Children and provided for the maintenance of an asylum for insane women instead. It was vetoed on the ground that it was unconstitutional, violating the provision that no law shall relate to more than one subject, and that shall be expressed in its title. Many other bills and resolutions were vetoed on constitutional grounds.

The act prohibiting the sale of intoxicating liquors was repealed for certain counties and certain precincts, according to the operation of the local-option law.

Other acts passed and approved were as follows:



Accepting the provisions of an act passed by Congress to apply a portion of the proceeds of the public lands to the more complete endowment and support of the colleges for the benefit of agriculture and mechanic arts.

Authorizing persons whose lands have been sold for taxes prior to Jan. 1, 1893, and purchased by the State or county, to redeem them.

Providing for and regulating the ventilation of coal mines.

To confirm the validity of funding and refunding bonds issued by cities of the second class under and by virtue of an act approved July 4, 1892.

Definitely fixing the compensation of the Governor at \$6,500 a year.

Dividing the State into 38 senatorial districts.

Regulating the sale of dynamite.

Repealing all laws and parts of laws that authorize a municipality to become a stockholder in a company, association, or corporation, or to obtain or appropriate money, or to loan its credit to any corporation or individual, and declaring an emergency.

Requiring officers and directors of incorporated burying grounds to make annual reports of their financial condition to stockholders therein.

Prohibiting barbering on Sunday.

To protect citizens from empiricism. This is described under the head of medical registration.

To regulate the liability of insurance companies that take life or accident risks on live stock.

To establish a State board of pharmacy.

To provide more fully for protection of the lives and health of persons employed in coal mines.

Defining the property rights of husband and wife—the proportion of estate falling to the survivor in case of the death of either.

Resolutions were adopted as follow:

Providing for the appointment of a committee to investigate the operations of the geological survey. Providing for a committee to inquire as to the probable cost of constructing and maintaining a house of reform. Directing the Attorney-General to prosecute lottery companies. Instructing the State's delegation in Congress to vote for granting franking privilege to State Commissioners of Agriculture. Providing that the inspector of mines serve as curator for the cabinet and property of the geological survey.

**Political.**—The Republican League of the United States met in convention at Louisville, May 10 and 11. The ratio of representation

was 6 delegates at large from each State and Territory, and 4 from each congressional district, and 1 from each college Republican club in the United States. The National Convention of the American Republican college League was held at the same place, May 11. Delegations from 33 States responded at the opening roll call. Resolutions were adopted expressing

Satisfaction in the passage of a general law for the safety of life and limb of railway employees, upon recommendation of President Harrison, by a Republican Congress and in conformity with the expressed pledge of the National Republican Convention. Declaring faith in a genuine secret-ballot law, fortified by efficient acts for the suppression of corrupt practices in elections. Recommending the establishment of a system of arbitration for the adjustment of differences arising between labor and capital. Demanding the abolition of private armed forces represented by the Pinkerton and like agencies, and the suppression of all public gambling, whether in food products or by means of lottery tickets. Urging an amendment to the Constitution making the President ineligible to a second term. Expressing a desire to see the Monroe doctrine enforced, and declaring that, since "the Democratic party, for the first time in thirty-two years, has succeeded to power in both the executive and legislative departments of the Government, we now direct attention to the fact that it should either give the people a fair trial of the policies advocated in its initial platform, or admit that it gained supremacy by gross misrepresentation and hypocrisy.

A resolution recommending to the favorable consideration of the Republican clubs the question of woman suffrage was referred to the Committee on Resolutions, which reported adversely. When put to vote in the convention, it was adopted by a vote of 375 to 185. The convention adjourned to meet in Denver in May, 1894.

Elections were held in November for members of the General Assembly. A light vote was cast. There was a Democratic gain, attributed partly to the redistricting of the State by the last Legislature. The Populists lost heavily, their leading man, Pettit, candidate for State Senator, being defeated by a large majority. The Democrats elected their candidate for Mayor of Louisville by 6,672 majority.

## L

**LABOR CHURCH.** The Labor Church is the name of a religious movement which has made considerable advance among the working men and trades unions of England. Dissatisfied with the preaching and various features of the services and usages of the regular churches, whether established or dissenting, they have withdrawn from them, and have set up organizations of their own, chiefly in the business and industrial centers of the country, choosing preachers from among their own number. The following statement of principles of the organization was distributed through the congregation at the institution of the Labor Church in Birmingham, Oct. 8:

1. The labor movement is a religious movement.
2. The religion of the labor movement is not a class religion, but unites members of all classes in working for the abolition of commercial slavery.

3. The religion of the labor movement is not sectarian or dogmatic, but free religion, leaving each free to develop his own relations with the power that brought him into being.

4. The emancipation of labor can only be realized so far as men learn both the economic and moral laws of God, and heartily endeavor to obey them.

5. The development of personal character and the improvement of social conditions are both essential to man's emancipation from moral and social bondage.

**LIBRARY ECONOMY, PROGRESS OF.** In the "Annual Cyclopædia" for 1886 appears an article giving a brief *résumé* of the publications of the Bureau of Education on "Public Libraries in the United States"; a short historical account of the inception, growth, and work of the American Library Association; a general statement of the principles and practice of library economy as then understood; and a summary of the latest report of the Commis-

sioner of Education (1884-'85) on library statistics.

This paper therefore takes up the subject in its various branches at that point, bringing statistics, etc., up to date as far as possible. Fortunately for our purpose, appears just at this time the second special "Report on the Public Libraries of the United States," as well as the "Statistics of Public Libraries in the United States and Canada," for 1891, by Weston Flint, statistician of the Bureau of Education (Washington, 1893). The present has been called the golden age of libraries in America; that it is so is due, more than to any other cause, to the appreciation of the work of libraries by the Federal and State governments, and to the generous aid they have given to the undertakings of the Library Association. Commissioner Harris, in his letter of transmittal, says:

Next after the school and the daily newspaper comes the library in instructive power. These three institutions are the great secular means which our people have to prepare themselves for their singular destiny. The school, for the most part, finds its function in teaching *how* to read; the newspaper and the library furnish *what* to read. It is clear that one of the most important interests in education is to be found in connecting closely the common school with the public library. It is common to call a person educated who knows the rudimentary branches. . . . By these he is enabled to help himself to the information and wisdom stored up in the library. He is prepared to begin the work of educating himself. To be educated in any true sense of the word, he must use the library, and master the experience of mankind. The school gives the preliminary preparation for education, and the library gives the means by which the individual completes and accomplishes his education.

Mr. Harris discusses at some length the advantages and disadvantages of both oral and text-book methods of teaching, and says: "The American school has some sort of justification for its much-blamed adherence to the text-book method. . . . What is good in our American system points toward this preparation of the pupil for independent study of the book by himself. It points toward acquiring the ability of self-education by means of the library." He then mentions a "practical device" by which the common school and the library can work together to the great advantage of the student, namely, supplementary reading at home, and, calling the library "the most important link in the great movement that has recently spread hither from England—university and school extension," adds:

Another great point is that the books are taken home by the pupils into families who have no accumulation of books, or, at best, only of such books as lack popular interest. These books taken home are picked up by the parents, and older brothers and sisters, and read by them. This makes the supplementary reading system an educator of the people *as* people—an extension of the school that is of vital importance. . . . The school, the newspaper, and the library, working together in mutual helpfulness, will form the very potent means of education which is necessary for the universal elevation of the people that characterizes the history of the world at the present day.

Dr. Nörrenberg, custodian University Library, Kiel, Germany, in charge of the German library exhibit at the World's Fair, who has made a

careful study of American libraries and their administration, said, in an address at Chicago: "You Americans are kind enough to say Germany is ahead in higher education and universities, but I will say America is ahead of the whole world in the education of the people by public libraries." James D. Brown, Librarian Clerkenwell Public Library, London, says, in his report to his commissioners of his visit to American libraries and to the World's Congress of the Columbian Exposition: "In one very important respect the American libraries are superior to those of Britain, and that is the closer connection which has been established between schools and other parts of the educational machinery of the country. This has resulted in a more generous recognition of public libraries than has been obtained in Britain, and furnishes an example which might well be copied by our government, when an extended scheme of education comes to be considered."

It is undoubtedly along this line of new departure that the libraries of the United States have made their greatest and most admirable progress in the past ten years. The function of the public library as a public educator having been recognized by Federal, State, and municipal governments, the libraries' department is everywhere being rapidly organized as a legitimate and necessary part of the educational system. The other forms of school and school-district libraries having been found faulty and cumbersome in mechanical detail (entailing upon the school management duties and labor, additional to the work of teaching, impossible to carry on efficiently and successfully), these libraries are being, in many parts of the country, merged in the public libraries. Several of the largest and finest libraries of the United States are of this class—notably the Public Library of St. Louis—a model of its kind. The schools are relieved of the care of their necessarily small collections of books, and are given all possible privileges in the use of the large libraries, which themselves, being usually under the control of the boards of education, are being specially adapted to educational work. This is the central idea of the unique and new library law of the State of New York, which places all such institutions under the control of the Regents of the University. As an adjunct of university extension work, *traveling libraries*, with their annotated lists and appliances for carrying on the work of the library, are sent out free of charge from the Public Libraries Department of the State Library at Albany to any town or village of the State which may make application for such privileges to the Regents of the University.

Another growing educational feature of the public libraries is their union, usually under one roof, with art, industrial, and trade institutes, as the Buffalo Library and the Pratt Institute of Brooklyn. This kind of library has notable examples of long standing in England, as the Birmingham Public Library and Art Institute, and the Liverpool Free Library.

**Statistics.**—The following is a summary of the second volume of "Statistics of Public Libraries in the United States," issued in 1892:

The list in the first volume endeavored to record all libraries of 300 or more volumes, while the second



volume contains only those of 1,000 volumes and over. To make a comparison, therefore, between the two it is necessary to deduct from the list of 1885 all libraries so small as to be excluded from the list of 1893. Omitting these, the report for 1885 contained 2,987 libraries. The present report gives 3,804, or an increase of over 27 per cent. The proportion of growth averages nearly 2,000 volumes to each library, or an increase in books of 66 per cent. In other words, in less than a decade the number of books accessible to readers has increased 12,000,000, or rather more than 1 book to every 6 inhabitants.

In the main list, which fills all but 33 pages of the report, the information is entered under the following heads: State and post-office; name of library; founded; own or rent building; how supported—taxation, rent, corporation, fees; circulating, reference, or both; free or subscription; class—general, theological, school, college, society, medical, law, etc.; number of bound volumes; number of unbound pamphlets; number of bound volumes added during 1891; number of unbound pamphlets added during 1891; number of volumes issued for home use; number of volumes issued for use within the library; amount received from taxation, 1891; amount received from other sources; amount of permanent endowment; amount expended for books in 1891; value of building; librarian or reporting officer.

Mr. Flint, in his introduction, has tabulated a most interesting series of statistics, covering the following subjects: Statement of statistics of libraries in the United States in former reports, 1870-'90; libraries in the United States in 1891 of 1,000 volumes and over, summary of statistics of, classification according to size; summary of statistics as to support of libraries in the United States; summary of statistics of libraries in the United States as to ownership of buildings, circulating or reference, free or subscription, etc.; summary of statistics of libraries as to class; general summary of statistics of libraries in the United States as to number of volumes, population to library, and books to every 100 of the population in 1891; distribution of libraries in the United States, and the number of volumes, by geographical divisions; increase in number and size of libraries from 1885 to 1891; general summary of statistics of number of libraries, volumes, population to library, and books to every 100 of the population, in 1885; increase in number of libraries from 1885 to 1891; increase in number of volumes in libraries from 1885 to 1891; increase in average size of libraries from 1885 to 1891; decrease of population to a library from 1885 to 1891; increase in number of books to every 100 of the population from 1885 to 1891, with percentages; summary of statistics of libraries of the Dominion of Canada for 1891, by provinces; classification of libraries in Canada, by provinces; statistics, by provinces, showing how libraries in Canada are supported; summary, by provinces, showing whether or not fees are charged in the

libraries of Canada; summary, by provinces, showing the number of libraries in Canada that are reference, or circulating, or both; detailed statistics of libraries of over 1,000 volumes in the United States in 1891, arranged by States and Territories.

There are now 25 libraries in the country exceeding 100,000 volumes, and 65 exceeding 50,000. In the total libraries of over 1,000 volumes, half are in the division called in the report "the North Atlantic," which includes the New England States, New York, New Jersey, and Pennsylvania; and an even greater proportion is shown in the relative number of books in these various divisions, the North Atlantic having over 16,500,000 of the total of 31,000,000. Other figures under these groupings show even more strongly this condition. Thus, omitting fractions, every 9,000 people in the North Atlantic section have a library, while it takes 26,000 in the South Atlantic, 42,000 in the South Central, 20,000 in the North Central, and 15,000 in the Western division. So also in the average number of books. In the North Atlantic section, to every 100 of population there are 95 books; in the South Atlantic, 48; South Central, 12; North Central, 33; and Western division, 53.

The tables appended are drawn from Mr. Flint's lists, and are presented in this form to show more clearly the provision made by each State for reading for the people, and the responding use made of such provision by the people through a few of the larger libraries.

The average number of volumes in libraries to every 100 of population is shown in the following table:

District of Columbia.....	924	Iowa.....	25
Massachusetts.....	257	Missouri.....	25
Rhode Island.....	164	Virginia.....	22
Connecticut.....	151	Kansas.....	21
New Hampshire.....	118	Utah.....	21
California.....	95	Kentucky.....	20
Nevada.....	92	Louisiana.....	20
Maryland.....	89	South Carolina.....	18
Vermont.....	87	Montana.....	17
Maine.....	82	Georgia.....	15
New York.....	74	Tennessee.....	15
New Jersey.....	53	Nebraska.....	15
Pennsylvania.....	51	Florida.....	14
Illinois.....	49	Wyoming.....	13
Delaware.....	44	North Carolina.....	12
Ohio.....	41	Mississippi.....	11
Michigan.....	39	South Dakota.....	10
Wyoming.....	38	Arkansas.....	9
Wisconsin.....	35	New Mexico.....	9
Colorado.....	34	Alabama.....	8
Arizona.....	30	Idaho.....	8
Oregon.....	28	North Dakota.....	7
Minnesota.....	26	West Virginia.....	5
Indiana.....	25	Texas.....	4

The libraries in the United States of 60,000 volumes and over, in 1891, were as follows:

State and Post-Office.	NAME OF LIBRARY.	Bound volumes.
1. Washington, D. C.....	Library of Congress.....	659,843
2. Boston, Mass.....	Public Library.....	556,283
3. Cambridge, Mass.....	Harvard University Library.....	400,332
4. Chicago, Ill.....	University of Chicago Library.....	380,000
5. New York city, N. Y.....	Mercantile Library Association.....	239,793
6. New York city, N. Y.....	Astor Library.....	238,946
7. New Haven, Conn.....	Yale College Library.....	234,500
8. San Francisco, Cal.....	Sutro Library.....	200,000
9. Chicago, Ill.....	Public Library.....	175,874
10. Boston, Mass.....	Boston Athenæum Library.....	173,831
11. Cincinnati, Ohio.....	Public Library.....	169,225
12. Philadelphia, Pa.....	Mercantile Library Company.....	166,000
13. Philadelphia, Pa.....	Library Company of Philadelphia.....	165,487
14. Albany, N. Y.....	New York State Library.....	157,114
15. New York city, N. Y.....	Columbia College Library.....	135,000
16. Washington, D. C.....	House of Representatives.....	126,000
17. Brooklyn, N. Y.....	Brooklyn Library.....	113,251
18. Ithaca, N. Y.....	Cornell University Library.....	111,007
19. Baltimore, Md.....	Peabody Institute Library.....	110,000
20. Detroit, Mich.....	Public Library.....	108,720
21. Baltimore, Md.....	Enoch Pratt Free Library.....	106,663

State and Post-Office.	NAME OF LIBRARY.	Bound volumes.
22. Princeton, N. J.	College of New Jersey Library	105,521
23. Washington, D. C.	Surgeon-General's Office	104,300
24. Annapolis, Md.	Maryland State Library	100,000
24a. Philadelphia, Pa.	University of Pennsylvania	100,000
25. Worcester, Mass.	American Antiquarian Society	95,000
26. New York city, N. Y.	Apprentices' Library	93,374
27. New York city, N. Y.	Society Library	90,000
28. Worcester, Mass.	Free Public Library	85,674
29. Sacramento, Cal.	California State Library	85,000
30. Frankfort, Ky.	Kentucky State Library	80,000
30a. St. Louis, Mo.	Public Library	80,000
31. Springfield, Mass.	City Library Association	79,218
32. Chicago, Ill.	Newberry Library	79,000
33. Ann Arbor, Mich.	University of Michigan Library	78,705
34. St. Louis, Mo.	Mercantile Library Association	78,300
35. Woodstock, Md.	Woodstock College Library	75,000
35a. Hanover, N. H.	Dartmouth College Library	75,000
35b. New York city, N. Y.	New York Historical Society	75,000
36. Boston, Mass.	State Library of Massachusetts	73,324
37. Washington, D. C.	United States Senate Library	72,502
38. Madison, Wis.	State Historical Society Library of Wisconsin	72,000
39. Providence, R. I.	Brown University Library	71,000
40. San Francisco, Cal.	Public Library	69,914
41. New York city, N. Y.	Union Theological Seminary Library	67,089
42. Cleveland, Ohio	Public Library	66,920
43. Buffalo, N. Y.	Buffalo Library	66,786
44. South Bethlehem, Pa.	Lehigh University Library	66,782
45. New York city, N. Y.	Lenox Library	65,000
46. Binghamton, N. Y.	Central High School Library	64,241
47. Columbus, Ohio	Ohio State Library	63,500
48. San Francisco, Cal.	Mercantile Library Association	62,000
49. Milwaukee, Wis.	Public Library	61,111
50. Georgetown, D. C.	Riggs Memorial Library	61,104
51. New Bedford, Mass.	Free Public Library	60,000
51a. Salem, Mass.	Essex Institute Library	60,000
51b. Jackson, Miss.	Mississippi State Library	60,000
51c. Cincinnati, Ohio	Young Men's Mercantile Library Association	60,000
51d. Harrisburg, Pa.	State Library of Pennsylvania	60,000

NOTE.—The above grading may not be absolutely correct, as, in the statistics of some libraries, departments are given as separate collections, while in others all are united.

The libraries of the United States issuing over 100,000 volumes for home use, in 1891, were:

State and Post-Office.	NAME OF LIBRARY.	Volumes in library.	Issued for home use.
1. Boston, Mass.	Boston Public Library	556,283	1,812,432
2. Chicago, Ill.	Chicago Public Library	175,874	998,651
3. Baltimore, Md.	Enoch Pratt Free Library	106,663	434,449
4. New York city, N. Y.	New York Free Circulating Library	58,000	391,570
5. Newark, N. J.	Newark Free Public Library	31,188	306,066
6. Cleveland, Ohio	Cleveland Public Library	66,920	280,815
7. Minneapolis, Minn.	Minneapolis Public Library	49,000	279,173
8. Detroit, Mich.	Detroit Public Library	108,720	274,060
9. New York city, N. Y.	Apprentices' Library	90,374	233,549
10. Cincinnati, Ohio	Cincinnati Public Library	156,673	221,473
11. Omaha, Neb.	Omaha Public Library	36,235	175,102
12. Brooklyn, N. Y.	Pratt Institute Library	40,000	173,594
13. New York city, N. Y.	Aguilar Free Library	17,675	159,933
14. Milwaukee, Wis.	Milwaukee Public Library	61,111	155,644
15. Indianapolis, Ind.	Indianapolis Public Library	50,015	140,992
16. San Francisco, Cal.	Mechanics' Institute	57,984	139,090
17. Springfield, Mass.	City Library Association	79,218	136,997
18. New York city, N. Y.	Mercantile Library Association	239,793	136,646
19. San Francisco, Cal.	Free Public Library	69,914	134,622
20. Worcester, Mass.	Free Public Library	85,674	129,760
21. Brooklyn, N. Y.	Union for Christian Work	20,749	123,707
22. Grand Rapids, Mich.	Public School Library	26,202	126,315
23. St. Louis, Mo.	Public Library	80,000	121,970
24. Salem, Mass.	Public Library	20,000	120,243
25. St. Paul, Minn.	Public Library	30,274	116,618
26. Los Angeles, Cal.	Public Library	25,237	116,263
27. Lynn, Mass.	Lynn Free Library	44,821	113,548
28. Cambridge, Mass.	Public Library	34,000	110,446
29. Jersey City, N. J.	Free Public Library	19,859	107,538
30. St. Louis, Mo.	Mercantile Library Association	78,300	106,979
31. Newton, Mass.	Free Library	34,730	105,988
32. Buffalo, N. Y.	Buffalo Library	66,786	104,244
33. Rochester, N. Y.	Central Library	19,564	103,018
34. Dayton, Ohio	Public Library	29,662	101,610

**Associations and Clubs.**—The American Library Association (national), organized with 100 members at Philadelphia in 1876, and incorporated 1879, has more than 1,200 members on its list. It includes a large number who ap-

preciate the fact that the greatest educational problem before the country is the development of public libraries as a supplement to the public schools, and who recognize in this association the organized forces now shaping the modern



library movement in the United States. Sixteen meetings have been held, constantly developing new features of interest and laying out new lines of work.

The "American Library Association Handbook" is kept in print and revised up to date, and may be had by any one interested in library matters on application to the President of the Association, J. N. Larned, Superintendent Buffalo (N. Y.) Library, or to the Secretary, F. P. Hill, Newark (N. J.) Public Library.

Within the association are several suborganizations of those engaged in the same specific work, or seeking to accomplish some common purpose too technical or novel, or involving too great outlay, to belong properly to the association at large.

*The Publishing Section*, organized in 1886, has as its object to secure the preparation and publication of such catalogues, indexes, and other bibliographical helps as may be best produced by co-operation. It publishes each year a "Co-operative Index to Periodical Literature," and thus supplements "Poole's Index." These annual supplements, once in five years, are combined in a single alphabet and again printed.

The section published in 1890 "Reading for the Young," by John F. Sargent—a classified, annotated, and indexed list of best books for young people. It has just issued the A. L. A. (American Library Association) "Index to General Literature," indexing in a single alphabet of subjects several hundred volumes of miscellaneous essays, collected biography, and travel, historical monographs, reports of societies, etc. The section is now greatly interested in the proposal to publish signed and dated reviews of new books by the best available authority in each field, and, besides the full review, a condensed catalogue note stating whether the work is elementary or advanced, and its relative value, and noting important errors and where full criticism may be found. Several annotated lists of books on special subjects have been published, and others are to follow.

The important work immediately before this section is the preparation and publication of the "A. L. A. Catalogue," intended to be a classified and annotated bibliography of 25,000 to 50,000 best books on the plan of Sonnenschein's (English) "20,000 Best Books." This will be the co-operative work of specialists, edited by the association.

*Central card cataloguing*—i. e., the issue of printed catalogue cards to libraries from a central office—discussed since 1877, has in this year become an established fact. The Rudolph Index Company, of New York city, and the Library Bureau of Boston, are now prepared to supply printed titles of new books of the United States and Great Britain simultaneously with the date of publication, and will continue the work, to include 100,000 volumes of standard books.

There is also a *College Library Section*, a *Trustees' Section*, a *State Libraries*, and a *Law Section*, each having its own organization and special work, and holding annual meetings in connection with the conferences of the association.

*Allied agencies* are the "Library Journal," official organ of the American Library Association, published monthly at 28 Elm Street, New

York city, and the Library Bureau, for the manufacture and sale of library fittings and supplies, with a publication and printing office for preparation of catalogues, etc., and an employment department. The offices are at 146 Franklin Street, Boston, Mass., and Stewart Building, New York city.

*Clubs.* On June 18, 1885, the New York Library Club was organized to promote, by meetings, discussion, and co-operation, the library interests of New York and vicinity. Its success has shown the need of similar clubs in all great cities, wherever, within a convenient distance, there are a number of library workers inspired by the modern spirit of progress. The Chicago club was organized Dec. 17, 1891; Philadelphia, Jan. 29, 1892.

*State Associations.* The New York State Association, organized July 11, 1890, was the first association devoted wholly to promoting the library interests of a single State. The handbook of this organization may be had by applying to the President, W. T. Peoples, Mercantile Library, New York city. Similar associations have been organized in Iowa, New Hampshire, Massachusetts, New Jersey, Connecticut, Wisconsin, Maine, Michigan, Kansas, southern California, Minnesota, Indiana, Colorado, and Pennsylvania.

*Schools and Training Classes.*—The American Library Association recognizes officially these institutions for the training of librarians, and has among its standing committees one specially appointed to supervise the work. The *Library School* was opened at Columbia College in January, 1887. The first year a course of three months in library economy was offered, and 20 students were entered. At the middle of the term the course was extended to four months, and at its end a majority of the class decided to take the two years' course then offered. The second year the annual session was extended to seven months, and in the third to eight. In the fourth year the school was transferred to the State Library at Albany, under the control of the Regents of the University of the State of New York. Certificates and diplomas were awarded to 19 students. In the fifth year a course of study was laid out, and the conferring of a degree (B. L. S., bachelor of library science) was authorized. It is conducted by a faculty of 12 professors and instructors, and lectures are given by nonresident librarians and others.

There are *Training Classes* at the Pratt Institute, Brooklyn, N. Y.; the Drexel Institute in Philadelphia; the Armour Institute in Chicago (each directed by a graduate of the Library School); the Free Public Library at Los Angeles, Cal., and the Summer School conducted by Mr. Fletcher at Amherst, Mass. Admissions to these classes are not limited to graduates of colleges or academies, the examinations are not so severe, and the courses of study include English composition and general literature.

*Conference of Librarians.*—At the conference held in Chicago, in July, 1893, the programme was so planned as to make the proceedings a handbook of library economy, setting forth on each subject treated the points of agreement to which the profession has attained, and also the points of difference. Topics were assigned to several librarians by vote of their

*confrères*, and the authors aimed to present on each subject a judicial digest of previous articles, papers, discussions, and experience. As finally printed by the Bureau of Education, the volume will represent the position of the profession on the most important topics of library economy, etc., at the close of the 1893 meeting, supplementing the special report which was published in 1876.

**Libraries at the World's Fair.**—The American Library Association Model Library was proposed as a means of helping small libraries throughout the country in the selection, purchase, and cataloguing of books. It is composed of 5,000 volumes, which the association recommend for an average public library. The selection was made by a committee, who passed upon the suggestions of about 75 librarians and specialists. When the lists were completed publishers were asked to give the books. The invitation was most generously responded to, and the books were placed in the United States Government building, with the most perfect apparatus, and in connection with an architectural exhibit of plans, photographs, etc., of the largest and finest library buildings in this and in foreign countries, and with a large collection of model appliances showing the best methods of work and the latest inventions and devices. The whole exhibit has been permanently deposited with the Bureau of Education at Washington. A catalogue has been prepared, is published by the Bureau of Education, and will be sent free to libraries and schools.

The Comparative Library exhibit contained samples, models, and photographs of blanks, forms, appliances, furniture, and fittings used in libraries. A special feature was the collection of answers to questions on all important departments of library administration. Questions were printed on uniform blanks, and the returns are bound together by subject. These volumes show in compact form the library methods in use in 1893, and what changes are advocated. The collection now forms part of the great Bibliothecal Museum of the New York State Library at Albany.

**The Woman's Library.** In the Woman's Building, in a superb room furnished by the women of New York State, were collected about 7,000 volumes written by women of this and other countries. This library will be preserved in a memorial building as the nucleus of an international and historical exhibition of woman's work in literature. Foreign women sent contributions of special value—France, 800 volumes; Bohemia, 300; Sweden, 130; Italy, 150; Germany, 300; Great Britain, 500; Japan, 50.

Of the many foreign libraries, the largest and finest were the German, French, and Swedish, though all were most worthy of praise. Nearly all were carefully catalogued; and since these catalogues were distributed with generosity, their value to the libraries of this country can hardly be estimated, giving such an opportunity of becoming acquainted with the best libraries of all countries and their methods as could otherwise be gained only at the expense of much travel and study abroad. Nearly every State of the Union had libraries in its State building, or in connection with its educational exhibit.

## LITERATURE, AMERICAN, IN 1893.

The financial stringency of the year does not appear to have materially affected the book trade, for more books were published in 1893 than have ever been recorded by the "Publishers' Weekly"—5,134 in all—an excess of 272 over the record of 1892 (4,862), previously the largest known. It is perhaps worthy of remark that of the multitudinous announcements made by publishers in the spring and fall, hardly one book went over into 1894. And as there was no falling off in numbers, neither was there in the quality of the volumes sent out. More of our novels came to us from English and other foreign sources, the standing being 834 of such to 263 American; but with this exception, and that of one other department, viz., biography, the books supplied to the American reading public were from native authors. Of the total 5,134 books, 4,281 were new; 2,803 were by American authors, including new editions, 1,180 were of foreign origin, manufactured in the United States, and but 1,151 were imported in sheets from England. The greatest increase was shown in works of theology, law, education, physical and mathematical science, general literature, sports and amusements, and the useful arts. The largest decrease was in fine-art and illustrated books (though this is taken as an indication of improvement in public taste), and there was also a marked falling off in history, political and social science, and biography.

**Biography.**—Works falling under this department always possess a charm, and many of those published in 1893 had especial value. The collection of "The Writings of George Washington," collated and edited by Worthington C. Ford, was rendered complete by the issue of the thirteenth and fourteenth volumes, and "The Story of Washington," by Mrs. Elizabeth Eggleston Seelye, which followed her "Story of Columbus" in the "Delights of History" series, had an introduction by her father, Edward Eggleston. Vols. III and IV completed "The Writings and Correspondence of John Jay, First Chief Justice of the United States," edited by Henry P. Johnston, and Paul Leicester Ford gave us Vol. II of "Writings" of Thomas Jefferson. James Schouler presented "Thomas Jefferson" in a somewhat new aspect as regards his later political career in the "Makers of America" series. Another volume of the same series was "Peter Stuyvesant," by Bayard Tuckerman, who wrote also on "William Jay and the Constitutional Movement for the Abolition of Slavery." "The Life and Writings of Jared Sparks," in two volumes, by Herbert B. Adams, was a valuable contribution, and to the same period belong the "Writings" of Thomas Paine, edited by Moneure D. Conway, with introductions and notes to the four volumes, one of which appeared during the year. "Paul Jones," by Molly Elliot Seawell, belonged to the "Young Heroes of Our Navy" series, while "Major-General Wayne and the Pennsylvania Line in the Continental Army" was the theme of C. J. Stillé. One of the most romantic figures in the history of our country was dealt with by Alfred M. Williams in "Sam Houston and the War of Independence in Texas." "Christopher Gist's Journals" were published together for the first time, and cover explorations of the Ohio river and its branches in 1750-53. "Select Speeches of Daniel Webster, 1817-1845" had an introduction and notes by A. J. George, while "The Life and Times of C. G. Meminger," by Henry D. Capers, and "The Life and Times of William Lowndes Yancey," by John Witherspoon Du Bose, throw much light on the financial policy as well as the origin of the Confederate States. Two more volumes were written upon "Abraham Lincoln" by John T. Morse, Jr., in the series of "American States-



men," and Joel Benton edited "Greeley on Lincoln," with which were included letters of the great journalist to Charles A. Dana and a lady friend. Vols. III and IV of the "M memoir and Letters of Charles Sumner," by Edward L. Pierce, completed a work the first half of which was given to the public in 1877. In the "Great Commanders" series, "General Greene" was by Capt. Francis Vinton Greene, "General Jackson," by James Parton, "General Johnston" (Joseph E.), by Robert M. Hughes, and "General Thomas," by Henry Coppée. A critical biography of "General George H. Thomas," by Donn Piatt, was also published, the concluding chapters of which were by Gen. H. V. Boynton. "Leonidas Polk, Bishop and General," by William M. Polk, M. D., in two volumes, and "Memoirs of William Nelson Pendleton, D. D.," the Confederate general of artillery, by his daughter, Susan P. Lee, may be classed together. "Personal Reminiscences, 1840-1890," by L. E. Chittenden, included some not hitherto published of Lincoln and the war, and he also published the true and romantic story of "An Unknown Heroine." A new issue of Mrs. Elizabeth B. Custer's "Tenting on the Plains" was made and given for the first time to the general trade. A "Life of Hon. James G. Blaine," by T. C. Crawford, was published, and in the "Men of Achievement" series we had "Statesmen," by Noah Brooks, "Men of Business," by W. O. Stoddard, and "Inventors," by Philip G. Hubert, Jr., while "Explorers and Travelers" found a sympathetic chronicler in Gen. A. W. Greely. Mrs. Sarah K. Bolton's latest volume was upon "Famous Voyagers and Explorers." In the series of "American Reformers," "John B. Gough, the Apostle of Cold Water," was by Carlos Martyn, and "Henry Ward Beecher, the Shakespeare of the Pulpit," by John H. Barrows, D. D. Redelia Brisbane supplied a mental biography and character study of "Albert Brisbane." The first volume of "Orations and Addresses by George William Curtis," on the principles and character of American institutions and the duties of American citizens, was edited by Charles Eliot Norton. "The Builders of American Literature," whose biographical sketches we owe to Francis H. Underwood, were all born previous to 1826; to the same hand belongs "The Poet and the Man," recollections and appreciations of James Russell Lowell, while two volumes of the "Letters of James Russell Lowell," edited by Charles Eliot Norton, are essentially an autobiography as complete as it is charming. Two volumes also contain the valuable "Letters of Asa Gray," edited by his widow, Jane Loring Gray, and from Charles F. Holder we have "Louis Agassiz" in the "Leaders of Science" series. "Descartes," in the "Modern Philosophers" series, was by Dr. Joseph Torrey. "A. Bronson Alcott, His Life and Philosophy," were treated by F. B. Sanborn and Hon. W. T. Harris, largely from hitherto unpublished materials, and George S. Merriam edited a memorial volume by friends of "Noah Porter." Notes of the life and friendship of "Whittier" we owe to Mrs. James T. Fields, "Personal Recollections of John G. Whittier" (prefaced by an unpublished poem of Edna Dean Proctor) to Mary B. Claflin, and "Whittier with the Children" to Mrs. H. M. Lothrop (Margaret Sidney). "Personal Recollections of Nathaniel Hawthorne," by his college classmate, Commodore Horatio Bridge, were published posthumously. The "Memoirs" of Charles Godfrey Leland (Hans Breitmann) abound in interest, and William Dean Howells gives us a glimpse at his early experiences in "My Year in a Log Cabin." Edward Everett Hale described "A New England Boyhood" with all the charm we should expect, and Mrs. Laura E. Richards introduced others than her young readers to the home life of Dr. and Mrs. Julia Ward Howe in her series of papers "When I was your Age," "The One I knew the Best of All," by Mrs. Frances Hodgson Burnett, tells the story of her childhood. By no hand could the "Life and Art of Edwin Booth" have been more sympathetically touched than that of his near and dear friend William Winter, and Laurence Hutton

also offered a tribute based on observation and an intimate knowledge, entitled "Edwin Booth" in Harper's "White and Black" series. "Leaves from the Autobiography of Tommaso Salvini" were welcomed by his admirers. Henry T. Finck devoted two volumes to "Wagner and his Works," and Daniel W. Wilder wrote "The Life of Shakespeare," copying from the best sources without comment. A. Growoll made a short biographical and bibliographical sketch of the pessimist poet, "James Thomson." A life of "Phillips Brooks, the Man, the Preacher and the Author," by Newell Dunbar, had an introduction by Joseph Cook and an estimate by F. W. Farrar, D. D., and "Phillips Brooks in Boston," compiled by M. C. Ayres, consisted of five years' editorial estimates. "A Modern Paul in Japan," by Jinzo Naruse gave an account of the life and work of the Rev. Paul Sawayama, with an introduction by Alexander McKenzie, D. D.; Ellis Schreiber wrote a "Life of Augustus Henry Law, Priest of the Society of Jesus"; and Rev. J. R. Slatery, "The Life of St. Peter Claver, S. J., the Apostle of the Negroes." Other volumes of clerical biography were "Israel Edson Dwinnell, D. D.," by Rev. Henry E. Jewett, "Memorials of Richard H. Richardson, D. D.," and a "M memoir of James Petigru Boyce, D. D.," late President of the Southern Baptist Theological Seminary at Louisville, Ky., by John A. Broadus, D. D. "My Life and Times," of Cyrus Hamlin, tells much of missionary work in Turkey, far enough removed from which are "The Wizard of Wall St. and his Wealth; or, The Life and Deeds of Jay Gould," chronicled by Trumbull White. Charles H. Bell sketched "The Bench and Bar of New Hampshire," "Speeches and Addresses of William McKinley" were collected into a volume, and Thomas Wentworth Higginson supplied an introduction to the "Speeches and Addresses" of William E. Russell, edited by Charles T. Russell, Jr. "College Tom," by Caroline Hazard, tells the story of one of her ancestors (Thomas R. Hazard), whose "lifelong protest against slavery was his most noteworthy achievement," and another volume of unpretentious biography is that by Adela E. Orpen, who in "The Chronicles of the Sid" tells of the life and extensive travels of Adelia Gates. "An All-Around Boy" contained the life and letters of Ralph Robinson Green, published by his father, Rufus S. Green, D. D. "Brave Lads and Bonnie Lassies," by F. Myron Colby, told the stories of young folks who have helped to make history, beginning with Egypt. A sailor's life fifty years ago is depicted in "Twenty Years at Sea," by Frederick Stanhope Hill, and "Sketches of Border Adventures of Major Moses Van Campen" were written by his grandson, J. Niles Hubbard. "Seventy Years on the Frontier" was the title of Alexander Major's memoirs, and "Buffalo Bill' from Prairie to Palace" gave an authentic and authorized history of the wild West and its hero. An edition of 725 copies only was issued of the "Life and Works of Alexander Anderson, M. D., the First American Wood Engraver," by Frederick M. Burr. J. A. Coles, M. D., was the author of a biographical sketch of "Abraham Coles," and J. Howe Adams, M. D., of the "History of the Life of D. Hayes Agnew, M. D." "Donn Piatt: His Work and his Ways," was by Charles Grant Miller. "What America owes to Women," a series of pen portraits of American women past and present, edited by Lydia Hoyt Farmer, Columbian poems and prose sketches of "Kentucky Pioneer Women," by Mary Florence Taney, "A Woman of the Century," biographical sketches accompanied by portraits of leading American women, edited by Frances E. Willard and Mary A. Livermore, and "Women of Cleveland," by Mrs. W. A. Ingham, bear testimony to the prominent position assumed by the sex during the Columbian year; and, retracing our steps, we have "Presidential Inaugurations from George Washington, 1789, to Grover Cleveland, 1893," by Thomas Hudson McKee. F. B. Heitman also drew up the "Historical Register of Officers of the Continental Army during the War of the Revolution, April, 1775, to December, 1783." "Oliver Cromwell: With



Illustrations from Old Paintings and Prints" was by George H. Clark, and Charles Knowles Bolton described "Saskia, the Wife of Rembrandt." The "Genealogy of the Plumb Family," by Henry Blackman Plumb, "Genealogical Sketches of Robert and John Hazleton and some of their Descendants," by W. B. Lapham, M. D., "The Estes Genealogies," by Charles Estes, the "Genealogy of the Cutts Family in America," by C. H. C. Howard, and the "Creole Genealogy" (of St. Louis), by Paul Beckwith, are of family interest. William Elroy Curtis published Part II of a descriptive catalogue of "Christopher Columbus: His Portraits and his Monuments," Charles Paul MacKie described "The Last Voyages of the Admiral of the Ocean Sea," and a facsimile of the pictorial edition of "The Letter of Columbus on the Discovery of America" was printed by order of the trustees of the Leuxou Library, which possesses the only perfect copy, with a new and literal translation and a complete reprint of the oldest 4 editions in Latin. A quadricentennial edition (limited to 402 sets) of Washington Irving's "Life and Voyages of Christopher Columbus" was also issued in three volumes. Vols. II and III appeared of the "National Cyclopædia of American Biography," and T. A. Busbey edited and compiled a "Biographical Directory of the Railway Officials of America" for 1893.

Two important translations were "John and Sebastian Cabot" from the Italian of Francesco Tarducci, by Henry F. Brownson, and "The Story of My Life," from the German of George Ebers, by Mary J. Safford.

**Criticism and General Literature.**—To this department belong "Essays in London and Elsewhere," by Henry James; "Other Essays from the Easy Chair" of George W. Curtis; "Essays in Idleness," by Agnes Repplier; "As we go," by Charles Dudley Warner, who also made a study of "The Work of Washington Irving"; and "Stelligeri," a volume of essays concerning America, by Barrett Wendell. F. Marion Crawford, who is certainly entitled to be heard, questioned "The Novel, What is it?" and George Haven Putnam considered "Authors and their Public in Ancient Times." George C. Lorimer told "What I know about Books and how to use them," and Joseph H. Thayer, D. D., delivered a lecture upon "Books and their Uses" before the Harvard Divinity School, to which was appended a list of books for students of the New Testament. Marion D. Shutter, D. D., made a literary study of the "Wit and Humor of the Bible." Arthur MacArthur wrote a "Biography of the English Language," and also made "An Examination into the Present Position of English among the Languages of the World" in the same volume. Maurice Thompson delivered the Carew lectures of 1893 before Hartford Theological Seminary upon "The Ethics of Literary Art." John F. Genung gave us "Outlines of Rhetoric embodied in Rules," "Persian Literature, Ancient and Modern," was rendered accessible to us by Mrs. Elizabeth A. Reed, who did so much for "Hindu Literature" a year or two ago, and "The Growth and Influence of Classical Greek Poetry" was traced by Prof. R. C. Jebb in lectures delivered in 1892 on the Percy Turnbull Memorial Foundation in the Johns Hopkins University. "The Private Life of the Romans" was compiled for the use of students by Harriet Waters Preston and Louisa Dodge, and "The Development of the Athenian Constitution" was traced by George Willis Botsford in the Cornell Studies in Classical Philology. Miss E. S. Kirkland wrote "A Short History of English Literature for Young People," a companion volume to her "Short Histories" of France and England. "The Classic Myths in English Literature," edited by Prof. Charles Mills Gayley, while based chiefly on Bulfinch's "Age of Fable" (1855), differs from that work in many important respects and contains much new material, and "Tales from Shakespeare," by Harrison S. Morris, in four volumes, included those of Charles and Mary Lamb. Prof. Felix E. Schelling published "The Life and Writings of George Gaseigne," with three poems of that au-

thor heretofore not reprinted; Katharine Lee Bates made a study of "The English Religious Drama," and William Lyon Phelps traced "The Beginnings of the English Romantic Movement." Prof. L. A. Sherman's "Analytics of Literature" purports to be a manual for the objective study of English prose and poetry, and Edward T. McLaughlin edited "Literary Criticism for Students" with an introduction and notes. Vol. IV of "Harvard Studies in Classical Philology" was issued, as was Vol. III of "A Journal of American Ethnology and Archæology," edited by J. Walter Fewkes. James C. Pilling, of the United States Bureau of Ethnology, continued his valuable series with "The Bibliography of the Salishan Languages," and Rev. W. Muss-Arnolt published a volume "On Semitic Words in Greek and Latin," as well as two pamphlets on "The Assyro-Babylonian Months and their Regents" and the names of the same. Vol. III appeared of "Hermetic Philosophy," two papers by Morris Jastrow, Jr., and Taleott Williams on "Magic and Prodigy in the East" were reprinted from "Poet Lore," and Morris Jastrow compiled Part II of "A Dictionary of the Targumim." Denton J. Snider was heard from in a commentary on "Dante's Inferno." "The Work of John Ruskin" in its influence upon modern thought and life was reviewed by Charles Waldstein in the Harper's "American Essayists" series, and an edition limited to 150 copies was issued of "Robert Browning as an Exponent of a Philosophy of Life," by Brainerd Marc Burridge. The "Literary, Scientific, and Political Views of Orestes A. Brownson" were selected from that author's works by Henry F. Brownson, and "Sir Francis Bacon's Cipher Story" was again discovered and deciphered by Orville W. Owen, M. D. Julia Duhring, who appeared last year as "Amor in Society," devoted herself in 1893 to "Mental Life and Culture," William Morton Fullerton made some studies in historic psychology entitled "Patriotism and Science," and Daniel G. Brinton, M. D., turned from his accustomed fields to "The Pursuit of Happiness" in what he calls "a book of studies and strowings." Charles Dudley Warner wrote an introduction to "Seen from the Saddle," by Isa Carrington Cabell, and W. Armstrong Collins was equally expert "At Loug and Short Range" of a variety of subjects. "Coffee and Repartee," by John Kendrick Bangs, "Bachelor Buttons," by Frank Chaffee, "Wayside and Fireside Rambles," by Almon Gunnison, "Humanities," by John Staples White, "What One Woman thinks," by Mrs. Haryot Holt Cahoon, "More than Kin," by James Vila Blake, "Ruminations," by Paul Siegvolk (Albert Matthews), and "Only a Flock of Women," by Mrs. A. M. Diaz, discuss every question, perhaps, that is capable of interesting the human mind, while Mrs. Helen H. Gardener exploited what she terms "Facts and Fictions of Life." "The Opinions of a Philosopher," by Robert Grant, is a sequel to "The Reflections of a Married Man." "The Latter-Day Eden," by Henry Tuckley, treated of wedlock and the home; from Isaac Errett we had "Linsey-woolsey, and Other Addresses," Donn Piatt's "Sunday Meditations and Selected Prose Sketches" were posthumously published, and Ella Wheeler Wilcox was at home in dealing with "Men, Women, and Emotions." Rev. J. W. Daniel took "A Ramble among Surnames," and Marshall Brown edited a collection of "Bulls and Blunders." Our ancestors came in for a full share of attention in "Our Colonial Homes," by Samuel Adams Drake, and "Customs and Fashions in Old New England," by Mrs. Alice Morse Earle, while Anne Hollingsworth Wharton peeped profitably "Through Colonial Doorways." "The Old Colony Town, and Other Sketches" of William Root Bliss worthily succeeds his "Colonial Times on Buzzard's Bay," and "An Old Town by the Sea," described by Thomas Bailey Aldrich, proved to be Portsmouth, N. H. "Authors and Writers associated with Morristown," by Mrs. Julia Keese Colles, possesses local interest also. Prof. Eben Horsford Norton reconstructed "Leif's House in



Vineland," and Elizabeth G. Shepard prepared "A Guide to Norumbega and Vineland." "Some Old Puritan Love Letters," which passed between John and Margaret Wintthrop, 1618-1638, were edited by Joseph Hopkins Twichell. Two of the six volumes of the "Distaff Series," issued by the Board of Lady Managers for the State of New York at the World's Columbian Exposition to show the representative work of women of the State, were respectively "Woman and the Higher Education," edited by Miss Anna C. Brackett, and "Early Prose and Verse," in the arrangement of which Mrs. Alice Morse Earle and Emily E. Ford collaborated. "Emerson's Year-book," prepared by "A. R. C.," and "Helpful Words from the Writings of Edward Everett Hale," contained much of the best work of both authors, and F. Saunders edited over 100 "Historical and Patriotic Addresses." "The Lover's Lexicon," which we owe to Frederick Greenwood, begins, as sometimes happens, with "abhorrence" and ends with "wife"; and from an unknown hand we have a selection of "Masterpieces of Prose," English and American. "Liber Scriptorum," the first book of the Authors' Club, in an edition limited to 250 copies, represented 109 contributors who signed their several articles, in prose and verse, written especially for the work, with pen and ink; it was the most unique as well as the most sumptuous volume of the year. The first of the two volumes of "The Standard Dictionary," edited by Isaac K. Funk, D.D., Francis A. March, and Daniel S. Gregory, D.D., was issued at the close of the year; Mrs. Ella Sterling Cummins reviewed California writers and literature in "The Story of the Files"; the United States Bureau of Education published "Statistics of Public Libraries in the United States and Canada," prepared by Weston Flint; "Bibliotheca Americana, 1893," appeared, as did "The A. L. A. Index," compiled by William I. Fletcher, and the second supplement to "Poole's Index to Periodical Literature," bringing the work down to Jan. 1, 1892. "The Writings of Henry David Thoreau" were issued in the Riverside edition in ten handsome volumes, with biographical introductions and full indexes, and "The Natural History of Intellect, and Other Papers," by Ralph Waldo Emerson (some of which have never before been printed), came to us in three editions, with a general index to Emerson's collected works.

**Education.**—From no source could we have "The Theory of Education" better set forth than by Hon. William T. Harris in a short paper forming No. 15 of "Schoolroom Classics." "Education and Educators" were exploited by David Kay in "School Bulletin Publications," and Malcolm MacVicar defined "Principles of Education." "The Public-School System of the United States," by J. M. Rice, M. D., deals with the subject after careful and detailed observation, and William S. Munroe made a study in the history of American pedagogy under the title of "The Educational Labors of Henry Barnard." S. S. Laurie wrote of "John Amos Comenius, Bishop of the Moravians, His Life and Educational Works"; Isaac Sharpless made a short study of "The Relation of the State to Education in England and America," and Charles W. Bennett wrote a "History of the Philosophy of Pedagogics." The "History of Educational Journalism in the State of New York" was the theme of a paper read July 28, 1893, before the Department of Educational Publications of the International Congresses of Education of the World's Columbian Exposition, by C. W. Bardeen; "School Management" was a practical treatise by Emerson Elbridge White; Montague R. Levenson, M. D., published "Thoughts on Institutions of the Higher Education"; Charles Franklin Thwing told of what goes on "Within College Walls"; and Lida Rose McCabe treated of "The American Girl at College." "Benjamin Franklin and the University of Pennsylvania" consists of 27 papers by as many eminent Philadelphians, edited by Francis Newton Thorpe, and published by the United States Bureau of Education. "Princeton Sketches," by

George R. Wallace, and "Harvard Stories," by W. K. Post, may be classed together. J. W. Stearns edited a "Columbian History of Education in Wisconsin," by various authors, and Edward Smith wrote "A History of the Schools of Syracuse." The record of "Twenty-two Years' Work of the Hampton Normal and Agricultural Institute" is an encouraging one. Kate Douglas Wiggin edited "The Kindergarten" in the "Distaff Series," and Emilie Poulsson wrote talks and stories for use "In the Child's World." George Ricks supplied "Object Lessons and how to give them" in two series for primary, intermediate, and grammar schools, and "Methods of teaching Modern Languages" were discussed by A. Marshall Elliott, Calvin Thomas, and others. Prof. Charles F. Kroeh published "The Living Method for learning how to think in German," with revised editions of his works treating other foreign languages by a similar method, and Oscar Weineck prepared "A Common-Sense Guide to English for Foreigners." The essentials for true education are discussed by Abbot Kinney in "Tasks by Twilight." "A Pathfinder in American History" was devised for teachers by W. F. Cordy and W. I. Twichell, while Eva Wilkins and Amos M. Kellogg handled the same theme in "Descriptive Geography taught by Means of Map Drawing" and "Geography by Map Drawing." Paul H. Hanus contributed an essay on "Geometry in the Grammar School," and Paul Carus lectured on "The Philosophy of the Tool," as did James MacAlister on "Art Education in the Public Schools." "Figure Drawing for Children" formed the theme of a volume by Caroline Hunt Rimmer, while "Progressive Lessons in the Art and Practice of Needlework for Use in Schools" and "School Needlework" emanated from Catherine F. Johnson and Olive C. Hapgood. Burke A. Hinsdale published "How to Study and Teach History, with particular reference to the history of the United States."

**Fiction.**—"The Prince of India: or, Why Constantinople fell," in two volumes, by Gen. Lew Wallace, was the leading novel of the year so far as popularity is concerned, although several standard writers made their accustomed contributions. F. Marion Crawford, in "The Children of the King," told a tale of Southern Italy, while his "Pietro Ghisleri" makes us again acquainted with many of the characters in his "Sarcinesca." "Marion Darche" is a story of New York life of to-day. "The World of Chance," by William Dean Howells, deals with the experiences of a young author among publishers, and he also conducted a heroine to "The Coast of Bohemia." "David Balfour," by Robert Louis Stevenson, was a sequel to "Kidnaped," published in 1886, and from his fascinating pen we have also "Island Nights' Entertainments." Henry James sent out three volumes of short stories. "Social Strugglers" were described by Hjalmar Hjorth Boyesen, from Arlo Bates we had "In the Bundle of Time," and from Thomas Bailey Aldrich "Two Bites of a Cherry, with Other Tales." "Duffels" was the quaint title given by Edward Eggleston to eleven short stories; Mrs. Margaret Deland introduced us to "Mr. Tommy Dove," with which are included four other stories, and the latest heroine of Amélie Rives (Mrs. John Armstrong Chanler) was "Tanis, the Sang-Digger." Bret Harte makes "Susy," whom we met in a former tale, the leading character of a tale of the plains, while the scene of "Sally Dows" (with which are three other stories) is laid in Georgia during reconstruction times. Maurice Thompson went to Louisiana in the days of 1812 for his outlaw, "The King of Honey Island," and Molly Elliot Seawell gave us "Children of Destiny" in addition to "Through Thick and Thin" and "The Midshipman's Mess: A Soldier's Story and a Sailor's Story," for boys. Elizabeth Stuart Phelps (Mrs. Herbert D. Ward) told of the awakening of "Donald Marey," and her husband published "A Republic without a President, and Other Stories." Julien Gordon (Mrs. Van Rensselaer Cruger) tells the story of her lovers by means of "His Letters," and



"Stanton Page" (Henry B. Fuller) in his powerful novel of "The Cliff Dwellers" proved himself as capable to deal with the stirring life of modern Chicago as with the gentler scenes of "The Chevalier of Il Pensieri Vani" and "The Châtelaine of La Trinité." Mrs. Amelia E. Barr described "A Singer from the Sea" on the Cornish coast, and "Girls of a Feather"; Sidney Luska (Henry Harland) laid the scene of "Mademoiselle Miss" and the four succeeding stories abroad; Frank R. Stockton published "The Watchmaker's Wife, and Other Stories"; Octave Thanet (Alice French), "Stories of a Western Town" and "An Adventure in Photography"; John Seymour Wood, "A Coign of Vantage" and "An Old Beau and Other Stories"; Mrs. Constance Cary Harrison, "Sweet Bells out of Tune" (in addition to editing the volume of "Short Stories" in the "Distaff Series"); and Paul Du Chaillu the romantic history of "Ivar the Viking"; while "Out of the Sunset Sea," by Albion W. Tourgee, pictured life in the time of Columbus and introduced the Cabots. Maria Louise Pool wrote two novels, "Katharine North" and "The Two Salomes." Charles King's sole contribution was "Foes in Ambush"; "Toppleton's Client," by John Kendrick Bangs, was full of humor, as was "The £1,000,000 Bank Note, and Other New Stories" of Mark Twain (Samuel L. Clemens). Lillian Bell divulged "The Love Affairs of an Old Maid," and "A Spinster's Leaflets" were given to the public by Alyn Yates Keith. "Prairie Folks" were described by Hamlin Garland; Julian Hawthorne made himself at home at "Six Cent Sam's," and edited "The Confessions of a Convict"; from Sarah Orne Jewett we had "A Native of Winby" and eight other tales, largely of New England life; from Mrs. Mary Hartwell Catherwood "The White Islander" and "Old Kaskaskia"; from Patience Stapleton, "My Jean"; and from Anna Katharine Green (Mrs. Rohlf's) "A Matter of Millions" and "Marked Personal." Edgar Fawcett wrote "American Push" and "Loaded Dice"; Edgar Saltus, "Madam Sapphira: A Fifth Avenue Story"; and Robert Appleton, "Mr. Philip St. Clare," a novel of fashionable life. "Friends in Exile" was a tale of diplomacy, coronets, and hearts, by Lloyd Bryce. Mrs. Elizabeth Winter ("Isabella Rastelar"), the wife of William Winter, framed a tale of adventure in the attempt to find "The Spanish Treasure"; and Marie Corelli displayed original imagination in her "Barabbas." "The Reverend Melancthon Poundtex" was a novel by the late Donn Piatt. Gilbert Parker dawned on us as a new writer of Canadian romance in "Pierre and his People" reminding us a little of Kipling. He also published "The Translation of a Savage" and "Mrs. Falchion," and collaborated with Luke Sharp, Lanoe Falconer, and others to produce "Tavistock Tales." "The Hermit of the Nonquon," by Charles Nelson Johnson, had its scene laid in the Canadian backwoods of to-day. Bright books were "White Birches," by Annie Eliot; "The Petrie Estate," by Helen Dawes Brown; "A Wedding Tangle," by Frances Campbell Sparhawk; "Melody," by Mrs. Laura E. Richards; and humorous stories "Told by the Colonel," according to William L. Alden. Grace Greenwood (Mrs. Sara J. Lippincott) gave us a new volume of "Stories and Sketches," as interesting as any she every published, and stories of local color were "Dr. Latimer: A Story of Casco Bay," by Mrs. Clara Louise Burnham; "At Mount Desert," by Mildred Fairfax; "Elinor Fenton," an Adirondack story, by D. S. Foster; "An Adirondack Idyl," by Mrs. Lida O. Vanamee; "Tom Croly's Word," by G. W. Hamilton; "The Old House at Four Corners," by Margaret K. Parker; "A Tiff with the Tiffins," by Frances Isabel Currie; "From Side Streets and Boulevards," a collection of Chicago stories, by Preserved Wheeler; "The Loyalty of Langstreth," by J. R. V. Gilliat; "Where the Tides meet," by Edward Payson Berry; "The Road of the Rough: A Simple Story of Life in New York," by Maurice M. Minton; "The Little Heroine of Poverty Flat," by Elizabeth M. Comfort;

"The Norsk Gopher," a story of the Northwest, by Charles N. Sinnet; "A Literary Courtship: Under the Auspices of Pike's Peak," by Anna Fuller, "Under the Live Oaks" (of California), by Mrs. T. M. Browne; "Silhouettes from Life: On the Prairie, in the Backwoods," by Anson U. Hancock; "The Story of a Western Claim," by S. C. Gilman, telling how two boys solved the Indian question; "A Florida Enchantment," by Archibald Clavering Gunter and Fergus Redmond; "Broadoaks," the scene of which is laid in Virginia, by M. G. McClelland; "A Southern Heritage," by William H. Brown; "A Border Leander," by Howard Seeley; "Redbank," a quiet story of life on a Georgia plantation, by M. L. Cowles; "Gainst Wind and Tide," by Nellie T. Kinkade; "Born in the Whirlwind," by William Adams, D. D.; "A Tennessee Judge" and "Miss Madam, and Other Sketches," by Opie P. Read (Arkansas Traveler); "Nance: A Story of Kentucky Feuds," by Nanci Lewis Greene; "John Gray," a tale of the same State in the olden time, by James Lane Allen, and "A Golden Wedding, and Other Tales," by Ruth McEnery Stuart. "A Mute Confessor" was the romance of a Southern town, told by William N. Harben. Henrietta Matson depicted "The Mississippi Schoolmaster" (colored); W. S. Harrison wrote "Sam Williams: A Tale of the Old South," and George G. Smith "Mr. Hall and his Family, especially Susie." Charles Sumner Seeley gave a realistic account of strange adventures in "The Lost Canyon of the Toltecs," and Emily Howland Hoppin in "From Out of the Past" gave many descriptions of Touraine. "Val Maria," by Mrs. Lawrence Turnbull, was a romance of the time of Napoleon I, and "Self-accused," by Frank Morton, had its scene laid in the Hawaiian Islands. John R. Musick continued his "Columbian Historical Novels" with "A Century too soon," a story of Bacon's Rebellion, "Braddock," "The Pilgrims," "The Witch of Salem," "Independence," and "Sustained Honor," the last relating to the War of 1812; and other tales of bygone days were "Dorothy the Puritan," by Augusta Campbell Watson; "Beatrice Hallam," by John Esten Cooke; "The Brides of the Tiger," by W. H. Babcock; "Ansel's Cave: A Story of Early Life in the Western Reserve," by A. G. Riddle; "Old Kaskia Days," by Elizabeth Holbrook; "The Stormy Petrel," a tale of the closing days of slavery and John Brown's raid, by J. Bowles; "John Holden, Unionist," by T. C. De Leon and Erwin Ledyard; "The Copperhead," by Harold Frederic; "A True Son of Liberty," by F. P. Williams; and "In Blue Uniform," by George I. Putnam. "The Son of a Prophet," by George Anson Jackson, attempts to create the character of the author of the Book of Job. "The Complaining Millions of Men" was a strong story by Edward Fuller, opposed to Socialism; Robert Grimshaw prophesied of what may be in 1943 in "Fifty Years Hence"; "Ai: A Social Vision," seen by Charles Daniel, had reference to the social reform of the city of Philadelphia; and "Looking Within," by J. W. Roberts, made manifest the misleading tendencies of "Looking Backward." "Joseph Zalmonah," by Edward King, shows the evils of the sweating system, and "The Cosmopolis Club," by Rev. Washington Gladden, discussed many political evils. "None Such? There will yet be Thousands," by Emory J. Haynes, D. D., points out to millionaires methods to dispose of their wealth, while "Unveiling a Parallel," by "two women of the West," was a satire upon modern civilization. "After Many Days" purported to be an American novel by two Americans, Theodora B. Wilson and James Clarence Harvey. Amanda M. Douglas published "Lyndell Sherburne," a sequel to "Sherburne House," "Bertha Wray's New Name," and "Larry," which last won the \$2,000 prize offered by the "Youth's Companion." Julia McNair Wright wrote three stories also, "The House on the Beach," "Mr. Grosvenor's Daughter," and "On a Snow-bound Train," and Fannie E. Newberry "The Odd One." Nathan Haskell Dole wrote a novel on his own account entitled "Not Angels quite," Mary Harriot Norris pub-



lished "John Applegate, Surgeon," and "Christian Reid" (Frances C. Fisher) "A Comedy of Elope-ment," "Elizabeth, Christian Scientist," was by Matt Crim; "A Modern Agrippa" (with Patience Barker: A Tale of Old Nantucket), by Caroline Earle White; "A Washington Symphony," by Mrs. W. Lamont Wheeler; "Fencing with Shadows," by Mrs. Hattie Tyng Griswold; "Third Hand high," by W. N. Murdoch; "The Rose of Love," by Angelina Teal; "Ashes of Roses," by Louise Knight Wheatley; "Rachel Stanwood," by Lucy Gibbons Morse; "A Question of Honor," by Lynde Palmer; "Margaret Davis, Tutor," by Anna Chapin Ray; "That Mary Ann," by Kate Upson Clark; "A Marriage of Reason," by Maurice F. Egan; "A Daughter of This World," by Fletcher Battershall; "Life's Battle Won," by Julia A. W. DeWitt; "Brothers and Strangers," by Agnes Blake Poor; "Bertha's Summer Boarders," by Linnie S. Harris; "None Other Name; or, The Blacksmith of Minnaberg," a story of the Reformation, by Sarah J. Jones; "The Twentieth Door," by Rev. Charles M. Sheldon; "Only Judith," by Lydia L. Rouse; "Tom Sylvester," by T. R. Sullivan; "A Lover's Reward," by Jacques Edouard; "Mrs. Clift-Crosby's Niece," by Ella Childs Hurlbut; and "The Dugdale Millions," by W. C. Hudson ("Barelay North"). Kate Douglas Wiggin described "A Cathedral Courtship" (with which is included "Penelope's English Experiences") abroad; Alice E. Lord found romance abundant in "The Days of Lamb and Coleridge," and Augustus Filon painted for us "Garriek's Pupil." "In the Dwellings of Silence" was a romance of Russia, by Walker Kennedy; "The Siberian Exiles" we owe to Thomas W. Knox, who published also "The Talking Handkerchief, and Other Stories"; while C. E. D. Phelps and Leigh North collaborated upon "The Bailiff of Tewkesbury." "An Odd Situation," by Stanley Waterloo, makes a plea for free trade with Canada and annexation, while "Washington Brown, Farmer," by Le Roy Armstrong, deals with the financial difficulties of Kansas. Mary E. Stone directed "A Riddle of Luck" against too prolific authorship, and Mary A. Denison narrated "The Romance of a Schoolboy." "John Paget," by Sarah Barnwell Elliott, tells the story of twin brothers, and arraigns fashionable churches and devotion to creeds, while "Hiram Golf's Religion" was tenderly set forth by an anonymous hand. Stories more or less religious in tone were: "In the Pine Woods," by Rev. T. L. Baily; "The New Minister," by Paul Kenneth; "A Hillside Parish," by S. Bayard Dod; "How I became a Preacher," a sequel to "How I became a Sailor," by Omer T. Gillett, M. D.; "Tending Upward," by Mary B. Willey; "Endeavor Doin's Down to the Corners," by Rev. J. F. Cowan; "The Endeavorers of Maple Grove," by Hattie S. Gardner; "Annie Cooper's Friends" (who belonged to the Epworth League), by Mrs. C. B. Howard; and "Silver Bowls," a story for the King's Daughters, by Minnie E. Kenney. "Joy, the Deaconess," by Elizabeth E. Holding; "Camerton Slope," by Rev. R. F. Bishop; "Patty's Granduncle," by Mrs. Helen Pearson Barnard; "Sweet Millie," by Ernest Gilmore; "Consecrated Anew," by Belle V. Chisholm; and "Light on a Dark Path," by Alida W. Graves. "Josiah Allen's Wife" (Marietta Holley) gave us "Samantha at the World's Fair." "The Doomsdwoman," by Gertrude Franklin Atherton; "Gold," by Laura Daintrey; "Dr. Perdue," by Stinson Jarvis; "One of Earth's Daughters," by Ellen Roberts; "Was it Suicide?" by Ella Wheeler Wileox; and "A Conflict of Evidence," by Rodrigues Ottolengui, are specimens of a numerous class, to which belong "Two Soldiers and a Politician," by Clinton Ross; "The Masked Venus," by Richard H. Savage; "Broken Chords crossed by the Echo of a False Note," by Mrs. G. McClellan; "Both were mistaken," by Arline Dare; "The Shadow of Desire," by Irene Osgood; and "The Third Man," by J. G. Bethune. "The Fallen Race," by Austyn Granville, recalls the author of "She"; while "Zenias the Vestal," by Mrs. Margaret B.

Peeke, "Life," by William W. Wheeler, "The Dream Child," by Florence Huntley, and "Arsareth: A Tale of the Luray Caverns," by B. C. Warren, deal with theosophy, hypnotism, and spiritualism.

Volumes of short stories not included above are: "The Story of a Story, and Other Stories," by J. Brander Matthews; "Nowadays, and Other Stories," by George A. Hibbard; "In the Three Zones," by F. J. Stimson ("J. S. of Dale"); a second series of "Day and Night Stories," by T. R. Sullivan; "The Woman who failed, and Others," by Bessie Chandler; "The First Supper, and Other Episodes," by Jonathan Sturges; "Balcony Stories," by Grace King; "Monsieur Nasson and Others," by Grace Howard Pierce; "A Catastrophe in Bohemia," by Henry S. Brooks; "A Daring Experiment, and Other Stories," by Mrs. Lillie Devereux Blake; "My Three-Legged Story Teller," by Adelaide Skeel; "Made in France: French Tales retold with a United States Twist," by H. C. Bunner; "Three Greek Tales," by Walter Phelps Dodge; four volumes of "Historical Tales," American, English, French, and German, by Charles Morris; "Stories from the Rabbis," by Abram S. Isaacs; the "Chinese Nights' Entertainment," by Adele M. Fields; "Voodoo Tales," compiled by Mary Alicia Owen; "My Dark Companions and their Strange Stories," by Henry M. Stanley; "Blackfoot Lodge Tales," containing the story of a prairie people, by George Bird Grinnell; and the "Stories from Scribner's" series, six volumes, entitled respectively "Stories of Italy," "Stories of the South," "Stories of New York," "Stories of the Railway," "Stories of the Sea," and "Stories of the Army."

**Juvenile.**—Of prime interest to the readers for whom they are destined will be the "Comic Tragedies written by Jo and Meg and acted by the 'Little Women'" of Louisa M. Alcott, now published by her sister Anne, the joint author. Kate Douglas Wiggin contributed "Polly Oliver's Problem," and a new writer for young folks made his appearance in Dr. S. Weir Mitchell, who gave "Mr. Kris Kringle: A Christmas Tale." Mrs. H. M. Lothrop (Margaret Sidney) published "Little Paul and the Frisbie School"; J. T. Trowbridge, "Woodie Thorpe's Pilgrimage, and Other Stories"; Kirk Munroe, "The Coral Ship," "Raftmates," and "The White Conquerors," the last a tale of Toltec and Aztec; W. T. Adams (Oliver Optie), "A Victorious Union," "The Young Navigators," and "American Boys afloat"; W. O. Stoddard, "The White Cave," "Tom and the Money King," and "On the Old Frontier"; A. G. Plympton, the author of "Dear Daughter Dorothy," "Robin's Recruit"; Harry Castlemon (C. A. Fosdick), "The Camp in the Foothills," "Rodney, the Overseer," and "Two Ways of becoming a Hunter"; E. S. Ellis, "The Campers Out" and "Across Texas"; while John Kendrick Bangs spent "Half Hours with Jimmieboy." Charles E. Brimblecom narrated the adventures of "An Archer with Columbus," and "The Boys of Greenway Court," by Hezekiah Butterworth, was a tale of the early days of Washington. Horatio Alger, Jr., wrote two books, "Facing the World" and "In a New World; or, Among the Gold Fields of Australia," while Mrs. I. M. Alden (Pansy) had no less than three, "Worth Having," "Stephen Mitchell's Journey," and "Twenty Minutes late," in addition to "The Pansy" for 1893, which she edited with George R. Alden. Mrs. Elizabeth W. Champney told of "Six Boys" and "Witch Winnie in Paris," "Archie of Athabasca," by J. Macdonald Oxley, and "Lost in the Wilds of Canada," by Eleanor Stredder, belong across the border, while "Through Apache Land," by R. H. Jayne, appeared fitly in the "Warwhoop Series." "The Mill at Sandy Creek" was by the Rev. E. A. Rand; "The Barberry Bush" and eight other stories by Sarah C. Woolsey (Susan Coolidge), "John Boyd's Adventures," by Thomas W. Knox, and "Josiah in New York; or, A Coupon from the Fresh-Air Fund" and "Jenny Wren's Boarding House," by James Otis Kaler. "Ingleside," by Barbara Yechton, was illus-



trated by Jessie McDermott, and from the same author we had "Little Saint Hilary, and Other Stories." "Nibsy's Christmas" was the title of three pathetic little tales by Jacob Riis. It is impossible to more than enumerate "The Moncasket Mystery and how Tom Hardy solved it," by Sidney Marlow; "Oscar Peterson, Ranchman and Ranger," by H. W. French; "Marking the Boundary," by E. Everett Billings; "The Mate of the Mary Ann," by Sophie Swett; "The Musical Journey of Dorothy and Delia," by Bradley Gilman; "Deerhurst; or, The Rift in the Cloud," by Julia Douglas; "Paula Crayton," by Jane Ellis Joy; "Frankie Bradford's Bear," by Joanna H. Mathews; "Elsie at Ion," by Martha F. Finley (Martha Farquharson), the nineteenth of the "Elsie Books"; "Jack, Jr.," by Sally Campbell; "Robert of the Sunny Heart," by Imogen Clark; "Big Brother," by Annie Fellows Johnston; "Jack's Hymn," by Elizabeth Olmis; and "The Gentle Heritage," by Frances E. Crompton. Elbridge S. Brooks contributed "Heroic Happenings told in Verse and Story"; two series of "Parables from Nature," by Mrs. Margaret Gatty, were illustrated by Paul de Longpré; Helen M. Burnside told of "A Day with the Sea Urchins," and Edric Vredenburg, edited "Told by the Sunbeams and Me" and "All but One" in the Raphael Tuck & Sons' prize series for children.

**Fine Arts.**—From Prof. John C. Van Dyke we have "Art for Art's Sake," seven interesting university lectures on the technical beauties of painting, while "Picture and Text" comes to us as a number of sketchy essays, chiefly on artists and art subjects, from Henry James. "The Genesis of Art Form," an essay in comparative æsthetics, by George Lansing Raymond, traced the identity of the sources, methods, and effects of composition in the various arts, while Edwin A. Barber made the first attempt at a systematic treatment of American ceramics in his historic sketch of "The Pottery and Porcelain of the United States," with 200 entirely new illustrations. "Art and Handicraft in the Woman's Building of the World's Columbian Exposition, Chicago, 1893," edited by Mrs. Maud Howe Elliott, had special articles by Mrs. Potter Palmer, Mrs. Julia Ward Howe, and others, while "Some Artists at the Fair" proved to be Frank D. Millet, Will H. Low, W. Hamilton Gibson, and F. Hopkinson Smith, the papers of each being profusely illustrated. "The Columbus Gallery," by Néstor Ponce de Leon, contains pictures of all the existing portraits, monuments, statues, medals, and paintings of the great discoverer, with historical descriptions, and from C. M. Kurtz we had "The Art Gallery, Illustrated, of the World's Columbian Exposition." Henry Van Brunt published "Greek Lines, and Other Architectural Essays," written at intervals during an active professional career of more than thirty years. "A Catechism of Architecture" was a simple and practical little work by John Gash. "Italian Gardens" were studied by Charles A. Platt, the result being a sumptuous volume, and Mrs. Schuyler Van Rensselaer entitled hints which she vouchsafed on good taste in gardening "Art Out of Doors." A reissue was also made in handy shape of her "English Cathedrals," illustrated by Joseph Pennell. A second series of "Shadows of the Stage" was welcomed from William Winter, while "The Realm of Music" was explored by L. C. Elson, and "Musical Education and Musical Art," by Edith V. Eastman. John Knowles Paine edited 6 out of 30 contemplated parts of "Famous Composers and their Works," Clara K. Rogers discussed "The Philosophy of Singing," and D. A. Blackman explained "The Psycho Vowel Method of Voice Culture." "Everybody's Guide to Music" was written by Josiah Booth. "Odd Business: High Art in Fun, Frolic, and Fancy with the Pencil and Quill," by L. J. Bridgman, contained many quaint conceits. Candace Wheeler edited "Household Art" in the "Daffy Series," and Mrs. Addie E. Heron prepared a manual of home decoration under the name of "Dainty Work for Pleasure and Profit." "A Guide to Old

and New Lace in Italy exhibited at Chicago in 1893" we owe to the Countess Cora Slocomb di Brazza, and suggestions for "Color Instruction" in the public schools to Louis Prang, Mary Dana Hicks, and J. S. Clark. The Grolier Club published 400 copies only of a "Catalogue of Original and Early Editions of Some of the Poetical and Prose Works of English Writers, from Langland to Wither," with 87 facsimiles of title-pages and frontispieces. "The Christ-Child in Art," by Henry Van Dyke, was a study in interpretation which, with its many illustrations, came in opportunely at the Christmas season. Other holiday volumes were "French Illustrators," with 15 plates in color on Japan paper, and more than 100 sketches, portraits, and drawings, the text of which was by Louis Morin, a distinguished French illustrator; "The Masters and Masterpieces of Engraving," by Willis O. Chapin, with 60 engravings and heliogravures; "Riders of Many Lands," by Theodore Ayrauld Dodge, illustrated by Frederick Remington, and "The Century Gallery," a collection of 64 of the best engravings that have appeared in the "Century" and "St. Nicholas." "Henriette Ronner: The Painter of Cat Life and Cat Character," a portfolio of photogravures, had an introduction by Thomas A. Janvier. "A Referendum for the Illustrations in the Garfield Edition of Gen. Lew Wallace's Novel 'Ben Hur'" was prepared by Paul Van Dyke, and among illustrated editions of standard works, we have William Cullen Bryant's "Poems of Nature," illustrated by Paul de Longpré, Charles Reade's "The Cloister and the Hearth," with 550 drawings by William Martin Johnson, "The Autocrat of the Breakfast Table," taken in hand by Howard Pyle, and "Kniekerbocker's History of New York," in a Van Twiller edition, the original designs for which were supplied by Edward W. Kemble. "The Old Garden, and Other Verses" of Mrs. Margaret Deland burst into radiant bloom under the hand of Walter Crane. Two hundred copies only were printed of "A Selection of Cartoons from 'Puck'" by Joseph Keppler, with text and introduction by H. C. Bunner. C. S. Reinhart illustrated "Meh Lady," by Thomas Nelson Page. Three publishers issued Blackmore's "Lorna Doone" in holiday dress, and two Owen Meredith's (Lord Lytton's) "Lucile." The tenth series of "The Good Things of Life" was issued.

**General Science.**—As usual, but few works of value in this department were published. Among these were "Camp Fires of a Naturalist," the story of fourteen expeditions after North American mammals, from the field notes of Prof. Lewis Lindsay Dyehe, by Clarence E. Edwards. Vol. I was concluded of H. Nehrlings "North American Birds" by the issue of Parts VI, VII, and VIII, and Jacob H. Studer edited "The Birds of North America," with 119 colored plates. Austin C. Appgar prepared a "Pocket Key of the Birds of the Northern United States East of the Rocky Mountains." Samuel H. Scudder, in "The Life of a Butterfly," described one of the most common species in America, and he also published a "Brief Guide to the Commoner Butterflies of the Northern United States and Canada." Parts XIII and XIV of the third series of "The Butterflies of North America," by William H. Edwards, appeared; also the fifth volume of Charles Sprague Sargent's description of "The Silva of North America." Charles S. Newhall gave attention to "The Shrubs of Northeastern America," and Mrs. William Starr Dana told us "How to know the Wild Flowers." "Recreations in Botany" were from the pen of Caroline A. Creevey. A new and enlarged edition was issued of Rev. Francis Wollé's "Desmids of the United States and List of American Pediastrums," first published in 1884, and William K. Brooks filled two volumes with a monograph upon "The Genus Salpa." F. Leslie Ransome contributed "The Eruptive Rocks of Point Benita," and Andrew C. Lawson "The Geology of Carmelo Bay" and "The Post-Pliocene Diastrophism of the Coast of Southern California" to the "University of California Bulletin of the Department of Geology,"



and "A Curious Aino Toy" was the subject of a bulletin of the Essex Institute by E. S. Morse. Part I of the "Eleventh Annual Report of the United States Geological Survey" (1889-'90) was given to geology and Part II to irrigation; L. S. Foster compiled No. 4 of "Bibliographies of American Naturalists" (devoted to the published writings of George Newbold Lawrence, 1844-'91), issued as a bulletin of the United States National Museum, and the Smithsonian Institution published "A Select Bibliography of Chemistry, 1492-1892," by Henry Carrington Bolton; "The Mechanics of the Earth's Atmosphere," a collection of translations compiled by Prof. Cleveland Abbe; and Albert A. Michelson's work "On the Application of Interference Methods to Spectroscopic Measurements." Volumes of applied science were "Continuous-Current Dynamos and Motors," by Frank P. Cox, an elementary treatise for students; "How to manage the Dynamo," by S. R. Botone; "Electric Lighting for Marine Engineers," by Sydney F. Walker; Vol. I of "Theoretical Elements of Electro-Dynamic Machinery," by A. E. Kennelly; an "Arithmetic of Magnetism and Electricity," by John T. Morrow and Thorburn Reid; "Comparisons between the different Systems of Distributing Electricity," by Henry Rohinson; and "High School Laboratory Manual of Physics," by Dudley G. Hays, Charles D. Lowry, and Austin C. Rishel. Two papers by James Swinburne and C. H. Wordingham upon "The Measurement of Electric Currents" and "Electrical Measuring Instruments and Meters for Electrical Energy" appeared in one volume. Daniel Carhart prepared "A Field Book for Civil Engineers"; Sidney H. Wells, a practical manual of "Engineering, Drawing, and Design," in two volumes; "Arthur Latham Bakerset forth 'The Elements of Solid Geometry';" Silas W. Holman proffered a "Discussion of the Precision of Measurements"; and Augustus Knudsen wrote on "Triangular Surveys from Single Stations." An "Index to 'The Popular Science Monthly' from 1872-'92" was compiled by F. A. Fernald, the value of which can readily be appreciated.

For juvenile readers we have "Talks by Queer Folks: More Land and Water Friends," by Mary E. Bamford, and Vols. II and III of "Leaves from Nature's Story-Book," by Mrs. M. A. B. Kelly.

To intellectual science belong "Genetic Philosophy," by David Jayne Hill; "The Interpretation of Nature," by Prof. N. S. Shaler; "An Historical Interpretation of Philosophy," by John Bascom; "Elements of Psychology," by James Mark Baldwin, a simplification of the author's larger "Handbook of Psychology"; "The Ethics of Hegel," translated in the "Ethical Series," with an introduction by J. Macbride Sterrett; "First Steps in Philosophy," by William Mackintire Salter; a "Primer of Philosophy," by Paul Carus; "The Philosophy of Individuality," by Antoinette Brown Blackwell; and "Elements of Deductive Logic," by Noah K. Davis. Thomson Jay Hudson endeavored to find "The Law of Psychic Phenomena," and James B. Alexander to explain "The Dynamic Theory of Life and Mind." Henry Wood, the author of "Natural Law in the Business World," offered in "Ideal Suggestion through Mental Photography" a restorative system for home and private use.

**History.**—No important contributions to history were made during the year. "The French War and the Revolution," by Prof. William Milligan Sloane, appeared in the "American History Series," and the "Causes of the American Revolution" were set forth by James A. Woodburn in the "John Hopkins University Studies." A special edition was reprinted of James Madison's "Journal of the Federal Convention," published under the direction of the United States Government in 1840, and a new popular edition was issued of "A Half Century of Conflict," by Francis Parkman, in two volumes. "Massachusetts: Its Historians and its History" was the theme of Charles Francis Adams, as was "The Making of Virginia and the Middle Colonies, 1578-1701," that of

Samuel Adams Drake, while a cheaper edition was also issued of the latter's "The Making of the Great West." Theodore C. Gambrell, D.D., published "Studies in the Civil, Social, and Ecclesiastical History of Early Maryland"; Bernard C. Steiner, a "History of Slavery in Connecticut"; and Laura Bride Powers, "The Story of the Old Missions of California." "Division and Reunion, 1829-'89," by Woodrow Wilson, belonged to "Epochs of American History," and "Nullification, Secession," by Caleb W. Loring, was an argument for our Government as an indissoluble nation. "From Chattanooga to Petersburg under Generals Grant and Butler" was at once a contribution to the history or the war and a personal vindication by Gen. William Farrar Smith; Rev. David Bittle Floyd wrote a "History of the Seventy-fifth Regiment of Indiana Infantry Volunteers"; William Forse Scott, "The Story of a Cavalry Regiment," that of the Fourth Iowa Veteran Volunteers; and N. D. Preston, a "History of the Tenth Regiment New York Volunteer Cavalry." J. C. Bancroft Davis supplied a chapter in diplomatic history in "Mr. Fish and the Alabama Claims." "The Gilded Man (El Dorado), and other Pictures of the Spanish Occupancy of America" were drawn by A. F. Bandelier, and from Joseph Wallace we have a "History of Illinois and Louisiana under the French Rule." "Illinois, Historical and Statistical," by John Moses, filled two volumes. A new and revised edition of "The Discovery of the Yosemite and the Indian War of 1851," by L. H. Bunnell, was issued, and "The Settlement of the Jews in North America," by Charles P. Daly, which had been twenty years out of print, was edited with notes and appendices by Max J. Kohler. "English History for American Readers" was the joint work of Thomas Wentworth Higginson and Edward Channing, and Mary Abigail Dodge (Gail Hamilton) supplied "English Kings in a Nutshell," as an aid to memory in a different form from that in which it first appeared in 1885. John Codman Ropes selected "The Campaign of Waterloo" for a military history, which he supplemented with an atlas of the same. "The Dawn of Italian Independence," in two volumes, by William Roscoe Thayer, traced the story of Italy from the Congress of Vienna, 1814, to the fall of Venice, 1849, and "Florentine Life during the Renaissance" was the theme of Walter B. Scaife in "Johns Hopkins University Studies." Two volumes also contained "The Influence of Sea Power upon the French Revolution and Empire, 1793-1812," by Capt. A. T. Mahan, U. S. N., which creditably succeeded his former work, and Mrs. Laura E. Richards gave us "Glimpses of the French Court." A limited edition of "Old Court Life in France," by Frances Elliott, first published in this country twenty years ago, was issued, and John Bonner wrote "A Child's History of France." "The Evolution of an Empire," by Mrs. Mary Parmele, was a brief historical sketch of Germany; Sidney Whitman described "The Realm of the Habsburgs"; while "Russia and Turkey in the Nineteenth Century" were the theme of Elizabeth Wornieley Latimer. Horatio E. Brown gave an historical sketch of the republic of "Venice," and "The Story of Poland," in "The Story of the Nations" series, was by Prof. W. R. Morfill. J. B. Bury wrote the "History of the Roman Empire from the Foundation to the Death of Marcus Aurelius" for "Harper's Students' Series." Vols. III and IV completed "The Memorial History of the City of New York," edited by James Grant Wilson, and William Loring Andrews compiled a limited edition of "The Bradford Map" of the city, published in 1731. A "Centennial History of the City of Washington, D. C.," was written, and Erastus Thatcher compiled a book upon "The Founding of Washington City." G. H. McMasters published a "History of the Settlement of Steuben County," and Don Gleason Hill, the town clerk, edited "The Early Records of the Town of Dedham, Mass., 1636-1659." "Ontario's Parliament Buildings," by Frank Yeigh, chronicled a century of legislation from 1792.



**Housekeeping.**—In "Some Passages in the Practice of Dr. Martha Scarborough," Mrs. Helen Campbell made a plea for better food, better cooking, and better living among the New England folks, veiling her motive in the form of a slight story, while she proved herself at home "In Foreign Kitchens," and also issued a new revised edition of "The Easiest Way in Housekeeping and Cooking." "Daily Dinners," by Nancy Lake, consisted of a collection of 366 distinct *menus* in English and French, intended for the mistress rather than the cook, and "Real Cookery" was defined by Grid. "The Manufacture of Liquors and Preserves," by J. de Brevans, an eminent French chemist, is a particularly valuable work, containing over 300 formulas; Alessandro Filippini gives recipes for "One Hundred Desserts"; while Mrs. Louisa E. Smith devoted her attention to "Bonnes Bouches, and Relishable Dishes for Breakfast and Luncheon." "Sandwiches: A Baker's Dozen" we owe to Marion L. Campbell, and "A Handbook of Invalid Cooking" to Mary A. Boland. The sum and substance of all are contained in "Miss Parloa's Young Housekeeper."

**Jurisprudence.**—"Comparative Administrative Law," in two volumes, by Frank J. Goodnow, was an analysis of the administrative systems, national and local, of the United States, England, France, and Germany; Frederick J. Stimson published Vol. II of his work on "American Statute Law," and Vol. III of the "Code of Civil Procedure" of the State of New York, including amendments enacted in 1893, was annotated by R. M. Stever. Herbert B. Huntley compiled "The Code of Procedure and Penal Code" of the State of Washington, and Roswell Shinn wrote "A Treatise on the Pleadings and Practice in the Courts of Record of Michigan," in two volumes. John M. Vanfleet set forth "The Law of Collateral Attack on Judicial Proceedings," and Irving Browne was the author of "A Treatise on the Admissibility of Parol Evidence in Respect to Written Instruments." "A Treatise on the Law of Certiorari at Common Law and under the Statutes," by George E. Harris, "A Summary of Equity Pleading," by C. C. Langdell, "Illustrated Cases in Equity," compiled by William S. Pattee, and "A Treatise on Extraordinary Relief in Equity and at Law," in two volumes, by Thomas Carl Spelling, relate to law in the abstract. "Outlines of Criminal Law and Procedure" were drawn for the use of students by Emlyn McClain, who prepared also "A Selection of Cases on the Law of Carriers"; "The General Principles of the Law of Evidence in their Application to the Trial of Criminal Cases at Common Law and under the Criminal Codes of the Several States," were published by Frank S. Rice; Part I of "A Selection of Cases and Other Authorities upon Criminal Law," by Joseph H. Beale; Vol. II of "A Selection of Cases on the Law of Torts," by Jeremiah Smith; the "Law of Contract," by William T. Brantley; "A Treatise on the Law of Quasi-Contracts," by William Albert Keener; "Cases on the Law of Agency," by Floyd R. Meehem; and "A Text-Book on Commercial Law," by Salter S. Clark. "Code Practice in Personal Actions" was an elementary treatise for students by James L. Bishop; J. G. Sutherland revised and enlarged, with the assistance of John R. Berryman, both his works "On Damages" and "A Treatise on the Law of Damages"; and J. E. Cobbe wrote "A Practical Treatise on the Law of Chattel Mortgages," in two volumes; two were also filled by "A Treatise on the Law of Mortgages of Real Property," by Darius H. Pingrey. Sidney Perley set down "Principles of the Law of Interest"; Charles G. Black, those of the "Law of Taxation," with special reference to its application in the State of New Jersey; and Henry Campbell's "Treatise on the Law of Tax Titles" passed through a second revised and enlarged edition. Horace E. Smith wrote "A Treatise on the Law of Personal Property"; Rufus Waples, "A Treatise on Homestead and Exemption"; and Martin L. Newell, "A Treatise on the Action of Ejectment and Concurrent Remedies for the Re-

covery of Real Property." "The Law of Banks and Banking" was from the pen of Charles T. Boone; "The Law relating to Bank Collections" was determined by Albert S. Bolles; "The Law of Bank Checks in the United States," by Henry C. Van Schaack; "Elements of the Law of Bills, Notes, and Checks, and the English Bills of Exchange Act for Students," by Melville M. Bigelow; and Charles P. Norton drew up a "Handbook of the Law of Bills and Notes." Stewart Rapalje selected for a theme "The Law relating to Real-Estate Brokers." In insurance we have two volumes of "A Treatise on the Law of Insurance," by Arthur Biddle; George A. Clement's "Digest of Fire-Insurance Decisions"; Vols. III and IV of J. S. Bloomington's "Annual Digest of Insurance Decisions"; John A. Finch's "Digest of Insurance Cases" for the year ending Oct. 31, 1892; and "The Insurance Statutes" of the State of New York, edited and annotated by Morris Cooper. The issue of the second and third volumes of "Economic Legislation of All the States," by Allen Ripley Foote and Charles E. Everett, completed that work; Charles Fisk Beach, Jr., gave two volumes to "Company Law"; and "The Law and Practice under the Statutes concerning Business Corporations in the State of New York" was handled by Dwight A. Jones. Vol. I of the "American Corporation Legal Manual" was edited by C. L. Borgmeyer, and John Lewis edited and annotated Vols. VI and VII of "American Railroad and Corporation Reports." Vols. XXXVIII to XLI, inclusive, of "American and English Corporation Cases," and Vols. LI to LIV of American and English Railroad Cases" appeared; and William L. Murfree, Jr., discussed the "Law of Foreign Corporations." "The Law and Practice of International Extradition" emanated from John G. Hawley. Francis Rawle compiled "Acts relating to Car Trusts"; James Barr Ames printed Vol. I of "A Selection of Cases on the Law of Trusts"; Henry F. Buswell defined "The Civil Liability for Personal Injuries arising out of Negligence"; and Francis B. Tiffany treated of "Death by Wrongful Act." "The Law of Electric Wires in Streets and Highways," by Edward Quinton Keasbey, and "A Treatise on the Law of Street Railways," by Henry J. Booth, may be classed together; and "Public-School Law of the United States" we owe to Irwin Taylor. "A Treatise on the Law relating to Gifts and Advancements" was by W. W. Thornton; "Probate Law" (as practiced in California and other Western States and Territories, by D. E. and Joseph I. Alexander; and "The Law of Wills," by John B. Cassoday. "The Infringement of Patents for Inventions" was studied by Thomas B. Hall, as was "Patentable Invention" by Edward S. Renwick. George H. Knight prepared the "Patent-Office Manual," and Woodbury Lowery issued Vol. XX of "Decisions on the Law of Patents." "Everybody's Lawbook," by J. A. Koonce, and "Legal Advice" for citizens of the State of New York, by Eldorus Dayton, are explained by their titles. C. C. Walsh gave us "The Student's Quiz-Book" in three volumes, and William Lansing "The Lawyer's and Clerk's Assistant." Vols. XXI and XXII appeared of the "American and English Cyclopædia of Law" compiled under the editorial supervision of Charles F. Williams, as well as Boyer's, Story's, Sharp and Allen's and the Snow-Church Company's legal directories. Vol. XXVIII to XXXIII of "American State Reports," by A. C. Freeman, were issued; also Vols. XII and XIII of "The Supreme Court Reporter" and Vol. LV of the "Federal Reporter." Four volumes by Frank F. Brightly contain "A Digest of the Decisions of All the Courts of the State of New York from the Earliest Period to the Year 1892," and Austin Abbott contributed Vol. XXIX of "New Cases" which appeared before the same courts. Special volumes of local law were "Precedents and Rules of Pleading in Civil Actions in the County and District Courts of Texas," by John Sayles; "Practice in Courts of Review that substantially



follow the Colorado Procedure," by John C. Fitnan; "The Law of Assignment for the Benefit of Creditors in the State of Illinois," by Sydney R. Taber; "The Powers, Duties, and Liabilities of Towns and Town Officers in Massachusetts," by William M. Seavey; "The Law of Boroughs in Pennsylvania," by Frank R. Savidge; "The Tennessee Officer," by W. C. Kain; "The Louisiana Justice," by A. F. Knobloch; and "The Statutes of 1893" for Oklahoma. "A Treatise on the Law of Water Rights" as formulated and applied in the Pacific States, was a revised and enlarged edition of "Pomeroy on Riparian Rights," and a third edition also appeared of "Remedies and Remedial Rights by Civil Action," by the same author (John Norton Pomeroy).

**Medicine and Surgery.**—Under the first head we have "Principles and Practice of Medicine," by Henry M. Lyman, M. D.; a "Handbook of Local Therapeutics," edited by Harrison Allen, M. D., who collaborated also with Richard H. Harte, Arthur Van Harlingen, M. D., and G. C. Harlan in its composition. The first of two volumes on the "Theory and Practice according to American Teachers," edited by William Pepper, M. D., appeared, as did a "Manual of the Practice of Medicine," designed especially for students, by A. A. Stevens, M. D.; "Essentials of Homœopathic Materia Medica," compiled by W. A. Dewey, M. D., was a quiz compend arranged for students, and to the same school belongs "Verdi's Special Diagnosis and Homœopathic Treatment of Disease, for Popular Use." R. S. Aitchison issued "A Medical Handbook for the Use of Practitioners and Students"; George D. Black edited "The Doctor at Home and Nurse's Guide-Book"; Orestes M. Brands and Henry C. Van Gieson prepared "An Academic Physiology and Hygiene"; Emmet Densmore, M. D., explained "How Nature cures"; and Frederick A. A. Smith, M. D., advised "Keep your Mouth shut," to which popular treatise on mouth-breathing was added an appendix on ophthalmia in newborn children by Dr. Smith and Dr. Swan M. Burnett. "A Compendium of Materia Medica, Therapeutics, and Repertory of the Digestive System" was by Arkell Roger McMichael, M. D.; W. W. Van Valzah gave his attention to "The Chronic Disorders of the Digestive Tube"; as W. F. McNutt, M. D., did to "Diseases of the Kidneys and Bladder"; and G. Frank Lydston, M. D., to "Stricture of the Urethra" and "Varicocele and its Treatment." A second edition was made of "A Clinical Study of Diseases of the Kidneys," by Clifford Mitchell, M. D.; Charles H. Burnett, M. D., edited "Diagnosis and Treatment of Diseases of the Ear, Nose, and Throat," by eminent American, British, Canadian, and Spanish authors, in two volumes; "Diseases of the Eye, Ear, Throat, and Nose" was a manual for students and practitioners prepared by Frank E. Miller, M. D., James P. McEvoy, M. D., and John E. Weeks, M. D. Horace F. Ivins, M. D., published a "Text-Book on Diseases of the Nose and Throat," and Howard F. Hansell, M. D., and James H. Bell, M. D., "A Manual of Clinical Ophthalmology." Ward A. Holden illustrated "An Outline of the Embryology of the Eye" from original pen drawings. George T. Jackson, M. D., issued a "Handbook of Diseases of the Skin"; W. A. Hardaway, a "Manual of Skin Diseases"; and H. R. Crocker, M. D., "Diseases of the Skin," with special reference to the skin eruptions of children. The results of the latest investigation were summed up in "Modern Gynæcology," by Charles H. Bushong, M. D.; Thomas More Madden made a specialty of "Clinical Gynæcology," and J. Bland Sutton of "Surgical Diseases of the Ovaries and Fallopian Tubes." "Electricity: Diseases of Women, and Obstetrics," by Franklin H. Martin, M. D., deals with the practical application of electricity in cases of the kind; and G. W. Bratenahl, M. D., and Sinclair Tousey, M. D., collaborated on "Gynæcology" for the Students' Quiz Series." P. A. Morrow, M. D., edited "A System of Genito-Urinary Diseases"; "Fermentation, Infection, and Immunity" was a new theory advanced by J. W. McLaughlin, M. D.; Walter Vought,

M. D., offered "A Chapter on Cholera for Lay Readers"; and two volumes in the "Students' Quiz Series," were "Histology, Pathology, and Bacteriology," by Bennett S. Beach, M. D., and a manual of the "Practice of Medicine, including Nervous Diseases," by Edwin T. Doubleday, M. D., and J. D. Nagle, M. D. Henry Putnam Stearns, M. D., published "Lectures on Mental Diseases," and Landon C. Gray a "Practical Treatise on Nervous and Mental Diseases." Theodore M. Kirchoff, M. D., prepared a "Handbook of Insanity." "The Disease of Inebriety" was arranged and compiled by the American association for the study and cure of the same. Dr. S. A. K. Strahan's "Suicide and Insanity" was a physiological and sociological study. The principles and practice of "Nursing" were set forth by Isabel Adams Hampton; and Martin W. Curran gave "Information for Nurses in Home and Hospital." "Medical Microscopy" was the theme of Frank J. Wethered, M. D., and "Anæsthetics and their Administration" of Frederick Hewitt, M. D. J. S. Cassidy, M. D., was an authority as regarded "Elements of Chemistry and Dental Materia Medica." N. Senn, M. D., published a "Syllabus of Lectures on the Practice of Surgery arranged in Conformity with the American Text-Book of Surgery"; F. J. Brookway, M. D., and A. O'Malley, M. D., produced a manual of "Anatomy"; and Irving S. Haynes, M. D., a "Practical Guide for Beginners to the Dissection of the Human Body." "Brain Surgery" was by M. Allen Starr, M. D.; the "Student's Handbook of Surgical Operations" and a "Manual of Operative Surgery," in two volumes, by Frederick Treves; and A. Liataud sent out a "Manual of Operative Veterinary Surgery." "Human Monstrosities," in four parts, received the attention of Barton C. Hirst, M. D., and George A. Piersol, M. D. Vol. XIV of the "Index-Catalogue of the Library of the Surgeon-General's Office" was issued by the War Department at Washington, D. C.; Alexander Duane, M. D., published "The Student's Dictionary of Medicine and the Allied Sciences"; and the third of four volumes of an "Illustrated Encyclopædic Medical Dictionary," by Frank P. Foster, M. D., appeared. "An Account of Bellevue Hospital" was edited by Robert J. Carlyle, M. D., with a catalogue of the medical and surgical staff from 1736 to 1894; C. Gilman Currier drew "Outlines of Practical Hygiene adapted to American Conditions"; T. M. Stevenson, M. D., and Shirley F. Murphy issued Vol. I of a "Treatise on Hygiene and Public Health"; and A. R. Horne, D. D., made "Common-Sense Health Notes." F. L. Dibble dealt with "Vagaries of Sanitary Science."

**Poetry.**—No volume of striking merit appeared during the year, but many collections of pleasing verse. Richard Watson Gilder published "The Great Remembrance" and 40 other poems. Verses of Edward Everett Hale, written on occasion, "For Fifty Years," were collected, as were "Phillips Brooks's Poems," and poems of Thomas Wentworth Higginson and Mary Thacher Higginson, entitled "Such as they are." Eugene Field gave us a "Second Book of Verse," and from James Whitcomb Riley we had 100 short poems on "Green Fields and Running Brooks." "On the Road Home" was the name given by Mrs. Margaret E. Sangster to a number of her poems; three by Mrs. A. D. T. Whitney were entitled "White Memories"; Mrs. Julia C. R. Dorr's "Periwinkle" was illustrated in charcoal by her daughter, Zulma De Lacy Steele, and Louise Imogen Guiney touched tunelessly "A Roadside Harp." "Where Brooks go softly" was the chosen haunt of Charles Eugene Banks, and Madison J. Cawein wrote "Poems of Nature and Love" and "Red Leaves and Roses." Richard Hovey composed an elegy, "Seaward," on the death of Thomas William Parsons, whose "Poems" were collected into a volume during the year, and whose translation of "The Divine Comedy of Dante Alighieri" had a preface by Charles Eliot Norton, and a memorial sketch by Louise Imogen Guiney. Charles H. Crandall published "Way-side Music: Lyrics, Songs, and Sonnets"; Kate Ra-



worth Holmes, "Pictures from Nature and Life"; Bliss Carman, "Low Tide on Grand Pré," a book of lyrics; Mrs. Julia Ditto Young, "Thistle Down"; W. H. Venable, "The Last Flight"; Annie Wall, "Some Scattered Leaves"; Gertrude Hall, "Allegretto"; Frank L. Monteverde, "Looking Beyond"; and M. A. B. Evans, "In Various Moods." "The Story of Aunt Patience," by Mary D. Brine, was illustrated by F. C. Gordon; Harmon Seeley Babcock wrote "The Friendship of Learning," and other poems, while "East and West, The Discovery of America, and Other Poems" of Ernest Francisco Fenollosa belong peculiarly to the Columbian year. "Poems of Two Worlds" were by William Cotter Wilson, "Lyric Touches" by John Patterson, "Back Country Poems" by Samuel W. Foss, and "Cosmos and Other Poems" by Anna Hubbard Mercur. "Under King Constantine," three post-Arthurian idylls, was by Mrs. Katrina Trask. It is impossible to do more than enumerate "In Dreamland, and Other Poems," by Thomas O'Hagan; "The Wine of May, and Other Lyrics," by Frederick L. Pattee; "Fair Shadow Land," by Edith M. Thomas; "Oberon and Puck: Verses Grave and Gay," by Helen Gray Cone; "Fleeting Thoughts," by Caroline Edwards Prentiss; "A Song of the Christ," by Mrs. Harriet Adams Sawyer; "Målmörda: A Metrical Romance," by Joseph C. Clarke; "The Legend of the White Canoe," by William Trumbull; and another "Legend of a Lake," by John Alleyne Macnab. Sixteen short poems by Capt. Jack Crawford were entitled "Camp-Fire Sparks." "Cap and Gown" was a compilation of college verse by Joseph La Roy Harrison, and Horace Parker Chandler issued two additional volumes of "The Lover's Year Book of Poetry," referring chiefly to married life and child life. A new edition was issued of William Winter's "Wanderers," Goldwin Smith published translations from the Latin poets under the name of "Bay Leaves," and John Osborne Sargent's "Horatian Echoes: Translations of the Odes of Horace" had an introduction by Oliver Wendell Holmes. William Hyde Appleton also gave us "Greek Poets in English Verse." "Songs for the Shut-In" were gathered and arranged by Mary Craige Yarrow, and "Columbia's Emblem, Indian Corn," was a garland of tributes in prose and verse by various authors. "Christmastide in Song," a volume of selections, was illustrated with photogravures of well-known paintings of the Nativity. Virginia F. Townsend caught for us "What Christmas says to New Year." Kinahan Cornwallis proffered another historical poem upon "The Conquest of Mexico and Peru," prefaced by "The Discovery of the Pacific." The few contributions to dramatic writing were "Athelwold," by Amélie Rives (Mrs. John Armstrong Chanler); "Giles Corey, Yeoman," by Miss Mary E. Wilkins; "Hannibal and Kathana," by John Fife Cookson; "The History of Geronimo's Summer Campaign in 1885," by George D. Cummings; "The Plutocrat," by Otto F. Schupphaus; "Count Julian," by Julian Sturgis; "The Decision of the Court: A Comedy," by Brander Matthews; and two farces, "Evening Dress" and "The Unexpected Guests," by William Dean Howells. "Poems and Plays" of Donn Piatt were issued, and Justin Adams published "At the Picket Line" and "Triss; or, Beyond the Rockies." The poem read at the opening of the World's Fair, May 1, 1893, was by William A. Croffut, and was entitled "The Prophecy."

**Political, Social, and Moral Science.**—As much as usual was written on these topics. Albert Bushnell proffered "Practical Essays on American Government"; Prof. Woodrow, "An Old Master" (Adam Smith), with other political essays; Goldwin Smith followed, "The United States: An Outline of Political History, 1492-1871," with "Essays on Questions of the Day: Political and Social"; and Ellis Paxson Oberholtzer discussed "The Referendum in America" in "Publications of the University of Pennsylvania." "Politics in a Democracy" was by Daniel Greenleaf Thompson. In the "Columbia College Studies" Cortlandt F.

Bishop wrote a "History of Elections in the American Colonies," while "The World's Representative Assemblies of To-day" were studied comparatively by Edmund K. Alden in the "Johns Hopkins University Studies." Other volumes of these studies were "Local Government in the South and Southwest" (in which was included "Popular Elections of United States Senators"), by E. W. Bemis and others; "Church and State in North Carolina," by Stephen B. Weeks; "The Negro in the District of Columbia," by Edward Ingle; and "The Condition of the Western Farmer, as illustrated by the Economic History of a Nebraska Township," by Arthur F. Bentley. Allen Ripley Foote, in "Prosperity and Politics," advocated what he believed the only measures to relieve the economic and political situation; Winfield J. Davis wrote the "History of Political Conventions in California"; and Walter C. Clephane, "A History of the Government of the District of Columbia." "The City Government of Philadelphia" was a study in municipal administration by students of the University of Pennsylvania, and Clinton D. Higby furnished "A General Outline of Civil Government in the United States, the States, Counties, Townships, Cities, and Towns." A "Congressional Manual of Parliamentary Practice" was deduced from the rules and rulings of Congress by J. Howard Gore. "American Marine," by William W. Bates, presented the shipping question in history and politics, and the relation of "Inland Water Ways" to transportation was discussed by Emory R. Johnson. Marshall Cushing told "The Story of Our Post-Office," ex-Gov. William Larrabee took in hand "The Railroad Question," George H. Lewis considered "National Consolidation of the Railways of the United States," and Mrs. Marion Todd "Railways in Europe and America" from the standpoint of government ownership. The financial crisis occurring during the year induced many attempts to comprehend and remedy the situation. Beginning at the beginning, we have "The History and Theory of Money," a special course of twelve lectures by Sidney Sherwood; "The People's Money," by W. L. Trenholm; and "The History, Organization, and Influence of the Independent Treasury of the United States," by David Kinley, initiating a new series, the "Library of Economics and Politics," edited by Richard T. Ely, of which the second volume was "The Repudiation of State Debts," a study in the financial history of several States, by William A. Scott. "The Banking Question in the United States" was discussed by Horace White, Michael D. Harter, A. B. Hepburn, and others, Jan. 12, 1893, at a meeting held under the auspices of the American Academy of Political and Social Science. S. Whitney Duncomb, Jr., made a study of comparative legislation on "Bankruptcy," William Zebina Ripley wrote "The Financial History of Virginia, 1609-1776," Victor Rosewater gave his attention to "Special Assessments," and Max West considered "The Inheritance Tax," all in the "Columbia College Studies"; Richard P. Rothwell advocated "Universal Bimetallism and an International Monetary Clearing House," and "The Future of Silver," translated from the German of Edward Suess by Robert Stein, was published by direction of the United States Senate Committee of Finance. J. B. Duryea published a second edition of his "Practical Treatise on the Business of Banking and Commercial Credit." Enoch A. Bryan, in "The Mark in Europe and America," reviewed the discussion of early land tenure, as Frederick E. Haynes did "The Reciprocity Treaty with Canada of 1854." "Pensions" were the theme of D. Cady Eaton. Coming now to social science, we have "The Psychic Factors of Civilization" passed in review by Lester F. Ward; "Factors in American Civilization," studies in applied sociology in the form of popular lectures and discussions before the Brooklyn Ethical Association; "Outlines of Economics," by Richard T. Ely, in which theory holds a more prominent part than in his earlier "Introduction to Political Economy"; "Socialism and the American



Spirit," by Nicholas Paine Gilman; "Principles of Economics the Satisfaction of Human Wants in so far as their Satisfaction depends on Material Resources," by Grover Pease Osborne; "A Treatise on Trusts and Monopolies," by Thomas C. Spelling; "Industrial Arbitration and Conciliation," some chapters from the industrial history of the past thirty years, compiled by Josephine Shaw Lowell in "Questions of the Day" series; "The Social Condition of Labor," by E. R. L. Gould (in the "Johns Hopkins University Studies"); "Women Wage-Earners: Their Past, their Present, and their Future," by Mrs. Helen Campbell, with an introduction by R. T. Ely; "Woman, Church, and State," by Matilda Joslyn Gage; "Masses and Classes," a study of industrial conditions in England, by Henry Tuckley; "The Economics of the Russian Village," by Isaac A. Hourwich, another of the "Columbia College Studies"; "Public Assistance of the Poor in France," by Emily Greene Balch, in "Publications of the American Economic Association," "The Housing of the Poor in American Cities," its prize essay for 1892, by Marcus T. Reynolds, and the "Report" of the proceedings of the same association at the fifth annual meeting, Chautauqua, N. Y. "Abnormal Man" was the theme of a "Circular of Information" issued by the United States Bureau of Education, being a collection of essays on education and crime, by Arthur MacDonald, with an extensive bibliography. From the same author we have also a volume on "Criminology," with an introduction by Cesare Lombroso. Henry M. Boies spoke from extensive acquaintance of "Prisoners and Paupers," while B. O. Flower described "Civilization's Inferno." A newly revised and enlarged edition was issued of George W. Hale's "Police and Prison Cyclopædia"; seven essays were delivered on "Philanthropy and Social Progress" by Miss Jane Woods Addams, Robert A. Huntington, and others, before the School of Applied Ethics at Plymouth, Mass.; and Mrs. Frances A. Goodale edited "The Literature of Philosophy" in the "Distaff Series." "Slavery and the Slave Trade in Africa" was by no less an authority than Henry M. Stanley. J. N. Stearns edited "Temperance in all Nations," in two volumes, being the history of the cause in all countries of the globe, together with the papers, essays, addresses, and discussions of the World's Temperance Congress held in Chicago, June, 1893. "Conversations between the Rabbi of the Boarding House and a Company of Intelligent Ladies and Gentlemen," by H. H. Young, covered the labor and every other problem. Benjamin R. Tucker gave us "Instead of a Book, by a Man too busy to write one," a fragmentary exposition of philosophical anarchism, and William H. Van Ornum asked "Why Government at All?" Publications of the American Academy of Political and Social Science embraced the following papers: "Our Failures in Municipal Government," by Gamaliel Bradford; James Harvey Robinson's review of "Sidgwick's Elements of Politics"; "Home Rule for our American Cities," by E. P. Oberholtzer; "The Nature of the Federal State," by E. V. Robinson; "Local Government of Country Communities in Prussia," by Conrad Bornhak; "Parliamentary Procedure," by Jesse Macy; "Social Work at the Krupp Foundries," by S. M. Lindsay; "Psychologic Basis of Social Economics," by Lester F. Ward; "Cost and Expense" and "Cost and Utility," by Simon N. Patten; "The Surplus Gains of Labor," by J. B. Clark; "The Effects of Consumption of Wealth on Distribution," by William Smart; "The Theory of Final Utility in its Relation to Money and the Standard of Deferred Payments," by Lucius S. Merriam; "Taxation of Large Estates," by R. T. Colburn; "Seligman's 'Shifting and Incidence of Taxation'" and "The Standard of Deferred Payments," by E. Alsworth Ross; "The Relation of Economic Conditions to the Causes of Crime," by Carroll D. Wright; and "Preventive Legislation in Relation to Crime," by C. H. Reeve. "Sub-Cœlum" was the picture of a sky-built human world by A. P. Russell. Sidney Webster published a small work on "Misuse of Legal Tender."

**Sports and Pastimes.**—In this department we have a few books by standard authorities. Howland Gaspar, in "The Complete Sportsman," supplied a manual of scientific and practical knowledge for the instruction and information of all votaries of the gun, while the big game of the United States and its chase with horse, hound, and rifle are the theme of "The Wilderness Hunter," by Theodore Roosevelt, who also edited, with George Bird Grinnell, "American Big-Game Hunting," the book of the Boone and Crockett Club. "The Thoroughbred Horse" was treated by S. D. Bruce, and Ashmont (Dr. J. Frank Perry) disclosed "Kennel Secrets." "University Football," edited by James R. Church, has the play of each position treated by experts on the elevens of Harvard, Yale, and Princeton, and "American Football for Schools and Colleges" was again discussed by A. A. Stagg and H. L. Williams. The "American Yacht List for 1893" was issued, and William B. Aiken set forth in small compass "An Outline of the Principles and Leads of American Whist." "Whist Nuggets," in the "Knickerbocker Nuggets," was a charming compilation by W. G. McGuckin.

**Theology.**—As usual, there were a great many books published in this department. George Park Fisher, D. D., was the author of a "Manual of Natural Theology"; Dr. L. F. Stearns wrote three or four years before his death the popular discussion of "Present-Day Theology," published during the year; and Henry R. Percival drew up "A Digest of Theology." M. W. Gifford laid down "Laws of the Soul"; William G. T. Shedd, D. D., considered "Orthodoxy and Heterodoxy," as well as "Calvinism: Pure and Mixed," the latter a defense of the Westminster standards; David Nelson Beach outlined "The Newer Religious Thinking"; and Josiah Strong, D. D. (the author of "Our Country"), discussed "The New Era." "The Coming Kingdom" was by Thomas Van Ness. "Through Christ to God" was a study in scientific theology by Joseph Agar Beet, D. D. A second edition was issued of "The Credentials of Science the Warrant of Faith," by Josiah Parsons Cooke, and Rev. J. A. Zahm wrote of "Catholic Science and Catholic Scientists." Thomas Cooper considered "Evolution, the Stone Book, and the Mosaic Record of Creation" in three lectures, from an orthodox standpoint. "Son of Man; or, The Sequel to Evolution," by Celestia Root Lang, and "The Lyric of Life," by Laura A. S. Nourse, made special pleas for immortality. "Christ and Criticism," by Prof. Charles Marsh Mead, D. D.; "The Bible: Its Origin and Growth and its Place among the Sacred Books of the World," by Jabez T. Sunderland; "The Higher Criticism," by Rev. C. W. Rishell; "The Higher Criticism of the Hexateuch," by Charles A. Briggs, D. D.; "The Bible in the World's Education" (the first annual course of lectures on the Wycliffe foundation of the University of Denver), by Bishop Henry White Warren, who published also "Exegesis: A Leading out of Perplexities into Perception of the 'Pentateuch' (Fivefold Book) of Moses"; and "Holy Writ and Modern Thought," by Bishop Arthur Cleveland Coxe, were akin in theme; and Joseph Henry Crooker assigned the place of "The New Bible and its New Uses." "What is Inspiration?" by John De Witt, D. D., purported to be a fresh study of the question with new and discriminative replies, and Henry Preserved Smith, in "Inspiration and Inerrancy," set forth fully his position. Charles A. Briggs, D. D., published Part II of "The Case Against Professor Briggs" and "The Defense of Professor Briggs before the Presbytery of New York, Dec. 13, 14, 15, and 19, 1892." The authors of "Progressive Christianity" reprinted articles upon "The Divinity of Jesus Christ" which appeared in the "Andover Review," and R. A. Redford, in "Vox Dei," traced the doctrine of the Spirit as set forth in the Old and New Testaments. From the same author we have "Four Centuries of Silence; or, From Malachi to Christ." "The Meaning and the Method of Life" was a search for religion in biology by George M. Gould, M. D.,



and Rev. George A. Gordon traced "The Witness to Immortality in Literature, Philosophy, and Life." "Biblical Eschatology," by Henry Theodore Cheever, D. D., was a review of the writings of the Presbyterian divine, Rev. L. C. Baker, and Charles H. Strong made a study from Scripture on death and after death entitled "In Paradise." "Ecce Orator! Christ the Orator" came to us from Rev. T. Alexander Hyde, and Rev. Minot J. Savage preached 13 sermons on "Jesus and Modern Life"; he also traced "The Evolution of Christianity," and published "Psychics: Facts and Theories," and four addresses entitled "Is This a Good World?" "Christ and Modern Unbelief" was the theme of seven sermons by Rev. Randolph Harrison McKim, and studies of devotion and worship by several authors were collected under the name of "The Spiritual Life." Emily Oliver Gibbs studied "The Origin of Sin, and Dotted Words in the Hebrew Bible." "Straight Sermons to Young Men and Other Human Beings" were preached before the Universities of Yale, Harvard, and Princeton by Henry Van Dyke, D. D. "The Ideal Humanity, and Other Parish Sermons" of William T. Wilson were furnished by some commemorative words by Bishop Henry C. Potter; and among other collections of the kind we may mention "From Things to God," by David H. Greer, D. D.; "Things New and Old," by Rev. Robert Collyer; "Sermons Preached in St. John's Church, Washington, D. C.," by Rev. George W. Douglas; "The Boy Jesus, and Other Sermons," by William M. Taylor, D. D.; "Members of One Body," by S. McChord Crothers; six Lenten sermons on "The Comments at the Cross," by Rev. Cameron Mann; "Pulpit and Platform," sermons and addresses by O. H. Tiffany, D. D.; "Sermons for the Church," by Dr. Caleb Davis Bradlee; "The Larger Life," by Henry Austin Adams; "Common Folks' Religion," by L. A. Banks, D. D.; and "Vision and Duty," by Rev. Charles A. Berry. "Addresses" of Bishop Phillips Brooks had an introduction by Rev. Julius H. Ward, "Brilliant from the Writings of the Right Reverend Phillips Brooks" were selected, and a "Phillips Brooks Year-Book" made, while two memorial sermons of Rev. H. R. Harris and Rev. Arthur Brooks were printed, with the bishop's name for title. "The Good Wine at the Feast's End" was the subject of a sermon by himself issued in pamphlet form. The "Theological Propædæutic" of Philip Schaff, D. D., contained also a classified bibliography of "A Ministerial Library" by Rev. Samuel Macauley Jackson. The Fletcher prize essay of Dartmouth College for 1892 was by Rev. George Guirey upon "The Hallowed Day"; Rev. Washington Gladden treated of property and industry under the Christian law in "Tools and the Man"; Henry Clay Trumbull pronounced "A Lie never Justifiable," and issued a second edition of his conception of "The Blood Covenant." Theodore L. Cuyler, D. D., addressed himself to "The Young Preacher," while "The Deaconess and her Vocation" were the theme of Bishop J. M. Thoburn. Lucy Rider Meyer also wrote on "Deaconesses, Biblical, Early Church, European, American." "Our Best Moods," by David Gregg, D. D., and "Discourses" of Edward H. Hall, thirteen in number, may be placed together, and John B. De Motte explained "The Secret of Character Building." "The Hand on the Plow," by Arthur T. Pierson, D. D., told some secrets of service. "Jackknife and Brambles," by Atticus G. Haygood, Sr., is chiefly devoted to the minor difficulties in religious matters. "The Beasts of Ephesus" was written for the Christian Endeavor Societies by James Brand, D. D., and "The New Generation," for the Epworth League, by Edwin A. Schell; the origin, growth, and working plans of this last were sketched by Joseph F. Berry, D. D., in "Four Wonderful Years." Rev. Madison C. Peters sent out what he termed "Sanctified Spice," and Rev. C. J. Adams asked "Where is my Dog? or, Is Man alone Immortal?" Charles B. Morrell, M. D., edited "Bible Lamps for Little Feet," and Charles S. Robinson, D. D., made "Annotations upon Popular Hymns." "Bible Stud-

ies" were edited from stenographic notes of 23 lectures delivered by Rev. Henry Ward Beecher in 1878-'79." James Strong wrote "The Student's Commentary: A Complete Hermeneutical Manual on the Book of Ecclesiastes"; Milton S. Terry, "The Prophecies of Daniel expounded"; Orello Cone, D. D., "The Gospel and its Earliest Interpretations"; Marvin R. Vincent, D. D., a "Student's New Testament Handbook"; John A. Broadus, D. D., "A Harmony of the Gospels in the Revised Version"; J. W. McGarvey, a "New Commentary on the Acts of the Apostles," in two volumes; Bishop John H. Vincent, "The Story of a Letter" (Epistle to the Ephesians); Alfred Rowland, 40 sermonettes on "Paul's Ideal Church and People." G. G. Findlay sketched the origin and contents of "The Epistles of Paul the Apostle," while Charles Carroll Everett presented what he believes to be a wholly new view of the doctrine of the atonement from "The Gospel of Paul." From Bishop Vincent we have also "The Holy Waiting" and an Easter study entitled "In Search of his Grave." Prof. George D. Herron made a plea in "The New Redemption" for the Church to reconstruct society according to the Gospel of Christ. "The Sacramental System considered as the Extension of the Incarnation" was the theme of the Bishop Paddock lectures of 1892, by Rev. Morgan Dix, and the place of "The Transfiguration" in the Christian year was determined by Bishop George F. Seymour and John H. Egar, D. D. "The Reasonable Christ" was the title of a series of studies by George E. Merrill. "Christian Worship: Its Principles and Forms" were treated by J. W. Richard, D. D., and F. V. N. Painter, and William Reed Huntington, D. D., wrote a "Short History of the Book of Common Prayer." A "Short History of the Christian Church" was by John Fletcher Hurst, D. D.; "A Sketch of the History of the Apostolic Church," by Oliver J. Thatcher. "Catholic Papers," by various writers, had a preface by the Bishop of Milwaukee; six lectures on "Catholic Dogma" and five on "The Church's Ministry of Grace" were delivered by as many ministers of the Episcopal Church, under the auspices of the Church Club of New York, while Rev. Lyman Abbott treated "The Roman Catholic Question" in a broad spirit in a sermon printed in pamphlet form. Vol. I of an "American Church History Series" was issued, being an enumeration, classification, and description of "The Religious Forces of the United States," on the basis of the last Federal Census, by H. K. Carroll. The "History of the Origin and Development of the Governing Conference in Methodism" was written by Thomas B. Neely, D. D., as was a "Manual of Methodist Episcopal Church History," by George L. Cnrtiss. "The Distinctive Doctrine and Usages of the General Bodies of the Evangelical Lutheran Church in the United States" were set forth; Prof. Williston Walker explained "The Creeds and Platforms of Congregationalism"; and Amory H. Bradford, D. D., in "The Pilgrim in Old England," reviewed the history, present condition, and outlook of the Independent (Congregational) churches in that country. A "Manual for Church Officers" was drawn up by G. H. Dryer, D. D., and the American Unitarian Association issued a "Book of Prayer and Praise for Congregational Worship." "In Spirit and in Truth" was the title of a volume of essays by younger ministers of the same Church. Special churches were commemorated in the "History of the First Unitarian Church of Portland, Oregon, 1867-'92," by Earl Morse Wilbur, and the "History of the Second Church of Christ in Hartford," by Rev. E. P. Parker, while the "History of the McCormick Theological Seminary of the Presbyterian Church" was written by J. L. Halsey, D. D. "The Gospel Among the Slaves" was a short account of missionary operations among the African slaves of the Southern States, compiled and edited by W. P. Harrison, D. D., and James S. Dennis, D. D., delivered six lectures upon "Foreign Missions after a Century" before Princeton Theological Seminary. "The Lone Star," by David Downie, D. D., told the



story of the successful Telugu mission in Southern India, and Samuel W. Pond chronicled the adventures of "Two Volunteer Missionaries among the Dacotas." John L. Atkinson described "Siddartha, the Japanese Buddha." "Talks on the Veranda in a Far-Away Land," by Charles Tracy, were upon missionary work in Turkey. George F. Pentecost, D. D., covered the International Sunday-School Lessons for the coming year in "Bible Studies for 1894," and "Thoughts on God and Man" were selected from the writings of Frederick William Robertson, of Brighton, by Joseph B. Burroughs, M. D.

**Unclassified.**—Hubert Howe Baneroff undertook "The Book of the Fair," in twenty-five parts, one of which was published during the year; the official catalogue was issued of "The World's Columbian Exposition," as well as the official directory, and Tudor Jenks wrote "The Century World's Fair Book for Boys and Girls." "Rand, McNally & Co.'s Handbook of the World's Columbian Exposition" contained special descriptive articles by Mrs. Potter Palmer, the Countess of Aberdeen, Mrs. Schuyler Van Rensselaer, and others. Néstor Ponce de Leon compiled from original documents a true description and drawing of "The Caravels of Columbus." "Humors of the Fair," by Julian Hawthorne, was illustrated by Will E. Chapin. "Four Centuries after; or, How I discovered Europe," by Ben Holt, was a burlesque on the tributes paid to the discoverer of our continent. "The Making of a Newspaper" was described from the experiences of certain representative American journalists, related by themselves and edited by Melville Phillips. Technical volumes were "Buildings and Structures of American Railroads," by Walter G. Berg, Robert Grimshaw's "Locomotive Catechism," and "Street Railway Motors," by Herman Haupt; while S. F. Van Oss considered "American Railroads as Investments." A new edition was issued of "The Story of the Atlantic Telegraph," by Henry M. Field, D. D., first published in 1866; W. J. Keenan and James Riley told the story of the telephone in "The Transmitted Word"; and William J. Hopkins wrote on "Telephone Lines and their Properties." "Homes in City and Country" were discussed by Russell Sturgis, John W. Root, Bruce Price, and others; Frank T. Lent volunteered "Sound Sense in Suburban Architecture"; John S. Billings, M. D., wrote on "Ventilation and Heating"; and James R. Willett on "Heating and Ventilation of Residences." John Smeaton gave attention to "Plumbing and Drainage," and Frederick Colyer wrote a "Treatise on the Modern Sanitary Appliances for Healthy Residences and Public Buildings." "Sewage Purification in America," by M. N. Baker, gave a description of the municipal sewage purification plants in the United States and Canada; J. H. T. Turner and A. W. Brightmore set forth "The Principles of Water Works Engineering"; Walter G. Kent wrote on "The Water Meter," William M. Barr on "Pumping Machinery," and Herbert M. Wilson prepared a "Manual of Irrigation Engineering." Robert Scott Burn edited "The Student's Introduction to Mechanics" and "The Carpenter and Joiner," by various authorities. The "Theory of Structures and Strength of Materials," by H. T. Bovey; "Constructive Materials of Engineering," by Albert W. Smith; "Hick's Builder's Guide"; "Compound Riveted Girders," by William H. Birkmire; "A Manual on Lime and Cement," by A. H. Heath; "Notes on the Testing and Use of Hydraulic Cement," by F. P. Spalding; "Knots, Splices, Hitches, Bends, and Lashings," by F. R. Brainerd; "Notes on Cylinder Bridge Piers and the Well System of Foundations," by John Newman; "Slide-Valve Diagrams," as obtained by a French method, by Lloyd Bankson; "Roll-Turning for Sections in Steel and Iron," by Adam Spence, an appendix to his larger work; "The Cabinetmaker," by various writers; "Pigments, Paint, and Painting," by George Terry; and "Oils, Fats, Waxes, and Allied Materials," by C. R. Adler Wright, were valuable manuals of their kind; and Theron L. Hiles told how

to harvest, store, ship, and use "The Ice Crop." "Market Gardening and Farin Notes," by Burnet Landreth, and "Bulbs and Tuberous-Rooted Plants," by C. L. Allen, were also of practical interest; and H. N. Jarchow discoursed of "Forest Planting." F. W. Back told "How to judge a Horse," and J. Roalfe Cox of "Horses in Accident and Disease." A large volume contained the "Manufacturers of the United States," and "Textile Industries of the United States" were investigated by William R. Bagnall, Vol. I (to be followed by two more) covering the period of 1639-1810. "The Ore Deposits of the United States," by James F. Kemp, "Mines and Mining Men of Colorado," anonymous, and the "California Gold Book," by W. W. Allen and R. B. Avery, belong together, as do "Photography Indoors and Out," by Alexander Black, and "Amateur Photography," by W. I. L. Adams. Genevieve Stebbins advocated "Dynamic Breathing and Harmonic Gymnastics," and Helen G. Ecob made a study of "The Well-Dressed Woman." Six speeches on temperance, by John G. Wooley, entitled "Seed," had an introduction by Miss Frances E. Willard and Lady Henry Somerset. Mrs. Henrietta D. Kimball gave us "Witchcraft illustrated," and Barrett Wendell asked "Were the Salem Witches guiltless?" "Great Disasters and Horrors in the World's History" were chronicled by A. H. Godbey, one of which was surely "The Fall River Tragedy," treated in a volume by Edwin H. Porter. "The Ne Plus Ultra Soda Fountain Requisites of Modern Times," by George H. Dubelle, was a practical receipt book for beverages of the kind. "Americans in Europe" were gossiped about by One of Them; Mrs. Frank Leslie asked, "Are Men Gay Deceivers?" accompanying the question with other sketches; and Arthur H. Young brought "Hell up to Date"; "Remarks," by Bill Nye (Edgar Wilson Nye), covered every conceivable subject. Clifton Johnson published "The Country School in New England," with his own illustrations. The "Manual of Guard Duty," of the United States army, approved Jan. 7, 1893, was issued; Albert Gallup compiled a "Handbook of Military Signaling"; Henry G. Sharpe wrote on "The Art of subsisting Armies in War"; and F. N. Maude contributed "Letters on Tactics and Organization." These were again reviewed in "The Service of Security and Information," by Arthur L. Wagner. "Three Roads to a Commission in the United States Army" were shown by Lieut. W. P. Burnham. John F. Maurice made a study of "The Balance of Military Power in Europe." "Ainsley's Engineer's Manual of the Local Marine Board Examinations" filled two volumes, and Vol. V of the "Interstate Commerce Commission Report" covered the period from July 1, 1891, to Sept. 1, 1893. The "Organization and Management of Private Corporations" was treated by A. S. Craige, and Nathaniel C. Fowler, Jr., in "Building Business," furnished an illustrated manual for aggressive business men. Nugent Robinson compiled "The Busy Man's Handbook," and Isaac Pitman's "Complete Phonographic Instructor" was intended for class or self instruction. Joseph Allen Minturn told in "The Inventor's Friend" how to obtain success with patents, and Wallace A. Bartlett published a "Digest of Trade-Marks." The "Annual Club Catalogue and Directory" for 1893 was compiled from official reports; L. Balch wrote "A Manual for Boards of Health and Health Officers"; "Poor's Manual of the Railroads of the United States for 1893" reached its twenty-sixth year, and was accompanied by a supplement, "Poor's Handbook of Investment Securities for 1892-'93." "The Annual Literary Index, 1892," was edited by William I. Fletcher and R. R. Bowker; the "Publishers' Trade List Annual, 1893," and the "Annual American Catalogue, 1892," were issued; also Parts V and VI of "Handy Lists of Technical Literature," compiled by H. E. Haberkorn. A. Grovill gave practical hints on "The Profession of Book-selling." Albert S. Bolles edited "The Banker's Almanac and Register and Legal Directory for 1893,"



making the forty-third year of its publication; and "Appletons' Annual Cyclopædia and Register of Important Events of the Year 1892" was published, making Vol. XVII of the new series and Vol. XXXII of the whole.

**Voyages and Travels.**—"My Arctic Journal," by Mrs. Josephine Diebitsch Peary, describes a year among ice fields and Eskimos, and is accompanied by an account of "The Great White Journey across Greenland," by her husband, Lieut. Robt. E. Peary. Angelo Heilprin also supplied "The Arctic Problem, and Narrative of the Peary Relief Expedition of the Academy of Natural Science of Philadelphia." "Appletons' Guide-Book to Alaska and the Northwest Coast" was written by Miss Eliza R. Seidmore, and William H. and Sarah K. Wiley visited "Yosemite, Alaska, and the Yellowstone." Julian Ralph made a study of the present conditions and future possibilities of "Our Great West," while Kate Sanborn showed herself "A Truthful Woman in Southern California." "At the North of Bearcamp Water," by Frank Bolles, chronicled the strollings of that author in New England from July to December, and "Picturesque Berkshire," in 2 parts, contained descriptive and imaginative text from celebrated writers, with nearly 1,200 reproductions of photographs taken in this county of the Bay State. "The Land of Poco Tiempo," by Charles F. Loomis, we find to be New Mexico and its contiguous regions. The "History of the Expedition under the Command of Lewis and Clark," performed by order of the Government in 1804-'06, was edited anew by Prof. Elliott Coues from the only authorized edition of 1814, and, with a critical commentary, fills four volumes, while "The Mississippi River from St. Louis to the Sea" consists of 42 maps, compiled by J. A. Ockerson and C. W. Stewart from the most recent surveys made by the United States Government and State engineers. "Two Hundred Miles on the Delaware River" described a canoe cruise from its headwaters to the falls at Trenton, made by F. Wallace Höff, and Alfred O. Legge visited "Sunny Manitoba." F. A. Ober followed "In the Wake of Columbus," narrating his adventures as special commissioner sent by the World's Columbian Exposition to the West Indies, and Frederick Douglass delivered a "Lecture on Haiti" at the dedication ceremonies of the Haytian pavilion at the World's Fair, Jan. 2, 1893. "Gossip of the Caribbees," by William R. H. Trowbridge, sketched Anglo-West-Indian life. Bertram G. Goodhue illustrated his "Mexican Memories" himself, and Isaac N. Ford spent nine months in "Tropical America," which he describes with graphic pen. "In the Track of the Sun" is a handsome and profusely illustrated volume of readings from the diary of a globe trotter, Frederick Diodati Thompson, while Mrs. Marguerite Dickins, wife of Commander Dickins, U. S. N., carries us pleasantly "Along Shore with a Man-of-War." "Letters of Travel" were selected from the correspondence of Bishop Phillips Brooks, and P. J. Hamilton told of "Rambles in Historic Lands." "The Rulers of the Mediterranean," as sketched by Richard Harding Davis, proved to be Gibraltar, Cairo, the Suez Canal, etc.; Thomas A. Janvier detailed the events of "An Embassy to Provence," and Heury M. Field sauntered by "The Barbary Coast." William T. Adams (Oliver Optic) saw "Strange Sights Abroad," and Thomas W. Knox brought us up again with "The Boy Travelers in Southern Europe." Walter Phelps Dodge went "As the Crow flies from Corsica to Charing Cross." William H. Bishop gave excellent advice for a "House-hunter in Europe." "Our Cycling Tour in England" was full of faithful description from the pen of Reuben Gold Thwaites, and Thomas Linn, M. D., supplied an opportune medical guide to "The Health Resorts of Europe," in connection with which may be mentioned "Carlsbad," similarly treated by Emil Kleen, M. D. "On Sunny Shores," by Clinton Scolard, was a companion volume to "Under Summer Skies." Maturin M. Ballou's latest volume, "The Story of Malta," found many readers, while Mrs. Clara

Erskine Clement (now Mrs. Waters) selected for her theme "The Queen of the Adriatic." Mrs. Elizabeth Robins Pennell's trip "To Gipsyland" was illustrated by her husband, Joseph Pennell. Robert S. Gardiner was the author of "Japan as we saw it"; Alice M. Bacon, of "A Japanese Interior," written from an extensive experience; while from Naomi Tamura we have a picture of "The Japanese Bride." H. M. Wharton, D. D., evidently enjoyed "A Picnic in Palestine," and we gladly accompany M. M. Shoemaker "Eastward to the Land of the Morning."

Among books which combine utility with literary merit may be mentioned "Boston illustrated," an entirely new volume, edited by Edwin M. Bacon under the old title; "Picturesque Chicago," with a guide to the World's Fair; and "Appletons' General Guide to the United States," in a new edition, revised to date, with an appendix devoted to the Columbian Exposition. "Appletons' Library Atlas of Modern Geography" contains a full gazetteer and indexes, with an illustrated descriptive text based on the results of the latest censuses, and 103 large new maps. A souvenir of Niagara Falls, entitled "The Niagara Book," we owe to William Dean Howells, Samuel L. Clemens, Prof. N. S. Shaler, and others; it is illustrated by Harry Fenn.

The following are the figures of book production during the year, as compared with those of 1892, from the columns of the "Publishers' Weekly":

CLASSIFICATIONS.	1892.		1893.	
	New books.	New editions.	New books.	New editions.
Fiction.....	735	367	772	360
Theology and religion.....	464	38	597	45
Juvenile.....	448	18	436	28
Law.....	334	40	400	30
Education and language.....	330	36	357	10
Literary history and miscellany..	165	27	183	141
Poetry and the drama.....	172	87	166	73
Biography, memoirs.....	224	10	204	15
Political and social science.....	222	14	199	13
Description, travel.....	173	19	170	21
History.....	149	16	122	30
Medical science, hygiene.....	128	27	129	21
Fine art and illustrated books..	181	20	120	15
Useful arts.....	106	22	117	9
Physical and mathematical science.....	91	30	113	10
Domestic and rural.....	57	4	60	4
Sports and amusements.....	37	7	55	5
Humor and satire.....	29	2	27	3
Mental and moral philosophy...	29	4	24	5
Total.....	4,074	788	4,281	853
		4,074		4,281
		4,862		5,134

**LITERATURE, BRITISH, IN 1893.** The literature of the year is pronounced "eminently satisfactory" by the "London Publishers' Circular," notwithstanding the fact that the birth of no very remarkable work was witnessed. One hundred and twenty-eight more books were written by British authors than in 1892, making a total of 6,382. Fiction increased, particularly in the department of juvenile books, giving more than 5 novels for every working day in the year. Four hundred new works of literary miscellany were chronicled, in addition to 100 new editions, and there was even an increase in poetry; but in theology there was a marked falling off, and history, educational works, law, and political economy also showed a slight decrease.

**Biography.**—No work could have been more attractive to American as well as English readers than the



"Familiar Letters" of Sir Walter Scott, in two volumes, edited by David Douglas, and yet another of surpassing interest was "The Life and Work of John Ruskin," by W. G. Collingwood, which also filled two volumes, handsomely illustrated. "Three Letters and an Essay" of Ruskin were issued, the former written in 1836-'41, and the last at the age of sixteen. J. Cumming Walters gave us studies of "Tennyson, Poet, Philosopher, Idealist"; and William Wright narrated facts stranger than fiction of "The Brontës in Ireland." In the "Great Writers" series W. J. Linton published "The Life of John Greenleaf Whittier"; "Recollections of Dr. John Brown," by Alexander Peddie, were accompanied with selections from his correspondence, and John Churton Collins contributed a biographical and critical study of "Jonathan Swift." "Horace Walpole" was the subject of a memoir by Austin Dobson, and W. Ernest supplied "Memoirs of the Life of Philip Dormer, Fourth Earl of Chesterfield." "Footprints of Statesmen during the Eighteenth Century in England" were followed by Reginald Baliol Brett, and W. McCullagh Torrens told of his "Twenty Years in Parliament." The "Life and Letters of the Right Hon. Robert Lowe, Viscount Sherbrooke," by A. Patchett Martin, filled two volumes, as did the "Life and Times of the Right Hon. William Henry Smith," by Sir Herbert Maxwell. "Letters, Remains, and Memoirs of Edward Adolphus Seymour, Twelfth Duke of Somerset," were edited and arranged by W. H. Mallock and Lady Guendolen Ramsden; "Some Further Recollections of a Happy Life" were edited from the journals of Marianne North by her sister, Mrs. John Addington Symonds, and other volumes full of interest were: "The Diary of Col. Peter Hawker, 1802-1853"; "A Sketch of the Life of Georgiana, Lady De Ros," by her daughter, Mrs. J. R. Swinton; "Hic et Ubique," by Sir W. Fraser; and "The Letters of Lady Burgherssch," from Germany and France during the campaign of 1813-'14. "Some Notes of the Past," by Sir Henry Drummond Wolff, related events of the Franco-German War. A. J. C. Hare told "The Story of Two Noble Lives," those of Charlotte, Countess Canning, and Louisa, Marchioness of Waterford, in three volumes, while two were filled with "The Life of Capt. Sir Richard F. Burton," by his wife, Isabel Burton, who also edited the memorial edition of his works. To Clarence Ford we are indebted for the "Life and Letters of Madame de Krüdener." Francis Espinasse published "Literary Recollections and Sketches"; Henry Vizetelly, "Glances Back through Seventy Years"; John Cordy Jeaffreson, "A Book of Recollections"; James Bertram, "Some Memories of Books, Authors, and Events," belonging to Edinburgh; while "Lights and Shadows in the Life of an Artisan" was a rather unique volume by Joseph Gutteridge. The second volume of "Annals of my Life," by Bishop Wordsworth, covered the period 1847-'56; two volumes were issued of a "Life of Edward Bouverie Pusey," written by Canon Liddon, and to the same period belongs "William George Ward and the Catholic Revival," by Wilfrid Ward, as signal a success as his previous volume on the Oxford movement, and "Memorials of Mr. Serjeant Bellasis," by Edward Bellasis. Rev. Walter Lock contributed "John Keble" (in this the centennial year of his birth) to the series of "English Religious Leaders," another volume of which was "Thomas Chalmers," by Mrs. M. O. W. Oliphant; Roland E. Prothero gave us "The Life and Correspondence of Arthur Penrhyn Stanley, D. D."; and Rev. John Owen treated of "The Skeptics of the Italian Renaissance," and also of those of the French Renaissance in a companion volume. Archdeacon Denison published a "Supplement to Notes of my Life," and Sir Monstuart Grant Duff a tribute to "Ernest Renan." John Milum added "Thomas Birch Freeman, Missionary Pioneer to Ashanti, Dahomey, and Egba," to the "Missionary Biography Series"; a cousin of A. M. Mackay of Uganda was commemorated in "A. Mac-kay Ruthquist; or, Singing the Gospel among Hindus

and Gónds," by J. W. H.; and "Baroness Burdett-Coutts," was the title of a sketch of the public life and works of that philanthropist prepared for the lady managers of the World's Columbian Exposition by command of Her Royal Highness the Duchess of Teck. Mrs. Annie Besant's "Autobiography" was welcomed by her admirers. In the "Great Educators" series, "Froebel, and Education by Self-Activity" was by Henry Courthope Bowen, and "Abélard and the Origin and Early History of Universities," by Gabriel Compayré. "Napoleon, Warrior and Ruler," by W. O'Connor Morris, belonged to the "Heroes of the Nations" series, as did "Henry of Navarre and the Huguenots of France," by P. F. Willert; while in the "Rulers of India" series "Lord Hastings" and "Aurangzib" were by Sir W. Wilson Hunter; "The Marquess of Hastings," by Major Ross-of-Bladensburg, C. B., "Haidar Ali and Tipú Sultán," by Lewin B. Bowring; "The Marquis of Wellesley," by Rev. W. H. Hutton; "James Thomas," by Sir Richard Temple; "The Earl of Auckland," by L. J. Trotter; and "Lord Clive," by G. B. Malle-son. "The Earl of Aberdeen" was the subject of a monograph by Hon. Sir Arthur Gordon in the "Prime Ministers of Queen Victoria" series. "Edward the First" was ranked among the "Twelve English Statesmen," by T. F. Tout. "Charles Darwin: His Life told in an Autobiographical Chapter" was in reality an abbreviation of the "Life and Letters" of the great naturalist, by his son Francis Darwin. Whitley Stokes edited the "Life and Speeches of Sir Henry Maine," and Rev. T. T. Carter, "Nicholas Ferrar, his Household and his Friends." Catherine J. Hamilton gave us a second series of "Women Writers," and F. Forster Buffen another of "Musical Celebrities," and Vols. III and IV of biographies of "Eminent Persons" were reprinted from the London "Times." Raymond Blathwayt collected "Interviews" with various distinguished persons. Arthur Hill Hassall volunteered the "Narrative of a Busy Life"; Mrs. Newton Crosland (Camilla Toulmin), "Landmarks of a Literary Career, 1820-'92"; and W. R. Le Fanu, "Seventy Years of Irish Life." Four volumes contained the "Diary and Letters of Madame F. B. d'Arblay," edited by her niece, Charlotte Barrett, and Henry B. Wheatley edited "The Diary of Samuel Pepys," with additions. G. Barnett Smith was the author of a "Life of Ferdinand de Lesseps," and H. R. Haweis selected "Sir Morell Mackenzie" for the theme of a controverted memoir. Thomas and Paul Sandby gave us "Biographies of British Artists," illustrated; Alfred T. Story, "William Blake: His Life, Character, and Genius"; the "Life and Works of Jean Léon Gérôme," by Fanny Field Hering, was published in an expensive *édition de luxe*; while to a remoter period belong "Madame: A Life of Henrietta, Daughter of Charles I, and Duchess of Orleans," by Julia Cartwright; a biography of "Joan of Arc," by Lord Ronald Gower; and "Mary Stuart," by John Skelton. The thirty-seventh volume of the "Dictionary of National Biography," edited by Sidney Lee, was reached, and "Cassell's New Biographical Dictionary" was issued. "Historic Personality," by Francis Seymour Stevenson, M. P., contained many clever, quotable things about biographies and biographers.

**Essays.**—Under this head, which includes more than is properly implied by the title, belong Walter Pater's lectures on "Plato and Platonism," and Coventry Patmore's twenty-three short essays entitled "Religio Poeta," both of which won the highest commendation from all critics, the former having been pronounced the most beautiful prose book of the year. Edmund Gosse discussed "Questions at Issue" in the literary life of to-day; William Watson abandoned poetry for a time to make "Excursions in Criticism"; Andrew Lang gave himself with delightful enthusiasm to a defense of "Homer and the Epic"; John Addington Symonds, whose death during the year is to be regretted, published "In the Key of Blue, and Other Prose Essays," and an exhaustive



study of our own "Walt Whitman," who was again the theme of Oscar L. Twigg in "Browning and Whitman: A Study in Democracy," "Essays and Addresses" of the Rt. Hon. A. J. Balfour, M. P., were welcomed in a collected form, and C. H. Pearson, in "National Life and Character: A Forecast," reached conclusions which are not encouraging, if ably set forth. "The Australians: A Social Sketch" was from the pen of Francis Adams. Cardinal Manning's "Pastime Papers," Mr. Goschen's book on "The Cultivation and Use of the Imagination," "Scers and Singers," by Arthur D. Innes, and "Studies in Life and Literature," by C. H. Lusted, found many readers, while to Rev. Alfred J. Church we owe "Pictures from Greek Life and Story." Stopford A. Brooke devoted two volumes to "The History of Early English Literature: Being the History of English Poetry" from its Beginnings to the Accession of King Ælfred, and "The Victorian Age of English Literature," by Mrs. M. O. W. Oliphant and F. R. Oliphant, filled two more. Vol. X of Henry Morley's "English Writers" was given to "Shakespeare and his Time: Under Elizabeth"; "Essays on Lord Tennyson's Idylls of the King" were written for British Indian students by Prof. Harold Littledale, but proved a valuable contribution to Tennysonian literature at home and in America; "Folia Litteraria," by John W. Hales, consisted of essays and notes on English literature; William Renton furnished "Outlines of English Literature" for the "University Extension Manuals"; and Frederic Harrison was heard from on "The Choice of Books," "The Sonnet in England, and Other Essays" were welcomed from J. Ashcroft Noble, Vol. VI of "The Bookworm" was issued, Leopold Wagner treated of "The Significance of Names," A. C. Champneys wrote a "History of English," tracing the origin and development of the language, and R. F. Brewer added to his "Orthometry" what he termed a new and complete rhyming dictionary. B. H. Wheatley's "Literary Blunders," in the "Book-Lovers' Library," was a delicious chapter in the history of human error, and "Books about Books" contained "Book-Plates," by W. J. Hardy, and "The Great Book Collectors," by C. I. and Mary A. Elton, while E. Gordon Duff told of "Early Printed Books" and Falconer Madan of "Books in Manuscript." W. Roberts contributed a chapter on the history of typography entitled "Printer's Marks," "The Highway of Letters and its Echoes of Famous Footsteps," by Thomas Archer, is full of delicious reminiscences of Fleet Street, Rev. W. Tuckwell told of "The Ancient Ways" of Winchester and its college, "Aspects of Modern Oxford" were presented by A. Mere Don, and from Mr. Frederic Harrison we had "Annals of an Old Manor House" (Sutton Place, Guilford). "The Legendary Lore of the Holy Wells of England" was explored by R. C. Hope; G. F. Northall gave us "English Folk-Rhymes"; Augustus Jessopp was charming as ever in "Random Roaming"; Jane Barlow's "Irish Idylls" are full of sympathetic insight into the life and character of the nation; Phil Robinson recorded "Some Country Sights and Sounds," and in "The Poets and Nature" tells of reptiles, fishes, and insects, having already told of "Poets' Birds" and "Poets' Beasts"; Alexander H. Japp wrote of "Hours in my Garden," with other nature sketches, and much of the same delicate perception of her beauties is found in "An Old Woman's Outlook in a Hampshire Village," by Charlotte M. Yonge, and "Letters to Marco," by George D. Leslie. "Life in a North Country Village" was described by M. E. Francis. David Masson followed "In the Footsteps of the Poets," Jerome K. Jerome vouchsafed "Novel Notes," and other works of humor were "From Wisdom Court," by Henry Seton Merriman and Stephen Tallentyre, "Mr. Punch's Prize Novels," and F. Anstey Guthrie's "Mr. Punch's Pocket Ibsen," "The Sunny Days of Youth," by Edward J. Hardy, "Towards the Sunset," by A. K. H. Boyd (the Country Parson) and "Windfalls of Observation," by E. S. Martin, may be classed together. Prof. A. H. Sayce

threw "Fresh Light on Biblical Races" in six volumes, and in "By-Paths of Bible Knowledge" described social life among the Assyrians and Babylonians, while W. A. Clouston selected "Five Hundred and Eighty-nine Wise Sayings," largely from Eastern sources. E. Maunde Thompson prepared a "Handbook of Greek and Latin Palæography." "Representative English Literature from Chaucer to Tennyson" was arranged by Henry S. Pancoast, and Henry Craik supplied critical introductions to his "English Prose Selections," of which Vol. I appeared. John Veitch was an authority on "The History and Poetry of the Scottish Border," and "Three Centuries of Scottish Literature" were reviewed by Hugh Walker. "The Best Letters of William Cowper" were issued in the "Laurel-Crowned Letters Series," Augustus Jessopp prefaced a selection of the "Wise Words and Quaint Counsels of Thomas Fuller" with a life of their author, and "Selections from the Writings of William Blake," the painter and poet, were made. A handsome tercentenary edition was also issued of Isaak Walton's "Complete Angler," in two volumes, illustrated.

**Fiction.**—A stronger tendency toward "realism" and an increase in the number of "short stories" are lamented by critics across the water in their comments on the fiction of the year. "The Heavenly Twins," by "Sarah Grand," attained a larger sale than any English novel since "Robert Elsmere," and "Dodo," a *fin de siècle* heroine of an unattractive type, was portrayed by E. F. Benson. Walter Besant, in "The Rebel Queen," depicted Hebrew life, and dealt with the problem of woman's position and rights, and William Black wrote "The Handsome Humes" and "Wolfenberg," the latter "wholesome, picturesque, and breezy" as ever. J. M. Barrie published three books, "Two of Them," "An Auld Licht Manse," and a "Tillyloss Scandal," while "The Stickit Minister, and Some Common Men," by S. R. Crockett, was a warning to him to look to his laurels as the delineator of Scottish life and character. Rudyard Kipling returned to the field in which he showed himself a master in his 15 short stories entitled "Many Inventions"; Olive Schreiner (Ralph Iron) contributed a little African story, "Dream Life and Real Life," and from A. Conan Doyle we had three books, "The Refugees," a tale of two continents and the Huguenot persecution in France, "The Sign of the Four," and "The Firm of Girdlestone," a romance of the unromantic. I. Zangwill wrote "Merely Mary Ann"; Mary Angela Dickens, "A Mere Cipher"; "The Last Sentence" sustained the reputation won by Maxwell Gray; Mrs. M. G. Tutielt in "The Silence of Dean Maitland"; and somewhat akin in theme to this last was "The Transgression of Terence Clancy," by Harold Vallings. "The Highland Nurse," by the Duke of Argyll, recalls the author of Waverley; Mrs. M. O. W. Oliphant wrote "The Sorceress" and "The Marriage of Elinor," and contributed, with Thomas Hardy, W. E. Norris, J. M. Barrie, and others, to "Stories in Black and White"; S. Baring-Gould wrote "Mrs. Curgenven of Curgenven" and "Cheap Jack Zita"; W. Clark Russell, "List, Ye Landsmen" and "The Tragedy of Ida Noble"; W. E. Norris, "A Deplorable Affair"; Grant Allen, "Blood Royal," "The Scallywag," "Michael's Crag," and "Ivan Greet's Masterpiece"; Beatrice Whitby, "In the Suntime of her Youth"; F. W. Robinson, "The Wrong that was done"; Jessie Fothergill, in "Oriole's Daughter," dealt with art life in Rome with all the charm that made "The First Violin" so marked a success; George Gissing, in "The Odd Women," made a pessimistic study of the "woman question"; Hubert Crackanthorpe painted powerful pictures in "Wreckage," a collection of short stories on the seamy side of life, with which may be mentioned "Keynotes," by George Egerton (Mrs. Clairmonte), and "A Book of Strange Sins," by Coulson Kernahan. "Pastorals of France" and "Renunciations," by Frederiek Wedmore, in one volume, deal with gentler scenes, as did



"The Delectable Duchy," by Q (Arthur Quiller-Couch). Mrs. F. A. Steele sent six short stories "From the Five Rivers" of India, and Frank Mathews saw the west coast of Ireland and its people "At the Rising of the Moon." Charles Haddon Chambers drew "Thumb-Nail Sketches of Australian Life," and J. H. Pearce recounted "Drolls from Shadowland." Frank Frankfort Moore, in "I forbid the Banns," dealt yet again with the sex question, describing a comedy which was played seriously; the influence of heredity was traced "From One Generation to Another" by Henry Seton Merriman; John Oliver Hobbes (Mrs. Craigie) made "A Study in Temptations"; and David Christie Murray described "A Wasted Crime," and also "Time's Revenges." Other well-known authors were represented: Ada Cambridge, by "A Little Minx"; Rosa Nouchette Cary, by "But Men must work"; Florence Warden, by "My Child and I," "Grave Lady Jane," "A Shock to Society," and "A Terrible Family"; Mrs. Alexander (Mrs. Annie F. Ilector), by "Found wanting"; George MacDonald, by "Heather and Snow"; Matilda Betham-Edwards, by "The Curb of Honor"; Justin McCarthy, by "The Dictator" (of a South American state); B. L. Farjeon, by "Something occurred"; George Manville Fenn, by "A Secret Quest," "Witness to the Deed," and "Nurse Elisia"; Adeline Sergeant, by "Christine"; Anthony Hope, by "Half a Hero," the scene of which was laid in the South Pacific; Stanley J. Weyman, by "A Gentleman of France"; Mrs. Forrester, by "Dearest"; Florence Marryat, by "Parson Jones"; Frank Barrett, by "Kitty's Father," "Out of the Jaws of Death," and "The Woman of the Iron Bracelets"; Joseph Hatton, by "Under the Great Seal," a story of St. John's, Newfoundland, a hundred years ago; Annie Thomas, by "Utterly Mistaken"; Fergus Hume, by "The Harlequin Opal"; and Mrs. W. K. Clifford, by "A Wild Proxy." H. Rider-Haggard went to Mexico for "Montezuma's Daughter"; "Mark Rutherford's Autobiography," which aroused much comment some years since, was supplemented in 1893 by "Mark Rutherford's Deliverance"; Miss Lily Dougall, the author of "Beggars All," showed deep spiritual insight in "What Necessity knows." Christabel R. Coleridge wrote, alone, "Waynflete," as Miss Charlotte M. Yonge did "Grisly Grisell," while both collaborated upon "Strolling Players." M. E. Braddon (Mrs. John Maxwell) laid the scene of "All along the River," first upon the Cornish coast, shifting it afterward to France and Italy; The Duchess added "The Hoyden" to her long list of similar heroines, and also described "Lady Verner's Flight," while John Strange Winter (Mrs. H. E. V. Stannard) analyzed "The Soul of the Bishop." It only remains to mention briefly "A Comedy of Masks," by Ernest Dowson and Arthur Moore; "Can this be Love?" by Mrs. Louisa Parr; "Tiny Luttrell," an Australian story, by Ernest W. Hornung; "Catherine," by Frances M. Peard; "The Red Sultan" and "The Burden of Isabel," by J. Maclaren Cobban; "A Trying Patient, and Other Stories," by James Payn; "A Woman of Forty" and "Out of Reach," by Esmé Stuart; "A Moral Dilemma," by Annie Thompson; and "To right the Wrong," by Edna Lyall (Ada Ellen Bayly). Andrew Lang gave to young readers and their sympathizers "Prince Ricardo of Pantouffia," being the adventures of Prince Prigio's son; and he also contributed introductory essays and notes to an American illustrated edition of the Waverley novels, in 48 volumes, initiated during the year, and limited to 1,000 copies.

**Fine Arts.**—Only 86 books were issued in this department in 1893, whereas 1892 showed 147, and among these, it is to be remembered, are included illustrated books. The most important were George Moore's "Modern Painting," fiercely polemical, but coming sometimes close to the soul of things; Philip Gilbert Hamerton's brief exposition of the technical principles and practice of "Drawing and Engraving," and "The Evolution of Decorative Art," by Henry

Balfour. F. E. Hulme treated also of "The Birth and Development of Ornament." William Morris edited "Arts and Crafts Essays," by members of the Arts and Crafts Exhibition Society, with an introduction, and Marcus B. Huish supplied "The Year's Art for 1893." Vols. III-V appeared of "The Castellated and Domestic Architecture of Scotland from the Twelfth to the Eighteenth Century," by David McGibbon and Thomas Ross, and "Inigo Jones and Wren," by William J. Loftie, traced the rise and decline of modern architecture in England. Tavenor Perry supplied a "Chronology of Architecture, 306-1626." J. S. Gardner wrote on "Ironwork: From the Earliest Times to the End of the Mediæval Period." Percy Fitzgerald's "London City Suburbs as they are To-day" was splendidly illustrated by W. Luker, Jr., and P. Norman wrote on "London Signs and Inscriptions." "Latin Historical Inscriptions, illustrating the History of the Early Empire" was a work of unusual interest and value by J. McN. Rushforth, and W. Carew Hazlitt made a study of "The Coinage of the European Continent." Four lectures of Henry Irving upon "The Drama" were collected into a volume, and contain the last word upon the subject from unimpeachable authority. F. T. Pigott wrote upon "The Music and Musical Instruments of Japan," and Georgiana Hill filled two volumes with "A History of English Dress" from the Saxon period to the present. "Lord Tennyson and his Friends" was the title of a series of 25 portraits with reminiscences by Anne Thackeray Ritchie, and the Hon. Mary Monica Scott described "Abbotsford and the Personal Relics and Antiquarian Treasures of Sir Walter Scott," which were illustrated by William Gibb. Miss S. T. Prideaux supplied "An Historical Sketch of Book-binding."

**History.**—No historical work of sterling value is to be recorded from English authors. C. S. Fearensides's "Intermediate Text-Book of English History" was continued to cover the period 1485-1603; Rev. Sir G. W. Cox published "A Concise History of England and the English People"; Montagu Burrows, "Commentaries of the History of England from the Earliest Times to 1865"; and Edgar Sanderson, a "History of England and the British Empire"; while H. Morse Stephens gave his attention to "Europe, 1789-1815." The "History of Modern Europe," by the late C. A. Fyffe, filled three volumes. Sir Alfred Lyall traced "The Rise of the British Dominion in India," Sir George Campbell gave to the public his "Memoirs of my Indian Career," G. W. Forrest edited Vol. I of "Selections from State Papers" upon "The Indian Mutiny," William Forbes Mitchell contributed "Reminiscences of the Great Mutiny, 1857-59," and J. Tulloch Nash "Volunteering in India during the Indian Mutiny and Sepoy War." H. G. Keene wrote a "History of India from the Earliest Times to the Present Day," for the use of students and colleges. In the "Epochs of Indian History" series, "Ancient India 2000 B. C.-800 A. D." was by Romesh Chunder Dutt. D. C. Boulger wrote "A Short History of China," and, crossing to the Dark Continent, we have "The Rise of our East African Empire: Early Efforts in Nyassaland and Uganda," by Capt. F. D. Lugard, in two volumes; "A History of the Gold Coast of West Africa," by Col. A. B. Ellis; and Vol. VI of George McCall Theal's "History of South Africa," covering the period 1834-54. In the "Story of the Nations" series "The Story of Parthia" was written by George Rawlinson, "The Story of Poland," by W. R. Morfill, and "The Tuscan Republics," by Bella Duffy. In the "University Series" Arthur J. Grant portrayed "Greece in the Age of Pericles"; W. Warde Foster made a study of "The City-State of the Greeks and Romans"; "Outlines of Roman History" was a useful book of reference by Henry F. Pelham; and in the "University Extension Manuals" "The French Revolution" formed the theme of C. E. Mallet. W. A. Salisbury sent out a history of "Portugal and its People." Special studies were "The Grey Friars in Oxford," by Andrew G. Little; "The Jews of Ange-



vin England," a collection of documents and records collected and translated for the first time, edited by Joseph Jacobs; Walter Besant's "History of London"; and Canon Raine's "York." William Stephen wrote a "History of the Scottish Church," G. Buchanan Ryley and John M. McCandlish on "Scotland's Free Church," and Dr. Bayne on "The Free Church of Scotland," while P. W. Joyce supplied a "Short History of Ireland from the Earliest Times to 1603," Sir Charles Gavan Duffy edited with an introduction Thomas Davis's account of "The Patriot Parliament of 1689, and Spencer Walpole's "The Land of Home Rule" contained an interesting account of the Isle of Man. T. P. O'Connor made "Sketches in the House" during the last parliamentary session, and the year witnessed the completion of the illustrated editions of Green's "Short History of the English People."

**Physical, Moral, and Intellectual Science.**—Two of the projected nine volumes of Prof. Huxley's "Collected Essays" were issued during the year, the first being upon "Methods and Results," and the second entitled "Darwiniana," while the Romanes lecture for 1893 upon "Evolution and Ethics" was also delivered by him. Herbert Spencer criticised Weismann's theories in an essay reprinted from the "Contemporary Review" upon "The Inadequacy of Natural Selection"; George J. Romanes made "An Examination of Weismannism," and a translation of Weismann's "The Germ-Plasm," it may be added, made one of the volumes of the "Contemporary Science Series"; Henry B. Orr offered "A Theory of Development and Heredity"; and Francis Galton wrote on "Deciphering of Blurred Finger-Prints." John Gray McKendrick and William Snodgrass collaborated upon "The Physiology of the Senses," in the "University Extension Manuals," other volumes of which were "Chapters in Modern Botany," by Patrick Geddes, and an introduction to modern geology entitled "The Earth's History," by R. D. Roberts. Henry Walter Bates's "The Naturalist on the River Amazons" was reissued, with a memoir of the author by Edward Clodd. In the "Contemporary Science Series" we had an outline of the growth and present condition of some phases of "Modern Meteorology," by Frank Waldo, and "Public Health Problems," by John F. J. Sykes. George Massee published "British Fungus Flora: A Classified Text-Book of Mycology"; L. N. Badenoch, "The Romance of the Insect World"; A. Newton and H. Gadow issued Part I of their "Dictionary of Birds"; Rev. Murray A. Mathew gave his attention to "The Birds of Devon"; Sir Robert Stawell Ball told of the wonders "In the High Heavens," and also "The Story of the Sun"; while "Some Salient Points in the Science of the Earth," by Sir J. William Dawson, was pronounced by far the most interesting as well as the most forcible of his works. Sir Henry Howarth, M. P., appealed for the second time to common sense against the extravagance of some recent geology in "A Glacial Nightmare and Flood," and W. Saville-Kent described "The Great Barrier Reef of Australia." St. George Mivart published a work on "American Types of Animal Life," contrasting them with Old World forms, which he offered as an introduction to the study of the higher animals, especially the mammalia. Rising to man, we have "Three Introductory Lectures on the Science of Thought," by F. Max Müller, with an appendix which contains a correspondence on "Thought without Words"; Prof. Henry Calderwood treated of "Evolution and Man's Place in Nature"; Herbert Spencer published Vol. II of "The Principles of Ethics," containing "Justice," "Negative Beneficence," and "Positive Beneficence"; and David G. Ritchie, "Darwin and Hegel, with Other Philosophical Studies." William Morris and E. Belford Bax wrote on "Socialism: Its Growth and Outcome," while Bernard Bosanquet gave us "The Civilization of Christendom, and Other Studies" in "The Ethical Library." Ramsden Balmforth (Laon Ramsey) contributed "The New Reformation and its Relation to Moral and Social Problems"

to the "Social Science Series." "The Ethic of Usury and Interest," by W. Blissard, purported to be a study in inorganic socialism; Charles Booth published Vols. III and IV of his examination into the "Life and Labor of the People in London," covering respectively "Blocks of Buildings, Schools and Immigration," and "The Trades of East London"; W. J. Ashley issued two volumes of "An Introduction to English Economic History and Theory"; W. H. Mallock was heard from on "Labor and the Popular Welfare"; and L. T. Hobhouse on "The Labor Movement." The Duke of Argyll, in "The Unseen Foundations of Society," made what he termed an examination of the fallacies and failures of economic science due to neglected elements; Dr. James Bonar broke entirely fresh ground in his survey of "Philosophy and Political Economy in some of their Historical Relations"; Shaw Lefèvre's "Agrarian Tenures" surveyed the land laws of the United Kingdom, while Harold Cox wrote on "Land Nationalization." Charles L. Tupper's work on "Our Indian Protectorate" was an introduction to the study of the relations between the Government of the mother country and its Indian feudatories; Prof. Dicey condemned the Home-Rule bill as "A Leap in the Dark"; and W. Charteris Macpherson suggested the reform of the House of Lords in "The Baronage and the Senate." "The Golden Book of India," compiled by Sir Roper Lethbridge, was a genealogical and biographical dictionary of the ruling princes, nobles, and other important personages of the Indian Empire. Herbert Joyce wrote "The History of the Post Office," and John Edgar a "History of Early Scottish Education." Baroness Angelina Georgina Burdett-Coutts edited a series of papers on "Woman's Mission" (of philanthropic work) by eminent writers, and Henry Frith chronicled "The Romance of Navigation." "The Evolution of Religion" was the theme of the Gifford Lectures of 1890-'91 and 1891-'92, by Edward Caird, and filled two volumes; other lecturers on the same foundation were James Hutchison Stirling, on "Philosophy and Theology," and Sir George G. Stokes, on "Natural Theology." The Hibbert Lectures for 1892 were by C. G. Montefiore, upon "The Origin and Growth of Religion, as illustrated by the Religion of the Ancient Hebrews," and the Rev. George Matheson set forth "The Distinctive Messages of the Old Religions." Charles Thomas Cruttwell wrote "A Literary History of Early Christianity," in two volumes; Robert F. Horton delivered the Yale Lectures on preaching for 1893 upon the Lyman Beecher Foundation entitled "Verbum Dei," and Bishop William Alexander (of Derry and Raphoe) visited our country and lectured before the president, faculties, and students of Columbia College upon "Primary Convictions" of the soul. William Knight examined "Aspects of Theism," as J. D. King did "The Supernatural"; the Bampton Lectures for 1892, by Canon Alfred Barry, were entitled "Some Lights of Science on the Faith"; Canon Bright treated of "Morality in Doctrine"; William Dearing Harden made "An Inquiry into the Truth of Dogmatic Christianity"; Charles A. Whittuck wrote on "The Church of England and Recent Theological Thought"; two books on the early days of Christianity were "The Church in the Roman Empire before A. D. 170," by W. M. Ramsay, and "Christianity and the Roman Empire," by W. E. Addis; while Arthur Lillie traced "The Influence of Buddhism on Primitive Christianity," in addition to attacking "The Great Enigma" of life. From Leslie Stephen emanated "An Agnostic's Apology," and other essays, A. J. Dadson treated of "Evolution and Religion," as F. W. H. Myers did of "Science and the Future Life." Wilfrid Ward offered "Witnesses to the Unseen, and Other Essays"; A. M. Fairbairn, D. D., defined "The Place of Christ in Modern Theology" in a work of admirable scope and power, and published also a volume of sermons, "Christ in the Centuries"; from Dr. Brooke Foss Westcott, now



Bishop of Durham, we had "The Gospel of Life," and also a charge to the clergy of his diocese upon "The Incarnation" as a revelation of human duties; Dr. Cheyne named "Founders of Old Testament Criticism"; and the Rev. J. A. McClymont dwelt upon "The New Testament and its Writers." Dr. Clifford spoke on "Christian Certainties"; Dean Church preached "Cathedral and University Sermons"; the last work upon which Charles H. Spurgeon was engaged, "The Gospel of the Kingdom: A Popular Exposition of the Gospel according to Matthew," was given to the world during the year with introductions by Mrs. Spurgeon and the Rev. Arthur T. Pierson; Henry Drummond published an address upon "The City without a Church"; Arthur Wilink argued for "The World of the Unseen"; Hugh Macmillan and Canon Faber issued volumes of "Sermons"; the Hulsean Lectures of 1871, by Dr. Fenton J. A. Hort, upon "The Way, the Truth, the Life," were published, and Dr. Alexander MacLaren, in addition to "Paul's Prayers, and Other Sermons," contributed a volume to the new sixth series of the "Expositor's Bible," selecting "The Psalms, I-XXXVIII," for his theme. Other volumes were "Ezra, Nehemiah, and Esther," by Walter F. Adey; "The Book of Joshua," by Dr. William G. Blaikie; "The First Book of Kings," by Canon Farrar; and the "Epistle to the Philippians," by Dr. Robert Rainy. "Joshua and the Land of Promise," by Rev. F. B. Myer, appeared in the "Old Testament Heroes" series. The second of twenty contemplated volumes of the "Preacher's Complete Homiletic Commentary" was issued, devoted to "The Book of Exodus"; "The People's Bible" of Dr. Joseph Parker reached its twenty-second volume; and "II Corinthians-Philippians" and "Colossians-James" were the additions to "The Sermon Bible." R. M. Benson gave three volumes to the "Final Passover," and a fourth is to be expected. Of exceptional interest was J. Rendel Harris's story of "The Newly Recovered Gospel of St. Peter," with a full account of the same, and J. Armitage Robinson and Montague Rhodes James lectured on it as "The Apocryphal Gospel of St. Peter," in a volume of the "Cambridge Texts and Studies." "Faith and Criticism" was the latest expression of Congregationalism. In conclusion, it remains to mention the Rev. F. D. Maurice's "Patriarchs and Lawgivers" and "Prophecies and Kings," both of the Old Testament. The last hours of Prof. Minto were spent upon his "Logic: Inductive and Deductive," in the "University Extension Manuals," and Alfred Sidgwick followed with "The Process of Argument." "Theosophy; or, Psychological Religion," was the theme of F. Max Müller's Gifford Lectures for 1892; Mrs. Besant asked "Death—and After?" and "Hypnotism, Mesmerism, and the New Witchcraft" were explained by Ernest Hart. Volumes of a miscellaneous character, which may be as well included under this head as any other, were "Electrical Papers," by O. Heaviside, in two volumes; "Short Stalks; or, Hunting Camps North, South, East, and West," by Edward North Buxton, illustrated by Whymper, Lodge, Wolf, and others; "Fishing Experiences of Half a Century," by F. Howell Hopkins; "The Art of Golf," by Sir W. G. Simpson, and the two contributions to the "Badminton Library" of "Coursing and Falconry" and "Swimming." "Agricultural Analysis" was a manual of quantitative analysis for students of agriculture, by Frank T. Addyman. "The Statesmen's Yearbook" for 1893, edited by J. Scott Keltie, reached its thirtieth year of issue.

**Poetry.**—More poetry was written in 1893 than in the preceding year, and, indeed, the present may be termed the golden age of poets, inasmuch as their verses are actually sold and "new discoveries" are being constantly made of genius. But the younger generation alone was mostly represented. Miss Christina Rossetti published a volume of "Verses," pronounced the best of the year, and "King Poppy," "for years the cherished literary offspring of Lord

Lytton's brain," which was first conceived in 1872, put into verse in 1874, and rewritten and retouched between 1887 and 1890, at last given to the world in 1893, proved to be "that rare thing in poetry—a novelty." William Watson published "The Elopings: Angels: A Caprice"; Michael Field, "Underneath the Bough: A Book of Verses," and a play in prose, "A Question of Memory"; and Robert Buchanan "The Wandering Jew," which gave rise to considerable controversy. We have volumes of "Poems" from Francis Thompson, Mrs. Meynell, and Arthur Christopher Benson; Norman R. Gale wrote "A Country Muse" (new series) and "Orchard Songs"; W. B. Yeats, "The Countess Kathleen"; John Davidson, "Fleet Street Eclogues"; Maude Egerton King, "A Book of Songs and Sonnets"; Aubrey De Vere, "The Forming of Queen Meare, and Other Legends of Ireland's Heroic Age"; W. H. Mallock, "Verses"; F. W. Bourdillon, "Sursum Corda"; Theodore Wratishaw, "Caprices," fervently *fin-de-siècle* in tone; Miss Evelyn Douglas, "Songs of a Bayadere"; William Allan, M. P., "A Book of Poems," "Rose and Thistle," "After Toil Songs," and "Northern Lights"; Mrs. Augusta Webster, "Selections" and "Portraits"; Miss Mary F. Robinson (Mme. Darmesteter), "Retrospect"; Bryan C. Waller, "Perseus in the Hesperides"; C. Weekes, "Reflections and Refractions"; Hon. Roden Noel's "Poems" had an introduction by Robert Buchanan; "Under the Hawthorn, and Other Verses" of Mrs. de Gruchy were published posthumously; Lord Houghton's "Stray Verses, 1889-90" deserve mention; "Echo and Narcissus" came from J. W. Aizlewood, "Sprete Carmina Musæ" from Pakenham Beatty, and "Ballads of a Bohemian" from S. J. Adair Fitz-Gerald. "Poems Dramatic and Lyrical" of Lord de Tabley were reissued from former volumes of his verse. A handsome American edition of "The City of Dreadful Night," by James Thomson, had an introduction by Elizabeth Cavazza, and Austiu Dobson's "Proverbs in Porcelain," to which was added "Au Revoir," a dramatic vignette, formed one of the holiday volumes. Sir John Croker Barrow was the author of "The Seven Cities of the Dead, and Other Poems," and Count Stenbock of "The Shadow of Death." The sole work of Sir Edwin Arnold was "Adzuma; or, The Japanese Wife," a play in four acts, and two comedies were written by Robert Bridges and Henry Arthur Jones, entitled "The Humors of the Court" (with which were included other poems) and "The Crusaders." The final volume of "The Poets and the Poetry of the Century," edited by Alfred H. Miles, includes selections from Mr. Bridges and from Kipling's "Barrack-Room Ballads"; and among other collections of value may be mentioned "The Love Songs of Connacht," by Douglas Hyde, "The Ballad Minstrelsy of Scotland" and "Scottish Ballad Poetry," edited by G. Eyre Todd. Richard Le Gallienne contributed an introduction to the "Poems of Arthur Henry Hallam," which he edited, and in the "Book-Lovers' Library," Gleeson White edited "Book Song," an anthology of poems of books and bookmen from modern authors. An especially valuable edition of "The Poetical Works of Milton" was that edited by Prof. Masson with a memoir, introduction, notes, and an essay on Milton's English and versification. "Selected Poems of Matthew Arnold" appeared in the "Golden Treasury Series," and "Poems by the Brontës" were collected into a volume.

**Voyages and Travels.**—"Studies of Travel," by the late historian Edward A. Freeman, in two volumes, one devoted to Greece and the other to Italy, we owe to his daughter; and "Artistic Travel," by Henry Blackburn, covered a thousand miles toward the sun through Normandy, Brittany, the Pyrenees, Spain, and Algeria. F. W. W. Howell contributed "Icelandic Pictures" to the "Pen and Pencil Series"; William Bement Lent went "Gypsying beyond the Sea" from English fields to Salerno shores; Edward Harrison Barker's "Wanderings by Southern Waters"



carried him to eastern Aquitaine; the author of "A Day in my Life at Eton" gave an account of his trip "Across France in a Caravan"; E. R. Somerville and Martin Ross wandered "In the Vine Country" of southern France; J. Warren Berry made "Studies in Corsica"; Abel Chapman and Walter J. Buck recorded their sport with rifle, rod, and gun in "Wild Spain"; Wilmot Harrison described "Memorable Paris Houses"; and A. R. Hope Moncrieff edited "Where to go abroad" as a guide to the health resorts. Mrs. Frances Monto Elliot published "The Diary of an Idle Woman in Constantinople"; "Out of Doors in Tsarland," by Frederick J. Whishaw, told of the seeings and doings of a wanderer in Russia; while Kate Marsden narrated the adventures of her journey "On Sledge and Horseback to the Out-cast Siberian Lepers." Fully as miserable as these last were the "Trans-Siberian Savages" B. Douglas Howard visited in Saghalien, and who are again described in "Alone with the Hairy Ainu; or, 3,800 Miles on a Pack Saddle in Yezo, and a Cruise to the Kurile Islands," by A. H. Savage Landor. Miss M. Bickersteth's "Japan as we saw it" had a preface by her father, the Bishop of Exeter, and Edward G. Browne registered his impressions gained in "A Year amongst the Persians." Two volumes contain the results of the Earl of Dunmore's visit to "The Pamirs"; while "Where Three Empires meet," by E. F. Knight, is a narrative of recent travel in Cashmere, western Tibet, Gilgit, and the adjoining countries. "The Simple Adventures of a Memsahib," from the pen of Sara Jeannette Duncan (now Mrs. E. C. Coates), have all the freshness and charm of "A Social Departure" and "An American Girl in London." E. D. Cuning saw Burmese life "In the Shadow of the Pagoda." Jeannette A. Grant went "Through Evangeline's Country," and in "Miss Gray's Girls" described summer days in the Scotch Highlands. C. H. Hudson spent anything but "Idle Days in Patagonia," and Nehemiah Bartley, in "Opals and Agates; or, Scenes Under the Southern Cross and the Magelhans," vouchsafed memories of fifty years of Australia and Polynesia. Eyre Crowe told of what he saw "With Thackeray in America" when he acted as secretary to the great novelist. "Travel and Adventure in Southeast Africa," by F. Courtney Selous, was the narrative of eleven years spent on the Zambezi and its tributaries, with an account of the colonization of Mashonaland and the progress of the gold industry in that country; "Adventures in Mashonaland" were related by two hospital nurses, Rose Blennerhassett and Lucy Sleeman; James Johnston, M. D., gave us "Reality versus Romance in South Central Africa"; D. J. Rankin described "The Zambesi Basin and Nyassaland"; and Dr. J. A. Moloney went as medical officer of the expedition "With Captain Stairs to Katanga." H. Anderson Bryden was at home with "Gun and Camera in Southern Africa"; "Letters from South Africa," by a special correspondent of the "London Times," had a vivid freshness and realism; "On English Lagoons" contained the voyage of two wherry-men on the Norfolk Broads; J. Ll. W. Page traced "The Rivers of Devon from Source to Sea"; and Rev. S. F. Hotchkiss wrote of "The York Road, Old and New, Fox Chase, and Bustleton." "Travels in America One Hundred Years Ago," by Thomas Twining, and "Captain Cook's Journal during his First Voyage Round the World," were interesting reprints. To exploration belong "The City and the Land," seven lectures by Major Conder, Col. Wilson, Walter Besant, Mr. Flinders Petrie, and others, published by the Palestine Exploration Fund, and "How the Codex was found," a narrative of two visits to Sinai, from Mrs. Lewis's journals, 1892-'93, by Margaret Dunlop Gibson.

The following are the figures of book-production in England during 1893, compared with those of 1892, from the London "Publishers' Circular":

DIVISIONS.	1892.		1893.	
	New books.	New editions.	New books.	New editions.
Theology, sermons, biblical, etc.	528	145	459	74
Educational, classical, and philological.....	579	115	518	104
Juvenile works and tales.....	292	53	659	36
Novels, tales, and other fiction..	1,147	390	935	393
Law, jurisprudence, etc.....	36	29	27	23
Political and social economy, trade, and commerce .....	151	24	71	14
Arts, sciences, and illustrated works.....	147	62	86	37
Voyages, travels, geographical research.....	250	86	247	72
History, biography, etc.....	293	75	269	65
Poetry and the drama.....	185	42	197	37
Yearbooks and serials in vols....	360	13	370	1
Medicine, surgery, etc.....	127	50	93	58
Belles-lettres, essays, monographs, etc .....	107	32	96	11
Miscellaneous, including pamphlets, not sermons.....	713	223	1,102	328
	4,915	1,339	5,129	1,253
		4,915		5,129
		6,254		6,382

**LITERATURE, CONTINENTAL.** The usual summary of the most important additions to the literature of Continental Europe is given herewith. Complete lists of publications in Germany, France, Italy, etc., are issued in those countries, in the form of special annual bibliographies similar to those published in England and in the United States.

**Austria.** See **Bohemia, Germany, and Hungary.**  
**Belgium.**—In the domain of history this country's press is, as ever, prolific, national history receiving an especially generous share of attention. The Abbé A. Cauchie has published a monograph on "La grande Procession de Tournai"; Prosper Claeys describes the office of "Le Bourreau de Gand"; the Chevalier Camille de Borman writes of "Les Echevins de souveraine Justice à Liège"; Charles Rahlenbeck has made a study of the "Trois Régentes des Pays-Bas"; and Ernest Discailles has issued works on "Charles Rogier," a prominent leader in the Belgian revolution of 1830, and another remarkable Liberal, "Adelson Castiau." Discailles, and even more so Godefroid Kurth (author of "L'Histoire Poétique des Mérovingiens"), appear to form notable exceptions in animation and warmth of style among Belgian historians, who are accused of a lack of literary qualities. Ecclesiastical history has received noteworthy additions in "Le Diocèse de Liège sous l'Episcopat de Mgr. de Montpellier" (1852-'79), by le Chanoine Daris, and "Le Clergé dans le Diocèse de Tournai," by le Chanoine Vos. Henri Pirenne has issued a valuable "Bibliographie de l'Histoire de Belgique," and a number of inedited documents have been issued, as well as continuations. Mgr. Namèche's great and scholarly "Cours d'Histoire Nationale," which was begun forty years ago, was finished by the publication of the twenty-ninth volume, some months after the death of the author. Other contributions in the field of history and biography include "Souvenirs du Mexique" (1864-'67), by Gen. Van der Smissen, of the Belgian Legion under Maximilian, and "Portraits et Silhouettes," by Baron Prosper de Hauteville. Among the books of travel, Jules Leclercq's "Le Voyage au Mont Ararat" is worthy of note. The year's contributions to political and social science include valuable works like Ed. Vander Smissen's "La Population," Maurice Heins's "Les quatre grandes Villes de la Belgique" (financial and administrative statistics of Brussels, Antwerp, Ghent, and Liège in 1890), and Louis Franck's timely "La Femme dans



les Emplois publics." "Les Bases de la Morale et du Droit," by the Abbé Maurice de Baets, J. J. van Biersvliet's "La Mémoire," and the Abbé A. Auger's "Études sur les Mystiques des Pays-Bas au Moyen-Âge" are among the year's publications in religion and philosophy. The literature of the fine arts has been enriched by Prosper Claeys's "Expositions d'Art à Gand" (1792-1892), Albert Dutry's sketches of "Les Peintres du Peuple," Max Rooses's excellent "L'Œuvre de P. P. Rubens" (5 vols.), and a study of "Alexandre Borodine," a Russian musician, by Alfred Habets. Literary history has likewise received some meritorious contributions, such as "La Poésie néerlandaise contemporaine en Belgique," by Omer Watzet, and Georges Eekhoud's work on English literature, "Au Siècle de Shakespeare." "La Jeune Belgique," that group of young authors, is making propaganda for its ideas in various literary reviews in French, and in the numerous publications by the members of this literary coterie, such as the poetry of Valère Gille, the Abbé Hoornaert, Iwan Gilkin, and André Fontainas, and the novels of Henry Maubel, Arnold Goffin, Frantz Mahutte, Georges Rodenbach, and Camille Lemonnier, both of the latter living in Paris. We are told, however, that the Belgians are quite indifferent to these manifestations of a desire for innovations in the national literature. "Ma Juliette" is a posthumously published story by Jean Rousseau. Charles de Coster was not appreciated during his lifetime, while now come eager but tardy attempts to do him justice by the republication of his masterpiece ("Légende d'Uylenspiegel") and the erection of a monument at Ixelles. Ed. Descamps's antislavery drama, "Africa," was crowned by an antislavery committee at Paris, no doubt influenced by ethical rather than æsthetic principles.

The works of importance in the Flemish language also include some interesting contributions to history, such as the monograph on the Battle of the Spurs ("Slag van Kortrijk"), by J. Frederichs, and the continuation of F. de Potter's work on Ghent, the communal accounts of which city in the days of Philip van Artevelde have been published by J. Vuylsteke. A. Prayon van Zuylen's highly important "De Belgische Taalwetten Toegelicht" gives an account of the laws on the official use of the two national languages, and of the struggle of the Flemings in defense of their language. Prudens van Duyse, a prominent Flemish poet during the literary revival of the Thirties, forms the theme of a volume by J. Micheels, while the centenary of the birth of Jan Frans Willems, father of the Flemish movement, was celebrated in a volume containing three studies, by Max Rooses, Julius Vuylsteke, and G. Berginann respectively, and issued by the society founded some forty years ago in Willems's honor. The extent of this Flemish literary movement has already called for a "Vlaamse Bibliographie," edited by F. de Potter, under the auspices of the Royal Flemish Academy (Vol. I). The history of the Flemish theater in the eighteenth century has been written by O. van Hauwaert; Ibsen forms the theme of an essay by E. de Bom; D. Slecckx, writing with as much vigor as ever at the age of seventy-five, is the biographer of Guillen de Castro; while Pol de Mont has performed a like service for Peter Benoit, the head of the Flemish school of music. N. de Pauw has published some queer mediæval verse, and F. Van Veerdeghem a religious drama of the seventeenth century, "De Menschenwordingh." "De Boer der Schranse," by L. Smit, and Miss V. Loveling's "Eene Idylle," which, like some of her former works, has met with great success in Holland, are especially noteworthy new novels, while among the poetical works of the year the "Verzamelde Gedichten" of the late L. Kettman (Floris van Westervoort) and "Dichtoefeningen" of Abbé Guido Gezelle, "chief of the particularist school in West Flanders," deserve commendation. The young element finds expression for its revolutionary tendencies in its journal, "Van Nu en Straks."

**Bohemia.**—Literature in this country has again been given an impetus by a national quasi-literary festivity—the three hundredth anniversary of the birth of J. A. Comenius—which called forth a swarm of papers and essays. The historical works to be recorded are generally national in character: J. L. Pie's important "Archæological Investigations in Central Bohemia," T. Bílek's "History of the Confiscations" (after the battle on the White Mountain), Z. Winter's "Pictures of Bohemian Towns," Zibrt's "History of the Costumes of Bohemia," Lubor Niederle's "Man in Prehistoric Times," etc. Several books bearing upon the fine arts have appeared, notably Mádl's "Manual of the History of Art," Branis's "History of Mediæval Art," and costly publications such as Koula's "Selection of Bohemian National Embroidery from Náprstek's Bohemian Industrial Museum," "Collection of Designs from the Retrospective Jubilee Exhibition, 1891," arranged by Chytil, and Zeyer's "Barok a Rokoko," reproductions of prominent buildings in Prague. Jaroslav Vlček has brought out his "History of Bohemian Literature," the first thorough work of its kind issued since the publication of Jos. Dobrský's book in German. It has given rise to much controversy, winning praise in some quarters, while in others the author was reproached with want of national feeling, in which matter his countrymen are probably rather quick to take umbrage. Jaroslav Vrchlický and Svatopluk Čech, the two most prominent writers in the country, have celebrated their jubilee. While Čech has been active only as a journalist, the prolific Vrchlický has again added several volumes to the amazingly large number of poems, dramas, novels, stories, literary studies, and translations which form the fruit of his literary labors thus far. His newest works include "Moje Sonata" (poems), "Thistles from Parnassus" (sequel to "Breviary of Modern Man"), in which meditation and satire are mingled, "Life and Death," "Three Kisses" (a comedy long unpublished), and "Studies and Portraits," critical essays treating mainly of authors and artists in western Europe. Among the novels of the year are works by Václav Vlček ("Captain Halaburd," "The Black Lake"), Renatus, F. Schulz ("Modern Novels"), Konrad, Albieri, and S. Heller ("Romance of the Sea" and "Red Court"), all adherents of the older school in prose fiction. The new school shows the usual revolt of the younger element against conventional views, the striving for novelty and more truth to life, which finds expression more particularly in the short story, often successful, but not always mature and finished enough. This movement toward realism seems to be very widespread, and the growth of interest in the life of the people is no doubt due largely to the intensely patriotic national feeling of the Bohemians. Further fermenting influences are found also in the agitation among the university students and in the polemic between the literary world and the well-organized Roman Catholic press. The productions of the younger writers of fiction are concerned mostly with the life of their countrymen. Thus Klostermann, in his "From the Paradise of the Bohemian Forest," Capek, in "Tales," and Rais, in "Bittersweet," "Mountain Herbs," and "Family Chronicle," describe Bohemian country folk successfully, while Hladík and Auredníček are rather conventional in their novels dealing with fashionable life in Prague. The humbler classes in the capital are, however, well hit off in "Merry Prague People," by Hermann, and "From the Memoirs of Korinek, Student of Philology," a pseudonymous work, while "Three Ways," "Small Stories," and "Without Bread," novelettes by Herites, are concerned with life in the smaller towns. Herben, in his "To the Third and Fourth Generation," and Mrstík, in "Good Souls" (short sketches), have chosen the Moravian village as their scene of action, while Polish matters form the theme of "Butterfly from a Norwegian Fairy Tale" and "Sketches of the Last Polish Insurrection," both by Jelínek. Much interest has been aroused also by the "Twilight Talks of the Literary Society Máj." There is no dearth of



poetry, nor any abundance of good verse. A note of melancholy predominates in Muzik's delicate "Hymns and Sighs" and "Black Pearls," as also in "Third Book of Lyrics" by Machar, who, despite an occasional want of finish in style, is the most original and individual among the younger poets, for whose storm-and-stress yearnings he finds most apt expression. Other poetical productions of note are Sládek's strongly patriotic "Bohemian Songs," Borecký's "Rosa Mystica" (symbolical poems), the fourth part of Julius Zeyer's "Annals of Love," and a volume of pieces on country life by Sova. Kaminský, Cerviuka, Klásterský, and Procházka have also published new poetry. F. X. Svoboda's "Rozklad," dealing with the enervating and ruining influence of city life on a farmer's family, is named as the only piece produced which rises somewhat above the conventionality which seems to dominate the drama at present.

**Denmark.**—If literary activity in this country during the past year or two has not produced any epoch-making masterpieces, nor introduced any new writer of striking talent, yet the general result is good, and up to the average.

The important works of Galschiøft, Barfod, Bricka, P. Hansen ("Den Danske Skueplads"), mentioned last year, have been continued, as have also Carl Brunn's "History of Copenhagen," I. L. Heiberg's "Et Liv gjenoplevet i Erindringen," and "Den Dansk-Tydske Krig, 1864; udgivet af Generalstaben." C. Bruun and C. P. Fenger have issued "Thorvaldsen's Musæums Historie"; Miss Anna Hude, "Danehoffet og dets Plads i Danmarks Stasforfatning"; V. Bergsøe, "Danske Medailler"; J. Larsen, "Bidrag til den danske Folkeskoles Historie, 1784-1818"; and F. Buhl, "Det israelitiske Folks Historie." C. V. Bruun has prepared "Bibliotheca Danica . . . 1482-1830," and a fine illustrated encyclopædia is in course of preparation. "Hauksbók . . ." (1892) is the first complete edition of this great codex.

Among books of travel is one by Dr. Kaarsberg, on the Kalmucks, which shows that the flesh is heir to the same diseases among these tribes as under the "degenerating influence" of civilization. Georg Brandes has issued a selection from his essays, under the title "Menschen und Werke," in German. C. Kalisch's "Studier over Tennyson," Otto Jespersen's study on Chaucer, and a compilation on Browning by Dr. Stefansson (of Iceland) remind us of the influence of England in Danish literature. Karl Gjellerup, Valdemar Vedel, Niels Möller, Prof. Höffding, Johannes Jørgensen, and others, show a thorough knowledge of the modes of thought and the style of English writers. Shelley's centenary was celebrated by papers in various periodicals, and Adolf Hansen issued a translation of "Prometheus Unbound." Translations of Carlyle's "Past and Present," and of less important English books, serve to emphasize the recurrence of the English influence felt here so strongly toward the end of the eighteenth century. However, the French spirit is still much in evidence. Gallic symbolism has its admirers in the younger element, and Baudelaire and Maeterlinck both find favorable reception, as does also Ibsen—as yet. There is here, as nearly everywhere else, a healthy desire for novelty, and for a reaction from ultra-realism, with its not always pleasing nor clean incursions into the domains of pathology and psychology. Among the newest additions to *belles-lettres* are J. Paludan-Müller's "Idyller fra det daglige Liv" (1892); S. Michaëlis's "Vanemennesker" (1892); "Paa naert Hold" (1892), by J. Hilditch; "Troid: ny Samling" (1892), by J. Lie; K. Bøcker's "Søskende"; K. Larsen's "Cirkler"; K. Gjellerup's "Wuthoru" and "Ti Kroner og andre Fortællinger"; J. Schjørring's "Skiftende Tider"; H. Winther's "Herregaard og Præstegaard"; "Svend Dyrings Hus," by H. Hertz; Z. Nielsen's "Kulsviere: en Kærlighedshistorie"; C. Winther's "Til Een"; C. Møller's "Vore Husdyr: humoristiske Smaahistoriker."

**France.**—There is no end to the publications dealing with national history, and more especially the Revo-

lution. A newly formed society is devoted to the study of the latter period, to which the Faculty of Letters at Paris has devoted a special chair. Of the mass of new books on that eventful period the most remarkable are: "Le Culte de la Raison et le Culte de l'Être Suprême (1793-94)," by Aulard; Albert Sorel's "L'Europe et la Révolution"; Vol. VIII of A. Chiquet's "Les Guerres de la Révolution"; Charles Gomel's "Les Causes financières de la Révolution française: les derniers Contrôleurs généraux." Pierre de Nolhac, who unites learning with a graceful and easy style, has written a somewhat vindicating monograph on Marie Antoinette; H. Houssaye pictures France in "1814" and "1815"; and Paul Thureau-Dangin has finished his large "Histoire de la Monarchie de Juillet" (7 vols.), which has given rise to much controversy on account of its partiality to Orleanist principles. The same epoch is covered by the "Souvenirs de Alexis de Tocqueville, publiés par le Comte de Tocqueville," written in 1850, and giving a truthful picture of the men and events of the time of Louis Philippe. More recent times are dealt with in A. Verly's "Général Boulanger et la Conspiration monarchique," and three volumes on the Panama Canal affair—J. L. Forain's "Les Temps difficiles," Léon Durocher's "Perceement de l'isthme de Corinthe" (a mild satire), and A. Lucas's "Précis historique de l'Affaire du Panama." Ernest Lavisse, always bent on illustrating the origin and cause of the power of Germany, has brought out "Jeunesse de Frédéric II" and "Le grand Frédéric avant l'Avènement," and a "Histoire Générale du IV<sup>e</sup> Siècle à nos Jours" has been begun under the direction of E. Lavisse and A. Rambaud. In the field of political biography and memoirs some interesting new books are also to be recorded. "Mes Souvenirs sur Napoléon, par le Cte. Chaptal." Arthur Lévy's "Napoleon intime," F. Masson's "Napoléon et les Femmes," (Vol. I), and the "Mémoires" of Gen. Thiébault, Chancellor Pasquier, and Gen. Bigarré, relate to the Napoleonic era, now so popular a topic. Henri Welschinger's "Le Maréchal Ney, 1815"; Vol. I of "Histoire du Cardinal Richelieu," by Gabriel Hanotaux; "Études sociales et politiques: les dernières Années de La Fayette, 1792-1834," by A. Bardoux; Spuller's work on Lamennais; H. Buchard's "L'Amiral Cloué: sa vie"; Marie Dronsart's "W. E. Gladstone"; "Mémoires du Baron Haussmann" (3 vols.); and Vol. I of "Discours et Opinions" of Jules Ferry, have also appeared. Colonies and colonization form the topic of Burdeau's "L'Algérie en 1891," Chaillay-Bert's "La Colonisation de l'Indo-Chine," M. A. Legrand's "Au Pays des Canaques: la nouvelle Calédonie . . . en 1890," and H. Coudreau's "Ches nos Indiens: quatre Années dans la Guyane française (1887-91)." Other works in that broad division, voyages and travels, are Barbier's "Voyage au Pays des Dollars" (the United States, of course) and G. Sauvin's "Autour de Chicago." Finally, there are Charles Lenthéric's "Le Rhône" (2 vols.), important for its description of the part played by the river in the formation of France; Robida's "La vieille France: Provence"; P. Strauss's "Paris ignoré" (1892); and Louis Paulian's "Paris qui mendie." Interesting works on political and social science have seen the light. The relations between Church and state form the theme of two books—Charles Benoist's "L'Église et l'État" and Anatole Leroy-Beaulieu's "La Papauté, l'Église, et la Démocratie." L. Grégoire's "Le Pape, les Catholiques et la Question sociale," and "L'Église Catholique et la Liberté aux États-Unis," by DeMeaux, follow out kindred lines. The third volume of Levasseur's important "La Population française" has appeared, and Ferdinand Dreyfus has written a timely study of "L'Arbitrage international." Purely philosophic books, not illustrating some question of political or social economy, appear to be rare. Dervaulx has carefully summed up the "Philosophie de Condillac," and Daniel Bourchenin the history of "Pessimisme dans la Société et dans les Lettres françaises contemporaines." A. E. Chaignet has completed his



"Histoire de la Psychologie des Grecs" (5 vols.); and Raoul Allier's "Les Défaillances de la Volonté au Temps présent," and Thamin's "Education et Positivisme" (proposing that education be governed by idealism and religion instead of materialism) are also worthy of note. The appearance of two new reviews in this field is to be noted: "Revue de Sociologie" and "Revue de Métaphysique et de Morale." In the department of religion and ecclesiastical history one naturally thinks first of the late Renan's "Histoire du Peuple d'Israël," Vols. IV and V). Molinari's "Religion" maintains that religious feeling is natural to humanity, developing best under a free government; Ch. Letourneau's "L'Évolution religieuse dans les diverses Races humaines" traces the various religions to the same underlying principle; Louis Figuier's "Bonheurs d'Outre-Tombe" and Bourdeau's "Problème de la Mort" are contributions to eschatology, the first favorable to the doctrine of immortality, the other combating it. P. Allard traces the "Histoire des Persécutions du 1<sup>er</sup> au IV<sup>e</sup> Siècle" in five volumes. Mommsen and Marquardt's "Handbuch der römischen Alterthümer" is being translated, various French specialists being intrusted with the separate parts of the work. In the domain of fine arts we have A. Gazier's "Philippe et Jean Baptiste de Champagne" and S. Rocheblave's "Les Cochin" (both in the indeterminate series "Artistes Célèbres"); E. Fazy's "Louis II et Richard Wagner"; A. Pellissier's "Les Chefs-d'œuvre de l'Art moderne . . ."; H. Lemonnier's "Études d'Art et d'Histoire: l'Art français au Temps de Richelieu et de Mazarin"; A. Ernst's "L'Art de Richard Wagner: l'Œuvre poétique"; G. I. L. E. Larroumet's "Meissonier." Edmond de Goncourt tells the story of a famous dancer in "La Guimard" ("Les Aétrices du XVIII<sup>e</sup> Siècle"). The literature of bookbinding has received a very important addition in Ernest Thoinan's "Les Relieurs français, 1500-1800," and Octave Uzanne, in his "Bouquineurs et Bouquinistes," tells of book-hunting on the quays of Paris. Several interesting works dealing with literary history and criticism have appeared, one of the most remarkable being the volume of essays upon the drama in France, by Ferdinand Brunetière, editor of the "Revue des deux Mondes," and probably the most prominent exponent of purely objective criticism. The Vicomte de Vogüé, in his "Regards historiques et littéraires" (1892) and "Heures d'Histoire," as in earlier works, strives to get at the hidden significance of thought and action of the present day, and to infer the tendencies of the next generation; Barbey d'Aurevilly's "Les Œuvres et les Hommes" treats of noted "Mémoires"; René Doumic's "De Scribe à Ibsen" illustrates the evolution of the drama; the late Édouard Goumy's unfinished "Les Latins" accentuates the value of the Latin classics in education; and Louis Leger's "La Littérature russe" (1892) is especially valuable as regards the literature of past centuries. A. David-Sauvageot's "Le Réalisme et le Naturalisme dans la Littérature et dans l'Art" (1892); P. Ginisty's "L'Année littéraire 1892"; E. Tissot's "Drame norvégien: Henri Ibsen, Bjørnstjerne Bjørnson"; "Un Homme de Lettres sous l'Empire et la Restauration" (diary of Edmond Gérard); E. Montégut's "Esquisses littéraires"; P. Morillot's "Le Roman en France depuis 1610"; Joseph Bédier's "Les Fabliaux"; H. Dietz's "Les Littératures étrangères" (Vols. I and II: Italy, Spain); and "Anthologie des Poètes français du XIX<sup>e</sup> Siècle," are also of interest. Furthermore, Jules Lemaitre's "Impressions du Théâtre," Albert Soubies's "Le Théâtre en France, 1871-92," J. J. Weiss's "A propos de Théâtre," Gustave Larroumet's "Études de Littérature et d'Art," Paul Stapfer's "Des Réputations littéraires," Georges Pellissier's "Essais de Littérature contemporaine," deal mostly with the literature of to-day. Monographs on Alfred de Musset, by Mme. Viucens (Arvède Barine), throwing new light on his relations with George Sand; Lesage, by Eugène Lintilhac; J. J. Rousseau (whose biography Henri Beaudouin issued in 1892), by Arthur Chuquet (an able piece of work); Descartes, by

A. Fouillée; Rabelais, by Reuë Millet; Chateaubriand, by De Lescuré; Hugo, by Léopold Mabilleau—all seven in the series "Grands Écrivains Français"—of Thomas Corneille (striving to show him as unfairly overshadowed by Pierre), by G. Reynier; Hugo, by Ch. Renouvier; Lamartine, by Emile Deschanel, have appeared. Another new periodical is to be recorded, "Le Livre et l'Image," "a monthly documentary illustrated review," edited by John Grand-Carteret, who in 1892 issued the profusely illustrated volume, "XIX<sup>e</sup> Siècle."

In the domain of *belles-lettres*, the question of the character of the French literature of to-day becomes a somewhat vexed one. It is in a state of transition. The positivism of Hippolyte Adolphe Taine (Vol. VI of whose "Origines de la France Contemporaine" has appeared), the neo-mysticism of Melchior de Vogüé and Paul Desjardins, the materialism or realism of Zola, the psychology of Paul Bourget, Paul Margueritte, and Marcel Prévost, the classic beauty of the poetry of Leconte de Lisle and José Maria de Hérédia, a native of Cuba, and the most recent efforts of the "symbolists" (rather contemptuous of grammatical rules), all find their devotees in the ranks of "young France." As one critic says, there are two main currents in contemporary French literature, the scientific and the imaginative; which will preponderate is as yet an unsettled question. It seems, however, that subjectivism is beginning to gain on objectivism; that the *littérateurs* of France are governed more generally by a desire to probe the serious questions of the hour, to preach what one writer has called "*le devoir présent et l'action morale*"—in a word, that literature is regaining a more ethical character. The following works may be said to specially illustrate various of these conflicting movements in French literature: Jules Lemaitre's "Les Rois," one of those visions of the future now so much in vogue, and dealing with the fate of monarchy in the face of the rapid progress of democracy; Paul Bourget's "Cosmopolis," which may be accepted as a reaction against the naturalism of Zola and others; and "L'Automne d'une Femme," by Marcel Prévost, a refined realist, whose latest work deals with the rivalry between a young woman and one of maturer age, both enamored of the same man, and the moral aim of which, we are told, is to show "that love is wrong when it has no other end than itself," are all three especially noteworthy books. Paul Margueritte, originally a disciple of Zola, whom he deserted some years ago, has issued "La Mouche" (short stories), and J. H. Rosny, "one of the most brilliant writers of the new French school of fiction," has in his latest work shown a tendency to desert "Zolaism" for idealism. In fact, there seems to be no new work of note which shows any affinity with the spirit and method of Zola, whose "Le Docteur Pascal" ends the long history of the Rougon-Macquart family, to which he devoted nearly twenty-five years of his life. Anatole France, graceful, skeptical, witty, has published "L'Étui de Nacre" (a collection of tales, 1892), "Les Désirs de Jean Servien," and "La Rôtisserie de la Reine Pédauque," in which he is as fantastical, thoughtful, and ironical as ever, and François Coppée has brought out a collection of short stories under the title "Longues et Brèves," and a volume of papers, "Mon Franc Parler."

From the mass of fiction published during the year we may select also Jean Carol's "Le Portrait" (short stories), J. Barbey d'Aurevilly's "Le Chevalier des Touches," A. Houssaye's "Le Roman de la Duchesse," Jane Dieulafoy's "Rose d'Irati," A. Silvestre's "Floréal," L. Roger-Milès's "Nos Femmes et nos Enfants . . .," C. Mendès's "Nouveaux Contes de Jadis," J. Richepin's "L'Aimé," E. Daudet's "Made-moiselle de Circé," Pierre Loti's "Matelot" and "L'Exilée," Édouard Rod's "Vic privée de Michel Teissier," and "Tante Joujou," by "Gyp" (Comtesse de Janville). Hector Malot's "Complices," and two works by promising newcomers—Jean Madeline's "Contes sur Porcelaine" and Masson-Forestier's



"Pour une Signature" (six short stories)—are stragglers from 1892. A notable book in the field of poetry is "Les Trophées," by José Maria de Hérédia, long known as a writer of impeccable and beautiful verse. The entire edition of this, his first volume, we are told, was sold on the day of publication. Other works, marked more or less by similar characteristics—purity of style and beauty of language, absence of the ethical or the philosophical element, suppression of the *ego*—are Ferdinand Hérold's "Chevaleries Sentimentales," Maurice du Plessys's "Livre Pastoral," Henri de Regnier's "Tel qu'on Songe," and "Adolphe Retté's "Thulé des Brumes." The poetry of Jean Rameau ("Nature"), Maurice Rollinat ("La Nature"), André Lemoyne ("Fleurs du Soir"), has also won approbation. New plays produced or published include Georges Lecomte's "Mirages"; Paul Hervieu's comedy "Les Paroles Restent" (1892), a brilliant success; Ernest Daudet's "Un Drame Parisien" (1892), not too tenderly treated by the critics; Guy de Maupassant's "La Paix du Ménage"; François de Curel's "Envers d'une Sainte," "Les Fossiles," "L'Invitée," and "Amour Brode" (which met with instantaneous public approval despite simplicity of method and severity of thought and style); Henri Amic's "Une Vengeance"; Maurice Vaucaille's "Valet de Cœur"; Georges Courteline's first play, "Boubouroche," a decided "hit"; the "Drames Sacrés" of Armand Silvestre and Eugène Morand (depicting incidents from the New Testament represented in the surroundings of the fourteenth and fifteenth centuries); and E. de Goncourt's satirical farce, "À bas le Progrès," with a preface directed against the influence of Ibsen and of Russian literature. Sardou and Moreau manufactured "Madame Sans-Gêne," and Lemaître's "Les Rois" was described as a weak production.

**Germany** (including Austria and, in part, Switzerland).—An increase of popular histories in this land of thoroughness is to be noted. German matters form the theme of Fr. G. Schultheiss's "Geschichte des deutschen Nationalgefühls" (Vol. I), W. Bippen's "Geschichte der Stadt Bremen" (Vol. I), and L. Geiger's "Berlin, 1688-1840" (Vol. I, 1892). Hans Blum's "Das Deutsche Reich zur Zeit Bismarck's" and "Aus Bismarck's politischem Briefwechsel" (1892) are among the works relating to the ex-Chancellor, whose "Politische Briefe" (4. Sammlung, 1892), correspondence with Gen. Leopold von Gerlach (1851-'62), and "Politische Reden" have likewise been published, as have also the "Reden" (1883-'93) of his successor, Caprivi. Some interesting biographies and "memoirs" have seen the light, among which are Alfred Arneht's "Aus meinem Leben," Hs. Barth's "Crispi," Erich Marcks's "Gaspard von Coligny," the "Tagebücher" of the late Theodor von Bernhardt, interesting in their bearing on the Russo-Turkish war, the veteran Austrian diplomatist Count Alexander Huebner's account of the "most momentous year of his life" (i.e., 1848), and Wilhelm Oechelhäuser's "Erinnerungen aus den Jahren 1848-'50," in which we are told the story of France's refusal, during the Industrial Exhibition of 1849 at Paris, to recognize this envoy of the "German Empire." Vita Hassan has written "Die Wahrheit über Emin Pascha," and the question and history of colonization is producing many books here, as in France. The United States are viewed in various phases in Cl. Jannet and W. Kämpfe's "Die Vereinigten Staaten Nordamerika's in der Gegenwart," Ernst von Hesse-Wartegg's "Chicago" and "Curiosa aus der neuen Welt," W. Siever's "Amerika," and G. Diercks's "Kulturbilder aus den Vereinigten Staaten." General history is covered in Raymond's "Weltgeschichte" (two volumes); and Max Ohnefalsch-Richter's "Kypros: die Bibel und Homer," J. Gst. Droysen's "Kleine Schriften zur alten Geschichte" (Vol. I), and "Die attischen Grabreliefs," issued by the Vienna Academy, are contributions to archaeology and ancient history. In theology and philosophy we have Eduard Reuss's "Das alte Testament übersetzt, eingeleitet und erläutert" (posthumous, 1892);

Paul de Lagarde's "Septuaginta-Studien"; F. Spitta's "Zur Geschichte und Literatur des Urchristentums" (Vol. I); W. Preger's "Geschichte der deutschen Mystik im Mittelalter" (Part III, 1892); and H. K. Hg. Delff's "Philosophie des Gemüths." The neglect of method first introduced by Schopenhauer (whose letters have been published by Ludwig Schemann) reached its climax, we are told, in Nietzsche (Vol. IV of whose "Also sprach Zarathustra" has appeared), who "preaches the return to a condition of nature," maintaining that true morality consists in being above the difference between good and evil, attaining his ideal of humanity, the "Übermensch." It is worthy of note that the French "Symbolists" are said to be enthusiastic admirers of Nietzsche. Boguslawski defends warfare in his "Der Krieg in seiner wahren Bedeutung für Staat und Volk," while the directly opposite tendency has occasioned the founding of a new review by Baroness Bertha von Suttner, bearing the same title as her novel, "Die Waffen nieder." G. W. F. Hegel's "Kritik der Verfassung Deutschlands" has been edited from the author's manuscript by G. Mollat; L. Bucher's "Kleine Schriften politischen Inhalts," and J. Kohler's "Kulturrechte des alten Amerika. I: Das Recht der Azteken" (1892) have appeared; and E. von Bertouch's "Vorschläge zur Lösung der Arbeiterfrage"; K. Bücher's "Entstehung der Volkswirtschaft"; Eug. Jäger's "Die Agrarfrage der Gegenwart"; F. C. Huber's "Geschichtliche Entwicklung des modernen Verkehrs"; O. Henne am Rhyn's "Gebrechen und Sünden der Sittenpolizei aller Zeiten . . ."; Rdf. von Gneist's "Die Militärvorlage von 1892 und der preussische Verfassungskonflikt von 1862-'66"; Adf. Bastian's "Wie das Volk denkt"; L. Felix's "Kritik des Socialismus"; Jul. Wolf's "Verstaatlichung der Silberproduktion und andere Vorschläge zur Währungsfrage"; and H. Wiermann's "Deutsche Politik seit Bismarck's Entlassung, 1890-'92" are further publications in the field of political and social science, and a new monthly, "Die Frau" (Berlin), is devoted to womanhood. The letters of Ferdinand Lassalle, written 1862-'64 to Hans von Bülow, have also been published. "Die deutschen Universitäten: für die Weltausstellung in Chicago, 1893; . . . hrsg. von W. Lexis" (two volumes), has appeared. A work of importance to students of archaeology is "Ausgrabungen in Sendschirli" (*Königliche Museen zu Berlin: Mittheilungen aus den Orientalischen Sammlungen*). The subject of fine arts in general has been contributed to by Reh. Muther in his timely and valuable "Geschichte der Malerei im 19. Jahrhundert"; Brunn ("Griechische Kunstgeschichte"); Alois Riegl ("Grundlegungen zu einer Geschichte der Ornamentik"); P. Lehfeldt ("Bau- und Kunstdenkmäler Thüringens"); R. Bormann ("Bau- und Kunstdenkmäler von Berlin"); Paul Clemen ("Kunstdenkmäler der Rheinprovinz"); Philipp Spitta ("Zur Musik," essays); while Reh. Graul's "Fritz v. Uhde," La Mara's edition of Liszt's letters (two volumes), Bierbaum's "Fritz von Uhde," and Otto Brahm's "Karl Stauffer-Bern" (a talented Swiss etcher) illustrate individual efforts in the broad domain of the fine arts. The history of literature is still receiving fresh contributions relating to Goethe and Grillparzer. In the "Jahrbuch der Goethe-Gesellschaft" a number of Goethe's letters to Christiane are published, throwing much light on the relations between the two; while H. Düntzer, in "Friederike von lesenheim im Lichte der Wahrheit," has vindicated another one of Goethe's loves, Friederike Brion, from charges made against her. In the yearbook of the Grillparzer Society, on the other hand, portions of Grillparzer's "Tagebuchblätter" afford an insight into the strange self-doubt, the misanthropy that agitated that unhappy poet's soul. This yearbook has also now begun to enter upon its more extended programme—the study of Grillparzer's time, of a century of German-Austrian literary life, a subject which Adam Müller-Guttenbrunn has treated in his interesting "Im Jahrhundert Grillparzer's." The triennial prize founded by Grill-



parzer under severely critical conditions could not be awarded this time, the jury failing to agree upon the choice of any dramatic work coming up to his high standard. Robert Hamerling (to whose memory a monument has been erected at Waidhofen) has been held up as a pattern of education by A. Brückner, as were Rembrandt and Moltke in the preceding year. Adolf Wilbrandt has undertaken to issue a selection from the works of the once so well-known Georg Christoph Lichtenberg, and Gottfried Böhm has written "Ludwig Wekhrlin (1789-192): ein Publizistenleben des 18. Jahrhunderts." Fritz Jonas's edition of Schiller's letters; K. Lorenz's "Der Anteil Mecklenburgs an der deutschen Nationalliteratur bis zum Ende des XVII. Jahrhunderts"; several volumes on Gottfried Keller; P. K. Rosegger's "Gute Kameraden: Persönliche Erinnerungen an berühmte und beliebte Zeitgenossen"; and "Das junge Deutschland," by Johannes Prölss (1892; valuable, but style not commended), are further contributions to the history of literature in Germany, while other countries are dealt with in Richard Loening's "Die Hamlet-Tragödie Shakespeare's," an interesting and excellent monograph; "Shakespeare: fünf Vorlesungen aus dem Nachlass von Bernhard Ten Brink"; Ph. Aug. Becker's "Jean Lemaire, der erste humanistische Dichter Frankreichs"; and Max Kaluza's "Chaucer und der Rosenroman."

The novel in Germany has ever been a favorite medium for propagation of reform ideas, and thus Paul Heyse, in "Merlin," battles sturdily against the naturalistic tendencies of the day. But the new movement will no doubt run its course. The organ of the "Moderns," by the way, is the "Gesellschaft" (Munich). Frau Marie von Ebner-Eschenbach ("Gesammelte Schriften," 6 vols.) is occupied with a religious problem in "Glaubenslos." Karl Frenzel has published "Frauenrecht," and "Und Bebel sprach" is a spirited antisocialistic production. Egypt forms once more the theme for Ebers in "Per Aspera" and "Kleopatra"; Paul Heyse (who has published also "Das Marienkind"), in his "Aus den Vorbergen," tells some charming stories of peasant life in the Bavarian Alps; while the scene of L. Ganghofer's "Der Klosterjäger" is laid in the Austrian highlands. To such idyls of rural life should be added also August Silberstein's "Dorfmusik" and Josef Wichner's "Im Schneckenhäus," both dealing with Austria. Urban life, on the other hand, is pictured forth in A. Niemann's "Voll Dampf voraus," Theophil Zolling's "Coulissegeister," minutely true to nature, and Luise von Bunsen's "Gegen den Strom," all three portraying phases of life in Berlin, and C. Karlweiss's "Ein Sohn seiner Zeit," touching on the varieties of existence in the Austrian capital. Finally, of novels we have Hans Hoffmann's patriotic "Landsturm," dealing with the *Freiheitskriege* against Napoleon I, Heinz Tovote's "Das Ende vom Liede," and Felix Dahn's three-volume "Julian der Abtrünnige." Josef Joachim, the author of peasant stories like "Der Sonnenhaldenbauer," seems destined to take high rank among Swiss authors, while J. J. David has further proved his talent in a volume of stories, "Probleme." In the domain of the short story might be mentioned also the following collections: H. Tovote's "Heimliche Liebe," H. Heiberg's "Am Kamin," and E. von Wolzogen's "Das gute Krokodil." In the realm of poetry we find the division between idealists and naturalists sharply defined by the existence of a special organ for each—the "Musen-Almanach" of the older generation, and the "Moderne Musen-Almanach" of the younger men. Julius Rodenberg, Felix Dahn, Rudolf Gottschall, and Otto Roquette are among the recent contributors to the former, while the latter numbers among its writers Johannes Schlaf, Detlef von Liliencron, Arnold Holz, Otto Julius Bierbaum, and Carl Busse. It appears, however, that the "naturalism" of these "moderns" is often artificial, strained, and mannered, only a few, like Evers, striking a true note. The collected works of Eduard Paulus and the newest poems of Wilhelm

Jordan have both been praised for the freshness and youthful enthusiasm of these two literary veterans. "Jueunda Juventus" is a volume of humorous poetry by Ernst Eckstein. Hans Hoffmann, the novelist, has published "Seitab vom Wege," poetical impressions of Athens's ruins, while Ferdinand von Saar glorifies a modern city in his "Wiener Elegien," classic in their finish. Marie Eugénie delle Grazie shows enthusiasm for beauty and a well-rounded style in her "Römische Vignetten" and "Aus Neapel." The play of the year which has probably made the greatest stir is Gerard Hauptmann's revolutionary drama "Die Weber," performed in Berlin and in Paris with an unequivocal and tremendous success. Lacking unity of action, a plot, or a hero, it depicts the revolt of the Silesian linen weavers during the reign of Frederick William IV of Prussia, a tragedy of hunger and despair. In his comedy "Der Biberpelz" he draws an unlovely picture of a suburb of Berlin, while his "Hannele," presenting the dream of a delirious half-drowned pauper girl, has been described as a weird combination of ultranaturalism and fantastic symbolism. Sudermann has also had a most decided success with his "Die Heimath," which deals with the conflict between an honest retired colonel and his erring daughter, an actress, who places herself above the moral restrictions of social life. Richard Nordmann shows the influence of Sudermann's "Ehre" in his "Gefallene Engel." J. V. Widmann, in "Jenseits von Gut und Böse," combats the refusal to be bound by moral laws, the ultimate outcome of doctrines such as those preached by Nietzsche in his book of the same title, and his "Markenfest" also made a hit. Paul Lindau's "Der Andere" deals with a sort of "Jekyll and Hyde" problem, the dual-soul theory, while his "Der Komödiant" is a dramatization of the story of Molière's unfortunate married life. The newest drama from the pen of Richard Voss, "Daniel Danielo," has been praised for its powerful depiction of the conflict stirring the soul of a baptized Jew whose heart still clings to the old faith; his "Jürg Jenatsch" lacks balance and psychological justification. Paul Heyse does not appear to have made the most of a good subject in his "Jungfer Justine." Another one of the older writers, Adolf Wilbrandt, has written "Die glückliche Frau," "Der Meister von Palmyra," and "Bernhard Lenz," the latter two not very successful, it seems; and Gustav Moser a new four-act comedy, "Blaues Blut." And yet a few of the younger generation: Ludwig Fulda, whose "Der Talisman" is founded on a well-known fairy tale—the story of the king going naked among his people, the hypocritical courtiers admiring his beautiful garment the while, until a little child speaks the truth; Robert Misch ("Baronin Ruth"), Richard Skowronnek ("Palast-Revolution," a comedy, reminiscent of Bend Sin, but good in characterization); Erich Hartleben ("Hanna Jagert," comedy); Max Halbe, author of the social drama "Eisgang," whose "Jugend" is described as an idyl of love, ending sadly; and Franz Nissel, whose dramatic works have been issued in one volume. Reference may be made also to Julius Stinde's "Das Torfmoor," a clever satire against the Ibsen cult.

Greece.—Some of the most noteworthy among the historical works of the year are continuations, such as "History of Greece," by Spyr. Lambros (Vol. III); Vol. II of "History of the Athenians," by Kamburoglos; and "History of the Nineteenth Century," by P. Karolidis (Vol. III). To these should be added the "Works" of the late Anastasios Byzantios, dealing with recent political movements in Greece. D. Bikelas has published in Paris "La Grèce byzantine et moderne" (which essays originally appeared in the Greek newspapers, in which latter much that is good in the literature of this country seems to-day to find an outlet), and Tryphon Evangelides, "History of King Otho." Two noteworthy biographical works are Mark Renieris's monograph on "Metrophanes Kritopoulos" (once Patriarch of Jerusalem), and that of Mark Eugenius, Bishop of Ephesus, by Niceph-



orus Kalogeras. Alcibiades, son of John Sakellion, has finished the "Catalogue of the Manuscripts in the National Library at Athens," begun by his father, and Athanasius Papadopoulos Kerameus has published at St. Petersburg a volume of "Inedita," in Greek and Russian, "containing a biography of the holy sixty martyrs, unpublished speeches and letters of the Patriarch Photius," etc. Dionysius Thereianos is the author of a learned "Sketch of the Stoic Philosophy"; and Neocles Kasasis has brought out an "Encyclopædia and Methodology of Law" and a three-volume "Philosophy of Law and the State." The vexed question of language in the Greek literature of to-day, referred to last year, has been further discussed by G. Hatzidakis (in "The Question of Language") and E. Rhoidis, who proves himself a good philologist as well as a witty writer in his "Idola." The relative merits of the question have also been illustrated by the literary productions of the adherents of both sides. Thus, George Stratigis's "New Poems," a volume of elaborate and well-polished rhymes, is written in the "learned language"; while "The Eyes of my Soul," by Constantine Palamas, a thoughtful writer, with leanings toward mysticism, and "The Singer of the Village and the Fold," by Constantine Krystallis (who has a keen eye for phases of popular life), are both by writers who have worked ardently for the development of the popular idiom. Lastly, Karkavitsas has issued a half dozen of his excellent Neo-Hellenic tales in one volume, under the title "Diegemata."

**Holland.**—Last year there were a number of important additions to historical literature to record; now there comes a complaint of a dearth of such material. Among the productions of note are some devoted to Dutch history, more especially the history of individual towns. Thus, documents relating to Rotterdam have been collected by Unger, and a voluminous work on Dordrecht has been edited by Van Aelst. The Church of St. Jacob, in the Hague, forms the theme of Van den Brandeler, while Dr. van Meer has issued a work of importance on the Synod of Emden in 1571. Parliamentary history (1849-'88), with especial reference to taxation, is recited by Bok, and the history of Dutch jurisprudence has been told by Fockema Andraea. Works concerned with other lands include W. H. de Beaufort's "Geschiedkundige Opstellen" (1892, 2 vols.) and Pierson's "Hellas," (2 vols), the latter dealing with Greece's development in religion, art, and morals. S. H. and D. A. Junius have swelled the literature of a much-used topic in their "Zonnik Afrika" (1892). R. A. van Sandick's "Leed en Liefuit Bantam," besides dealing with the history of this Dutch possession, gives an interesting characterization of the noted author E. Douwes Dekker (Multatuli). "Bijdragen tot de Taal-, Land- en Volkenkunde van Nederlandsch-Indië," is in course of publication.

Political history and science have received additions in H. G. Hartman's "Het gemeentewezen in Nederland en België" (1892); F. J. L. Krämer's "De Nederlandsch-Spaansche Diplomatie voor den Vrede van Nijmegen" (1892); and J. Sickenga's "De Gemeente in Nederland"; and social science in H. van Kohl's (Rienzi) "Socialisme en Vrijheid"; J. Rochussen's "Na twintig Jaren: sociale quaestie en muntquaestie." In theology, we have a work on the chronology of the Bible, by Dr. Wildeboer; G. T. P. J. Bolland's "De Pentateuch naar zijne Wording onderzocht"; E. H. van Leeuwen's "Bijbelsehe Godgeleerdheid." To these we add J. Reitsmá's "Geschiedenis van de Hervorming en de hervormde Kerk der Nederlanden" and Prof. Van der Wyck's monograph on the late Dr. Opzoomer. The complaint respecting a decline in the study of literary history is borne out by a pamphlet in which Kalf points out the defects in the teaching of Dutch, the formation of taste through standard works being but little attended to. The *brochure* attracted much attention. C. Honigh has completed the late Dr. George Penon's selections from Dutch authors; Schaapman has begun to reprint his

able essays under the title "Menschen en Boeken"; and F. M. Jaeger has collected his literary studies in "Kunst en Leven," and has issued also a translation of Max Nordau's "Entartung," with his own criticisms on Dutch literary peculiarities, incurring the displeasure of the younger element, among whom he formerly enjoyed a decided popularity. Other new productions in literary history and criticism are E. de Bom's "Henrik Ibsen en zijn werk"; and W. J. A. Jonckbloet's "Geschiedenis der Nederlandsche Letterkunde."

Jan Ten Brink, that ardent opponent of the new literary movement, introduces eminent authors and other luminaries of a brilliant period in Dutch literary history in his "De Brederos." Social problems form the theme of Miss Cornelia Huygens's "Hoogenoord" (2 vols.), and Miss A. C. Van Meyendal's "Toch verzoend." "Aleida Ploggers," by Louise B. B., and "Een Hellevaart," by Vincent Lcosjes, have both won praise, as have also "Intimiteiten," an attractive work by Ebba, and Meerkerk's "Karakter," a promising though not faultless production. It has been said that the novelists of Holland find much of their material among the middle class of their countrymen and in the society of the Dutch East Indies. The latter portion of the globe is the scene of action of Pelerlaer's "Noordwest en Zuidoost" (describing the origin of the war with the Achinese); J. R. Jacobs's sketches of military life; "Ups and Downs," by P. A. Daum (a Batavian newspaper editor); "In de Koffie," stories about the coffee trade, by J. Dermout; and scenes from domestic life, by Therese Hoven. Clever writers of short stories are: N. G. L. van Loghem (Fiore della Neve), Mareellus Emants, W. C. Capel Florentijn ("Nordzeekinderen," 1892), Wemerus Buning, Jan Peereboom, Van Vlymen, and Mme. S. La Chapelle-Roobol ("De Schoonmama en een paar andere Novellen"). The new school—the Dutch phase of that latest movement in literature felt throughout the continent—has scored a brilliant success in Louis Couperus's "Eline Vere" (noted last year), which, it appears, found an imitation in Franz Netscher's "Egoïsme." Frederic van Eeden, on the other hand, is said to show the influence of the German Hoffmann in his "Kleine Johannes." Couperus has issued "Eene Illusie," and Van Eeden "Johannes Viator," which latter has been regarded as a very noteworthy achievement. Its obscurity appears to be characteristic of not a few of the younger writers, such as Jac. van Looy (noted for force of diction, and whose "Gekken" has been widely read) and J. Hora Adema, whose strong novel, "Thea," shows mystical tendencies. Fokko Bos does not seem to sustain his reputation for originality in his most recent work.

The complaint regarding occasional obscenity in the work of the younger men has been reiterated, the individual cases cited including three pseudonymous writers, two using the name of *Bram*, the third *Conrad Van der Liede*; the latter, since the publication of "Zijn vader," has changed, however, and really shows much promise. In poetry, Miss Helene Swarth (a resident of Belgium), noted for the beauty and tender sentiments in her sonnets, has, in her "Felicie" and "Poëzie," produced almost the only volumes of note issued during the twelvemonth. This field is but little cultivated at present. The concise statement of a certain Dutch author, "Literature does not pay in Holland," is amplified by a German critic. The Dutch, we are told, while regarding modern efforts in their own literature with cool reserve, always show a vivid sympathy for foreign productions, even those marked by the most daring innovations. Thus we find, in partial corroboration of this statement, that the theater in Holland depends much on adaptations from the Gernau, French, etc.—Taco de Beer, for instance, editing a translation of Lessing's "Nathan the Wise." G. C. Hoogewerf's interesting "Petrus Dathe-nus," in blank verse, would hardly do for production on the stage; "Asshepoes," a curtain-raiser, by a lady who veils her identity under the pen-name Jo



van Sloten, achieved a well-deserved success. "Het Kind" is a somewhat old-fashioned play by H. Th. Boelen; and H. Heyermans, Jr., is promising in his "Dora Kremer," which was coolly received. A German paper adds that Heyermans hereupon submitted a one-act play, "Ahasverus," as the work of one Ivan Jelakovich, and enjoyed a brilliant success under this assumed name.

**Hungary.**—There are a few noteworthy new historical works to be reported: Vol. XV of the "Monumenta Comitalia regni Transylvaniæ," published by the Academy of Sciences, Vol. III. of Miklós Szendrei's "History and Topography of the Town of Miskolcz," Theodor Ortway's "Geschichte der Stadt Pressburg" (1892), translated from the Hungarian by the author, and Vol. I of Geyza Kuun's "Relationum Hungarorum. . . ." Report comes of much activity in the study of national history, and of the publication of a series of ethnographic monographs of great interest, begun by the Hungarian Society of Geography. Of the Academy's "Magyar Students Abroad," Vol. II, "Students at the Vienna University," has been issued, as have also the first two volumes of Tivadar Ortway's monumental "Ecclesiastical Topography of Hungary in the Beginning of the Fourteenth Century." In the rubric "geography and travels" we have Prof. Havass's "Bibliotheca Geographica Hungarica" (a bibliography of geographical literature concerning Hungary), and Árpád Abonyi's "Pietures from Bosnia." Károly Széchy's "Life and Writings of Peter Vajda" and György Gracza's "Life and Work of Kosuth" are contributions to biographical literature. Prof. Földes's "Social Economy," written with special reference to Hungary, is described as the best work of its kind that has appeared in that country in recent years. Other publications in this field are Polza's "Communal Friendly Societies" and Mór Gelléri's "History of the Hungarian Industrial Association." Nor must that very important undertaking be forgotten, the "Great Pallas Lexicon," the Hungarian encyclopædia (more or less national, like Brockhaus in Germany, the Britannica in England, or Appletons' in the United States), to be complete in 16 volumes. We are told also that the Academy has awarded its grand prize to the Historical Dictionary of the Hungarian language (3 vols.), finished by Szarvas and Simonyi.

It is but natural that Hungary should have its school of realists and naturalists; we are told also that imitators of the "symbolists," the "décadents," are not wanting. In prose fiction we have, first of all, "Brother George," a historical romance in five volumes, by Maurus Jókai, that prolific literary veteran, the half century of whose activity has been celebrated during the year; a feature of this jubilee was the determination of the committee to issue an *édition de luxe* of his works, limited to 1,000 copies, at 200 gulden apiece, 100,000 gulden of the proceeds being destined for the famous author. Sigismund Justh, the popular novelist, has published "The Legend of Money," Robert Tábori takes us to the gaming table in his "High Stakes," and Ferencz Herczeg, an ex-cavalry officer, draws vigorous and characteristic pictures of life in Hungarian society in his "The Gyurkovics Girls," one of the best novels of the twelvemonth. Another very successful book is "True Stories," by Adolf Agai (Porzó), a thoroughly original writer and a talented humorist, author also of "On Water and Land." The late János Arany—to whom a bronze memorial was set up in Buda-Pesth—has in a measure, perhaps, found a successor in Andor Kozma, a writer of fine and melodious verse, and a popular contributor to the "Borsszem Janko" (Hungary's comic paper). His "The Duel" is described as a mordant satire against that barbarous practice. In speaking of the drama, mention should be made of Irene Hecht Csérhalmi's "Influence of French Romanticism on Hungarian Dramatic Literature." Árpád Bereczik is named as an excellent writer of "society comedies." Ferencz Herczeg's "The Dolova Nabob's Daughter," a comedy adapted from one of his

novelettes has met with success, as has also the drama "Resignation," by Vilmos Karczag, a writer well versed in the technique of dramaturgy.

From Vienna comes the report that a *bona-fide* peasant theater has been installed on the *puszta* of Sigismund v. Justh, and the efforts of the rural Thespians have met with much praise.

**Italy.**—In spite of what would appear to be discouraging political conditions, there is still an ardent devotion to letters in this country; the younger writers seem to have been especially active, and the interest in serious studies appears to be increasing. In the domain of history, the sixteenth century receives special attention, as does Dante in literary history. Francesco Nitti has issued an able and careful study of Leo X ("Leone Decimo e la sua Politica"), an old "Cronaca del Soggiorno di Carlo V in Italia" has been published by Prof. Romano, and Luigi Celli, in "Tasse e Rivoluzione," throws light upon the revolt of 1572-'73 in Urbino. Pasquale Villari has written "I primi due secoli della Storia di Firenze." The names of two distinguished historians of the eighteenth century appear in this year's list: Augusto Pierantoni has edited a posthumous paper by Pietro Giannone, "Il Tribunale della Monarchi di Sicilia," an erudite and important production, and Matteo Campori has published "Correspondenza fra L. A. Muratori e G. G. Leibniz" (important letters illustrating various periods of Italian history). The publication of "Carteggi Italiani inediti e rari" has been begun by Filippo Orlando, and "Il Santo Ufficio della Inquisizione in Napoli" (2 vols.), by Luigi Amabile, and studies on "The Martyrs of Free Thought and the Victims of the Holy Inquisition in the Sixteenth to the Eighteenth Centuries," etc., by Antonino Bertolotti, are both posthumous works by historians of note. Prince Lanza di Scalea, in "Donne e Gioielli in Sicilia nel Medio Evo," describes the life of womankind in the time of Italy's greatest luxury. A number of important monographs dealing with noted historical personages have seen the light. First and foremost, there is Pier Desiderio Pasolini's fascinating and scholarly "Caterina Sforza" (3 vols.); Attilio Centelli, in his "Caterina Cornaro e il suo Regno," tells the story of that queen of Cyprus; and a biography of "Adelaide di Savoia, Elettrice di Baviera" is by Carlo Merkel, a young historical student of repute. V. Bellio, M. A. Lazzaroni, and Ces. de Lollis have published books on Columbus. Tulliolli's "Le Reminiscenze di un Bersagliere" is a record of personal experience, 1848-'90.

In the rubric "description and travel" Caterina Pigorini Beri's "In Calabria"; A. Tanfani's "Il Paese delle Sterline" (depicting life in London); L. Salazar's "Montecarlo elegante"; G. Modrich's "La Russia" (which, by its partisan character, has aroused hostile feeling); A. Centelli's "L'Oriente d'oggi"; and "Da Napoli ad Amburgo," by Adolfo Rossi, are publications of interest. Arturo Graf's "Leggende e Superstizioni" is concerned with the mediæval belief in the supernatural world. Literary history, too, has been enriched by some works of interest. Recent Italian literature forms the theme of Giuseppe Robiati's "Il Romanzo in Italia," and E. A. Butti's "Nè Odi nè Amori," while the national literature of past ages is dealt with in "Cultura e Metrica Latina in Italia," by U. Ronca; G. A. Cesareo's reprint of the satires of Salvator Rosa, with some hitherto unpublished letters; "Lo Cunto de li Canti di G. B. Basile," edited by Benedetto Croce; Curzio Mazzi's work on Leone Allacci and the Vatican library; and Giosuè Carducci's "La Storia del Giorno di Giuseppe Parini." The industry of Dante students has again resulted in the publication of a number of volumes, and a new Dante journal ("Giornale Dantesco") has made its appearance in Venice, edited by G. L. Passerini. Phases of English literature are discussed in "Nel Presente e nel Passato" and "Segni dei Tempi" (both by Senator Negri), and by Prof. Rodriguez, whose essays on Tennyson, Cowper, and our own Longfellow have been well appreciated; Domenico Ciampoli's "Saggi Letterari" have to do with Russia; and Sigism.



Friedmann's "Il Drama Tedesco del nostro Secolo" (2 vols.), B. Zumbini's "Studi di Letterature Straniere," and Giulio Monti's "La Poesia del Dolore" (on the inspiration afforded by suffering) are also worthy of note.

An unusually large number of novels have seen the light, and they appear to show in general a marked improvement and less conventionality. Especially is this true of the work of the younger men, such as Giuseppe di Rossi ("Mal d'Amore"), Marco Praga, a successful young playwright ("La Biondina"), and Carlo Placci ("Un Furto"). Salvatore Farina's "Amore Bugiardo" is said to fall behind the previous efforts of this "Italian Dickens"; Paolo Liroy's bizarre "Spiriti del Pensiero" is described as a "ghastly story of life and death"; L. Giulio Mambriani's "A Bordo" is marked by delicate sentiment; while "I Lussuriosi," a naturalistic novel, the first work of Luciano Zuccoli, shows talent, but is characterized as "unclean and paradoxical." Geronimo Rovetta has published "Il Primo Amante"; Anton Giulio Barrili, a series of stories dealing with Columbus and his times; Matilde Serrao, a fantastic romance ("Castigo"); Anna Rading (Neera), "Senio" and "Nel Sogno"; Bruno Sperani (pseudonym of a lady), "Emma Walder"; and Alberto Cantoni, a skeptical humorist, "L'Altalena delle Antipatie." Ugo Valcarenghi's "Distruzione," an important product of naturalistic art, has attracted much attention, and various phases of military life form the theme of I. Trebla's "Volontario di un Anno," A. Olivieri Sangiacomo's "Fanti e Cuori," and G. Saragat's "In Caserma." The classical tendency in poetry, though it has evidently outlived the ultranaturalistic movement, seems to be itself on the wane, despite Carducci's championship of it and the graceful verses of Enrico Panzacchi. We are told that a note of sympathy with the oppressed runs through some of the newest lyric poetry. Giosuè Carducci, who arouses so much criticism, both favorable and adverse, has published "Il Cadere," noted as a lofty patriotic production; Napoleone Razetti's "Carmi e Odi Barbare" are said, on the whole, to show beauty of form and vigorous conception; Gabriele D'Annunzio's "Odi Navali" show signs of degeneracy into weakness and mannerism; while Sylvia Albertoni's "Versi" are said to be pervaded by a "melody, delicately fascinating." The silver wedding of the king and the queen as a source of poetic inspiration has resulted in a long string of uninteresting and indifferent verse. A third edition of Pope Leo XIII's Latin poems ("Carmina et Inscriptiones") has been announced. Critics are now taking a more hopeful view of dramatic art in this country; a salutary realism is said to mark recent work in this field. Camillo Antona-Traversi, whose "Le Rozeno" met with such success, has been at work upon a new play, "Danza Macabre"; his brother, Giannino Antona-Traversi, is the author of "La Mattina dopo" and "Dura Lex" (a plea in favor of divorce); the adultery of a physician's wife with a friend, one of his patients, forms the subject of two plays, G. M. Scalinger's "Il Dottor Müller" and Illica's "World of Thought," while F. Bernardini's "Il Cieco" deals with the unfaithfulness of a blind man's wife. The Goldoni festival of February, in Venice, developed into an imposing popular demonstration.

**Norway.**—Among the new works in the various fields of learning are the continuation of "Diplomatium Norvegicum . . . ; udgivne af C. R. Unger og H. J. Ilutfeldt-Kaas"; O. Skavlan, "Henrik Wergeland—Afhandler og Brudstykker—udgivet efter Forfatterens efterladte Papirer" (1892); J. B. Halvorsen's "Norsk Forfatter-Lexikon, 1814-'80" (continuation); "Den angelsaksiske Kirkes indflydelse paa den norske," by A. Taranger; A. C. Bang's "Dokumenter og Studier vedrørende den lutherske Katekismus' Historie i Nordens Kirker" (Vol. I), L. H. Åberg's "Filosofisk Sedelära" (2 vols.), and various volumes by F. Hagerup and others on legal topics. Henrik Jaeger has begun "Illustreret norsk literatur Historie." In *belles-lettres*, B. Lie's "I Eventyrland" (1892); T.

P. Krag's "Ensomme Mennesker. Lo og andre Fortællinger" (1892); H. E. Kinck's "Huldren" (1892); P. Egge's "En Skibsgut" (1892), are to be recorded. Toward the end of 1892 the "Nyt Tidskrift-nyraekke" appeared, a revivification of the little magazine "Nyt Tidskrift," which had run from 1882-'87; Sigurd, Ibsen, Björnson, J. E. Sars, and others are among its contributors. More interest and criticism than ever have been aroused by "Bygmester Solness," the new play by Henrik Ibsen, who appears to be the object of a veritable cult in London, where an Ibsen Society has been formed. In his latest production, it is said, his powers are at their height; if it is his most profoundly thoughtful play, it is also his most obscure one.

**Poland.**—Beginning with history, W. Boguslawski's "Annals of the Western Slavs," and "Monumenta Poloniae Historica," Vol. VI, are to be noted, as well as monographs by A. Pawinski ("Youth of Sigismund the Old"); A. Kraushar ("Life of Christopher Arciszewski," admiral of the Dutch in Brazil, 1592-1656, 2 vols.); and A. Lewicki ("Insurrection of Swidygello," a Lithuanian chief). I. K. Ożegalski has published "Reminiscences of bloody times in 1863," and K. Skirmunt and A. Czolowski have issued *brochures* on Lithuania and Eastern Galicia respectively. W. Spasowicz's collected writings, in six volumes, have appeared. St. I. Czarnowski has written on "Periodical Literature and its Development," and W. Rubożyński on the "Golden Age of Italian Art"; M. Strajanu is the author of "Principe de Estetica și Poetica"; F. Wiśniewski's subject is "Mind and Matter"; and I. Dabrowski makes a study of "Death"; most of these are short treatises.

In prose fiction there are a number of new publications to record, among them not a few of merit. "Lux in Tenebris Lucet" and "Do we follow Him?" (the crucifixion on Golgatha forming the principal incident) are by H. Sienkiewicz, translations of whose writings have been well received in the United States. B. Prus has issued "The Little Angelica" (in which tragedy and humor are happily combined); Mme. Orzeszko, "The Vestal"; T. T. Jez, "In the Dark" (a peasant story); Z. Kaczkowski, "The Zaklika" (a doleful picture of Polish nobility); Mme. Z. Kowerska, "The Little Rosalie"; Sewer, "In Shadow and Sunshine" (a story of rural life, marked by truth and feeling); Jeske-Choiński, "In Chains"; Ad. Krechowicki, "Veto" (4 vols.); W. Luskin, the artist, "The Great Year" (depicting the coming war); M. Gawalewicz, "The Fog"; Rawita, "Chareczy" (a historical novel dealing with the Cossack rebellion in Poland in the last century); Abgar-Sottan, "The Realm of the Czars" (a picture of Russian bureaucracy); Mme. Zapolska, "A Fragment of Life" (an excellent novelette); and another lady, under the pseudonym Zmogas, two stories, one dealing with Nihilism, the other with the Lithuanian rising of 1863. Two beginners have been quite successful—J. Dombrowski with "Death," a "psychopathological study," and Miss J. Szebek with "A Sisyphus Life." Among the short stories, sketches, and novelettes brought out during the year are publications by Ostoja, J. Lentowski, Mme. Konopnicka, the distinguished poet ("Na dredze"), A. Dygasinski, S. Graybner, Z. Niedzwiecki (a writer of decided talent, whose erotic tendencies have been objected to), Kosiakiewicz, who describes life in the smaller towns, and Miss Szczesna (Cybulska), whose prose sketches in "Passing Clouds" are quite poetical in feeling. Of poetry, K. Lewandowski's "Szella" and C. Jankowski's "A few Rhymes" have been well received, while Felicyan (Falenski), noted for his perfection of form, has broken his long silence by a volume of epigrams and satires entitled "Meandry," and a collection of "Translations from Foreign Poets."

There has been much activity among dramatists, which may be due in part to two competitions, held at Warsaw and Cracow. "The Woman Teacher," a prize play by Count W. Koziebrodski, deceased since then, though reminiscent of Dumas, is original in con-



ception. Zglinski's "Jakob Warka," Gawalewicz's "Old Debts" and "The Pearl," Jeske-Choiński's "Last Act," K. Zalewski's "The Rights of the Ilcirt," Baluck's "Flirt" and "Kilinski" (historical drama), two noteworthy first attempts in comedy by S. Graybner ("Fredzio" and "Count George"), and "The Weed," the last effort of J. Blizinski, whose recent death deprives Poland of one of her best writers of comedies, are among the successful plays of the year.

**Roumania.**—The publications of the year include: A. D. Xenopol's "Istoria Romanilor din Dacia-Traiană, Vol. VI: Istoria contemporană cu portretul autorului"; S. F. Marianu, "Inmormântarea la Români: Studii etnografice" and "Născerea la Români: Studii etnografice"; I. Lăzăriciu, "Istoria Literaturii Române"; G. D. Teodorescu, "Cronica din Nürnberg, 1493: Conferința publică ținută în adunarea Societății Geografice Române"; S. Popescu, "Căcihetica. Adică metodică specială Studiului Religiozității"; G. Mănușeanu, "Lumea de azi: Roman de aventuri"; A. Bacalbașa, "Moș Jeacă. Din cazarmă"; G. Cosbuc, "Balade și Idile"; and D. C. Olănescu, "Teatru." "Romänische Revue" (editor, St. N. Circu) and "Romänische Jahrbücher," both printed in German, have been in existence about ten years. The editor of the last-named one, W. Rudow, has published a "Geschichte des rumänischen Schrifttums" (Wernigerode, 1892), which has been adversely criticised, but is said to show most knowledge in the treatment of contemporary literature.

**Russia.**—There appear to have been comparatively few contributions to general or to non-Russian history. They include Karéev's popular "History of Modern Europe" (3 vols.), Pokrovski's "Study on the Athenian Constitution of Aristotle," and Prince Trubetskoy's work on the "*Weltanschauung* of St. Augustine." National history, however, has received much attention. Earlier periods of Russian history are dealt with in Sobestvanski's "National Peculiarities, Characteristics, and Legal Customs of the Ancient Slavs"; V. G. Vasilievski's lives of St. George, Archbishop of Amastris, and St. Stephen, Archbishop of Somosh; I. Shtcherbatchef's "Danish Archives: Materials for the History of Old Russia in Copenhagen, 1326-1690"; the "Works" of Catherine II, edited by A. I. Vvedenski; "Protocols and Reports of the Senate" (1715), edited by the Academy of Sciences; and "Archives of Prince Kurakin," Vols. II and III. More modern phases of national history form the theme of Nadler's "Alexander I and the Holy Alliance" (Vol. V); A. Tratchevski's publication of documents on "Diplomatic Relations of Russia with France . . ." (1805-'6), continued in Vol. LXXXII of the "Journal of the Imperial Historical Society"; Mme. Likhatchev's "Materials for . . . the History of Education of Women in Russia" (1796-1828, Vol. II); Steheglov's work on the founding of the Russian "Council of State" under Alexander I; and Mme. A. O. Smirnova's reminiscences, a noteworthy contribution to the literature on Czar Nicholas and his time, published in the "Northern Messenger." V. Serguéévitch has continued his "Russian Legal Antiquities," Suvorov shows the influence of western Europe on ancient Russian law, especially ecclesiastical, while Pavlov as emphatically denies it; Nikitski's "History of the Economic Conditions of Great Novgorod" was published posthumously in the "Proceedings of the Moscow Society for the Study of Russian History and Antiquities." Siberia is dealt with in V. Meiov's "Bibliography of Siberia" and S. Elpatjevski's "Outlines of Siberia." E. Lamanski has issued "India: Economic Study"; V. Krivenko, "Sketches in the Caucasus"; and F. Elnef's "Finnish State," Khoronski's "History of Armenia," A. Liprandi's "Downfall of Poland," R. V. Zotov's researches concerning the principality of Tchernigov, G. Preis's "Russian Jews in America," and a "Systematic List of Works on the Jews, in Russian, . . . 1708-1889," are other efforts in historical specialism. Noteworthy contributions to social and political science are Tchuprov's popular "Political Economy" and "History of Polit-

ical Economy"; a series of statistical compilations under the general title, "Results of Economic Investigations in Russia, based on the Data of Zemstvo Statistics," two volumes of which have appeared; "Peasant Leases and Rents," by Prof. Karuishev; and "Village Communes," by Vasili Vorontzov (the author of "History of Capitalism in Russia," and who has also described the Russian "small farmer" in his "Progressive Tendencies in Peasant Agriculture"); and Fortunatov's book on the "Rye Crops of European Russia," which admirably supplements Grass's data on the same subject. It was reported in August that Count Tolstoi had completed an important work, socialistic in character, entitled "God in Man," and that he intended further, in a novelette, to express his opinions concerning the social conditions of the present. In the domain of philosophy we have A. Vvedenski's "On the Limits and Symptoms of Animation" (representing the views of the neo-Kantians), J. Panaef's "Light of Life," and the collected works of V. D. Kudiatzev, professor at the Moscow Theological Academy. Here, as in France, the theories of the German philosopher Friedrich Nietzsche have awakened more or less interest.

Other new publications are, in education, A. Shtchekin's "Public Schools . . . in Russia" (1892); P. Snamenski's "History of the Theological Academy of Kasan . . . , 1842-'70" (3 vols.); in philology, N. Goryaev's "Essays toward a Comparative Etymological Dictionary of the Russische Written Language." Under the editorship of Arseniev and Petrushevski, who succeeded Andréevski, on his death, in 1891, the magnificent encyclopædia in course of publication has been extended and improved, growing into a noteworthy national undertaking, seventeen volumes having appeared.

Among biographies are those of A. J. Koshelev by Kolupanov, and of the historian Pogodin by Barsukov (seven volumes published)—both, like the interesting correspondence between Youri Samarin and Baroness von Rahden and Vol. III (1851-'60) of J. S. Aksakov's "Letters," throwing much light on the Slavophil movement; two volumes of Schönrock's work on Gogol have appeared, and three volumes of Vengorov's voluminous and excellent "Critico-Biographical Dictionary of Russian Authors." The diary (3 vols.) of Nikitenko, the censor, has been published, and Skabitchevski has written an interesting "History of Russian Censorship," while E. Garschin has brought out a "Russian Literature of the Nineteenth Century." The French symbolists and *décadents* have been much discussed by N. K. Mikhailovski (adversely) and others, and Mereshkovski has written quite from their standpoint in his book on "The Causes of the Decline of, and of the New Currents in, Contemporary Russian Literature." P. D. Boboruikin, Prince S. Volkonski, and Avrelin have contributed to the magazines on purely æsthetic matters, and Appelroth has made researches in the literature on Praxiteles.

In the department of prose fiction there are to be recorded two new novels by Tchekhov, "Room No. Six" (one of his best) and "The Story of an Unknown Person"; E. Salias's "Fifth Wheel" and "Sir King" (historical novel); Dedlov's "Sashenka"; Boboruikin's "Our People" (dealing with servant life); W. Nemirovitch-Dantchenko's "The Millions of Slastenow"; Garin's excellent "School-Boy" (a continuation of his "Childhood of Tema," and supposed, like the latter, to be autobiographical); and "Ruffina Kazdueva," by Mme. Blaramberg (Ardov), describing the colonies among the people proposed in the Seventies for the spread of socialism. The latter author has also issued a collection of stories, and Garin a volume of "Sketches and Tales," under which title two volumes by Korolenko, exquisite in their delicacy and feeling, have also seen the light. Korolenko has also written his impressions of the famine (1892) in Nizhni Novgorod, and the literary activity of Erel, the novelist, has been practically limited to writing accounts of his philanthropic labors among the peas-



antry of the famine-stricken province of Voronezh. The latter *zemstvo*, by the way, is said to have issued the most notable statistical returns among those which formed part of the large mass of publications called forth by that fearful period of suffering.

Spain.—As is but natural, the contributions to Columbus literature called forth by the Columbian quadricentenary (enthusiastically celebrated throughout Spain) again form a noteworthy percentage of the historical publications. Among the more important of these are works by the Marquis de Iloyos, Juan Lamarque de Novoa ("Cristobal Colón," a poem), Louis Vidart ("Colón y Bovadilla y la Ingratitud de España"), Joaquín Torres Asensio (Vol. I of "Fuentes históricas sobre Colón y América," translations of old works), F. R. Vhagon ("La Patria de Colón"), José María Asensio ("Martín Alonso Pinzón"), Cesáreo Fernández Duro, Balaguer ("Castilla y Aragón en el Descubrimiento de América"), Ángel de los Ríos ("Colón y los Montañeses"), F. Serrato, F. de P. Vallador ("Colón en Santafé y Granada"), and M. Sales Ferrer ("El Descubrimiento de América"). The Royal Academy has issued a "Bibliografía Colombina" (list of all publications relating to the navigator and his sons, Diego and Fernández) and—in Vol. VII of "Documentos inéditos de las antiguas Posesiones de Ultramar"—"Los Pleitos de Colón," and the Duchess of Alva has published "Autógrafos de Cristobal Colón y Papeles de América." The relations between the Spanish and the Moors, both in the past and present, are illustrated in numerous historical works such as Eduardo Saavedra's "Estudios sobre la Invasión de los Arabes en España," the collection of Hispano-Arabic historians (Vol. VIII), Francisco Xavier Simonet's "Pericia geográfica de los Escritores Arabes," and the papers by Rodrigo Amador de los Ríos on monuments of Arabian art shown at the quadricentenary celebration, etc. The number of professorships of Oriental languages (especially Arabic) at the universities has greatly increased. National and local history have, as ever, received much attention. Of the "Colección de Documentos inéditos para la Historia de España," the one hundred and fifth volume, containing the chronicle of Rodrigo Jiménez de Rada, Archbishop of Toledo, has been issued, and two volumes of a new series, "Nueva Colección de Documentos . . ." have made their appearance. C. Miguel Vigil has issued "Heráldica asturiana y Catálogo armorial de España"; M. Danvila y Collado, "Reinado de Carlos III" (Vol. I); and G. J. Gómez de Arteche, "Reinado de Carlos IV." J. de Moret's "Anales del Reino de Navarra" is completed with the twelfth volume; Benavides has issued "Glorias de Antequera"; Pablo Hurtado, "Indicios Cacerreños"; Anselmo Salvá, "Cosas de la vieja Burgos"; José Puiggart, "La Tornada del Bruch y Vindicación de Igualada"; Viscount of Palazuelos, "Santa María de Porqueras"; Gutierrez del Caño, "Historia de la Villa de Zaratán" and "Las Batuecas y los Jurdes"; Aguilar y Cano, "Hisn Belay: Estudio histórico acerca del Castillo de Poley"; Juan A. Balbas, "El Libro de la Provincia de Castellón"; Emilio Grahit y Papell, "El Sitio de Gerona en 1633"; Pablo Alzole, "El Arte Industrial en España"; and Manuel Jorrito, "Los sitios reales: notice . . . des séjours et dependances de la maison Royale d'Espagne" (a fine and curious bilingual work); and Vol. II of A. P. Gascon de Gotor's "Zaragoza artística, monumental é historica" (1891-'92) has appeared.

The congress of Americanists assembled at Huelva and La Rabida in October, 1892, contributed much to the literature concerning Spanish America, including Matías Alonso Criado's "Páginas históricas de la República Oriental del Uruguay," and Pedro Pablo Figueroa's "Diccionario biográfico nacional, ó Historia de la Literatura Chilena," etc. To these should be added Juan Fernández Ferraz's "Nahuatlismos de Costa Rica," Francisco Fernández y González's "Los Lenguajes hablados por los Indígenas del Norte y Centro de América," and F. Montero Barrantes's "Geografía de Costa Rica" (1892), and "Elementos

de Historia de Costa Rica" (1892). The following are named as worthy of note in archæology and numismatics: "Catálogo abreviado de las Monedas del Dr. Gago"; "Apuntes para la Clasificación de Monedas antiguas españolas y extranjeras," by Gómez Imaz; "Santa María la Real de Najera," by Constantino Garráz; and "De Llanos à Cobadonga," by Foronda. And Vicente Maumus's "La Iglesia y la Democracia" has been commended.

New works of fiction are: Lp. Alas, "El Señor, y lo demás"; L. de Terán, "Clara Obscuro"; L. Taboada, "Páginas alegres"; F. Tusquets, "La Hembra"; V. F. López, "El Filibustero"; G. Tarde, "El Duelo"; B. Pérez Galdos, "La Loca de la Casa"; A. Palacio Valdés, "El Maestrante"; J. Gutiérrez, "Los Amores de Valentina"; J. Echegaray, "El Poder de la Impotencia"; J. J. Franco, "Masón y Masona" (1892, 2 vols.). Jacinto Benavente's "Colección de Cartas de Mujeres" is said to reveal a delicate observation of the female heart. Poetry and the drama have not received much attention. In the former there is practically nothing to record except a few poems by Campoamor (of which, too, Columbus is the subject). Juan Pérez de Guzmán has published "Cancionero de la Rosa" and "Cancionero de Señores" (selections from the poetry of sixteenth and seventeenth century authors), Menéndez y Pelayo, a digressive "Antología de Poetas Líricos Castellanos" (Vols. I-IV), and an anthology of Spanish-American poetry has been announced. In dramatic literature there is little of note, except, perhaps, "Mariana" ("a realistic study of modern society") and "Dolores," two comedies by José Echegaray, and a drama by his brother Miguel. As usual, there are many translations in the list of the year's literary product.

Sweden.—The rich literary productiveness of the preceding year appears to have been succeeded in 1893 by a period of comparative rest. History has been contributed to in O. Alin's "Carl XIV. Johan och rikets ständer 1840-'41"; T. Andersson's "Svenska Underhandlingar med Rysland, 1537"; continuations of "Handlingar rörande Sveriges Historia" and of "Riksdags-Protokoll, Sveriges Ridderskaps och Adels," and O. Fredrick's "Några bidrag till Sveriges Krigshistoria åren 1711-'13." O. Salomon has published "Föreläsningar öfver J. J. Rousseau"; L. Norberg, "I den kirkliga Bekännelse-frågan"; O. Ahnfeldt, "Utvecklingen af Svenska Kyrkans Ördning under Gustav den förstes Regering"; A. Malmström, "Den apostoliska Kyrkan och Principatet"; Otto Norberg, "Svenska Kyrkans Mission vid Delaware i Nord-Amerika"; and R. F. Hermanson, "Finlands Staträttsliga Ställning" (published in Finland). One of the most noteworthy books of the year is the veteran statesman Louis de Geer's "Memoirs" ("Minnen"), revealing a noble and upright personality, and imparting much knowledge in regard to Sweden's recent history. A biographical sketch of the late Sonja Kovalevski, the talented professor at the Stockholm University, written by her friend, Anna Charlotte Leffler-Cajanello (through whose death Swedish literature has suffered a decided loss), has been published posthumously, as have also the "Efterlemnade Bref och Anteckningar" of C. W. Scheele (by A. E. Nordenskiöld), in which that noted chemist's claims to the discovery of oxygen are proved.

Not only, as stated in our last review, have Swedish authors to contend with difficulties in the shape of a market restricted as to time and a limited circle of readers, but their field is narrowed even more by the publication of numerous translations—frequently both cheap and poor. The newly formed Authors' Union proposes to "ostracize both bad translations and translations of bad books," which will also tend to regulate the scale of prices for literary work. As indicated last year, a certain quality of restraint seems to keep Swedish *belles-lettres* in the golden mean between ultra-realism and extravagant idealism. New works to be recorded are: G. Schröder, "En Timmermärkares minnen"; F. Hedberg, "Från Skärgården och Fastlandet" and "Arbetarlif" (1892); T.



Hedberg, "En Vinter i södern"; and G. af Geijerstam, "Stockholmsuoveller."

**Switzerland.**—The German Swiss have always in these reports been classified with Germany, and that not simply as a matter of convenience, for in a literary sense they are closely related to their brethren in the empire. Notices of the work of some of their important writers in the broad domain of *belles-lettres*, such as J. Joachim and J. V. Widmann, will be found under **Germany**. In the present division, however, may be placed some of the notable publications in the various fields of learning, more especially those of directly national or local interest. History has been contributed to in Paul Schweizer's important "Geschichte der schweizerischen Neutralität," and Wilhelm Oechsl's "Quellenbuch zur Schweizergeschichte" (Neue Folge), and this subject has its periodical in "Anzeiger für schweizerische Geschichte," while as a literary review the country has a "Schweizerische Revue" (third year). In ecclesiastical history we have Emil Egli's "Kirchengeschichte der Schweiz bis auf Karl den Grossen," and in biography E. de Budé's "Vie de Jacob Vernet, théologien genevois (1698-1789)" and C. H. Vogler's life of the almost forgotten sculptor Alexander Trippel, of Schaffhausen; while various phases of Swiss law are elucidated in Eug. Huber's "System und Geschichte des schweizerischen Privatrechts" (Vol. IV), C. Stöss's "Grundzüge des schweizerischen Strafrechts" (Vol. II), and W. Rieser's "Das Schweizerbürgerrecht" (1892), and a "Schweizerisches Idiotikon" is in course of preparation. It is reported that an attempt to introduce the production of national dramas in French Switzerland was made by performing, at Avenches, a drama by Adolph Ribaux, of Neuenburg, entitled "Julia Alpinula."

**Spanish America.**—It may no doubt be urged that our Spanish-American brothers are kept in such a state of turmoil by revolutions following each other in rapid succession, that literature can hardly thrive in such an atmosphere. Yet some portion of what has been done seems worthy of note, both as a measure of present achievement and a promise of future expansion.

Under **Spain** will be found a list of important works by Americanists and a reference to a new Spanish-American anthology. Lexicographical material is found in Carl Lentzner's "Tesoro de Voces y Provincialismos Hispano-Americanos" (Vol. I, Halle, 1892), and another Spanish book by a German author is "Geografía y Geología del Ecuador, publicada por orden del Supremo Gobierno de la República" (Leipzig, 1892), by Theodor Wolf, twenty years a resident in that country. In Barcelona (1892) was published Vol. I of the "Obras" of Fray Vicente Solano (1791-1865), a *savant* Franciscan monk who lived in Ecuador, while Oscar d'Araujo issued in Paris "L'Idée républicaine au Brésil." It appears that in the latter country journalism, "the main factor of popular instruction," finds in French literature an "inexhaustible source whence it seeks the material necessary to the fulfillment of its civilizing and patriotic mission." At any rate, that was the reason cited for the failure of the Brazilian Congress to ratify the copyright treaty negotiated between France and Brazil in January, 1891. In the Argentine Republic, two noteworthy volumes published at Buenos Ayres are Alexandro Rosa's description of his numismatic collection of 1,571 pieces, and a five-volume work on Dictator Rosas, by Adolfo Saldias, while from Uruguay came the news of the death, in Montevideo, of Alexandro Magarinos Cervantés, famous as author, editor, liberal statesman, and university professor. In Cuba the cultivation of plants peculiar to the climate of that island was described in "Tesoro del Agricultor Cubano" (2 vols., "Biblioteca de la Propaganda Literaria"), by Francisco Javier Balmaceda, the sixteenth edition (1893) of whose "Fábulas morales" has also appeared.

After "Mexico, á través de los Siglos" (1887-'89, 5 vols.), perhaps the most important work of na-

tional interest in Mexico published in recent years is "Monumentos del Arte Mexicano antiguo," by Dr. Antonio Peñafiel, issued at Berlin, Germany, in five folio volumes, in 1890, a sumptuous book with text in Spanish, French, and English.

**LOUISIANA**, a Southern State, admitted to the Union April 30, 1812; area, 48,720 square miles. Population in 1890, 1,118,587. Capital, Baton Rouge.

**Government.**—The following were the State officers during the year: Governor, Murphy J. Foster; Lieutenant-Governor, Charles Parlange; Secretary of State, Thomas S. Adams; Treasurer, John Pickett; Auditor, W. W. Heard; Superintendent of Public Instruction, A. D. Lafargue; Attorney-General, M. Cunningham—all Democrats. Commissioner of Agriculture, Henry C. Newsom; Chief Justice of the Supreme Court, Francis T. Nicholls; Associate Justices, Samuel D. McEnery, Charles E. Fenner, Lynn B. Watkins, and Joseph A. Breaux—all Democrats. Judge Fenner resigned Aug. 15, to take effect Oct. 1. His term of office would have expired in 1896. Hon. Charles Parlange, Lieutenant-Governor, was appointed to fill the vacancy.

The death of Judge E. C. Billings, Dec. 1, left vacant the Federal judgeship for the eastern district of Louisiana; and on Dec. 13 the President sent to the Senate the name of Judge Parlange for the vacant office.

**Valuations.**—Great dissatisfaction is felt at the inequalities of assessment in the various parishes, and glaring injustice in the valuations put upon property for purposes of taxation has been exposed by some recent developments.

Suggestions are rife as to amendments in the law by the constitutional commission; but it appears that the Legislature has full power to take measures for equalizing valuations. As a step toward that end, the assessor of St. Landry issued a call for a convention of tax assessors to meet in New Orleans, Jan. 16, 1894, the day after the convention of sheriffs, who, as collectors, would be of assistance to the assessors.

**Finances.**—The Auditor reports the receipts from all sources for 1893 to have been \$3,956,854.95. The expenditures were \$3,546,275.89. An additional sum of \$171,343.02 was paid out during the year from the direct tax fund of \$314,000, which was received in 1892 and is not in the receipts and expenditures proper.

The State Board of Liquidation held a meeting in the summer, and decided to take measures to use a surplus that has accumulated from the fund set aside for the payment of interest on State consolidated bonds for the purchase of State bonds, and thereby accomplish a reduction of the State debt.

The Treasurer, who was not present at the meeting, announced his disagreement with this determination of the board. He took the position that the act of 1874, under which the bonds were to be purchased, had been abrogated by the Constitution of 1879, and that, consequently, he would not pay out the money unless ordered to do so by the courts or upon the warrant of an act of the Legislature. The Attorney-General declared that the law governing the Board of Liquidation leaves nothing to the discretion of the board, and he therefore applied in behalf of the State to the Civil District Court

of New Orleans for a mandamus to compel the Treasurer to obey the law.

The case was tried, and it was decided that the Board of Liquidation has the power to order the purchase of State bonds, and the Treasurer must, when so required, pay for the bonds out of the funds dedicated to that use. The Treasurer dissented from this judgment, and carried an appeal to the Supreme Court of Louisiana, the entire case turning on a question of constitutionality. That court affirmed the judgment of the lower court.

**Charities.**—The Confederate Soldiers' Home had 50 inmates, and cost about \$8,000. At a meeting of the Army of Tennessee a resolution was adopted calling on all the camps of Confederate veterans in the State to appoint a committee of three to go before the Legislature and request a liberal appropriation for the Soldiers' Home in the city of New Orleans. The State has no pensioners of the war. A bill was introduced at the last session for the purpose of levying an appropriation, to be applied in the payment of moderate pensions to disabled veterans; but it was found that the Constitution not only made no provision for such an appropriation, but absolutely prohibited it.

The Institute for Deaf Mutes at Baton Rouge had an enrollment of 70 during the year, and the session closed with 66. An industrial department opened last year has cabinet, carpenter, and shoe shops for the boys, and instruction in dressmaking and embroidery for the girls. Diplomas were given for the first time this year to those who had finished the course.

**Education.**—Disagreements between the president and the faculty of the State University at Baton Rouge led to a request, in July, on the part of three members of the faculty, that the board should make a change in the presidency. They said they believed the school was suffering from the weakness and inefficiency of the president's administration. After consideration, the board replied that the management appeared to be satisfactory, and the president must be sustained. These three professors and one other thereupon resigned, and two more professors resigned in September. The July reports of the president of the faculty and the treasurer showed the attendance of cadets larger than last year, the health and discipline excellent, and the finances of the institution in fair condition. Four hundred dollars was appropriated for the care and improvement of the grounds.

The amount of school money apportioned among the school population in June was \$49,152.87, giving 13 cents *per capita*, the total number being 378,099. The State board of education met to select text-books for the schools. Most of the school superintendents were opposed to any change unless books of equal merit could be purchased at a materially lower figure than that asked for the books now used. Bids were taken from representatives of the principal school-book publishing houses.

At the eighth annual commencement of the State Normal School at Natchitoches, in June, 14 pupils were graduated. The Peabody Normal Institute opened for a five-days' session at Thibodeaux, in June, with about 100 teachers present, and the enrollment reached 200 before the close.

Another institute opened at Crowley, June 7, with a large attendance.

The session of the Louisiana Chautauqua, held at Ruston, in July, was attended by more than 2,000 persons, and the meetings were characterized by great enthusiasm and success.

**Crops.**—The total movement of cotton in November was in excess of any movement for that month except in 1891, taking the records back as far as 1880. The total for the month was 1,656,884 bales, against 1,482,928 in November, 1892, and 1,919,272 in November, 1891—an increase over last year of 173,956, and a decrease under the year before last of 262,388.

The effect of the sugar bounty has been greatly to stimulate production. The average yield of cane per acre has increased two tons, and by improved processes more sugar is obtained from the cane. The introduction of the central factory system has proved of great advantage, enabling men of small means to engage in the sugar business, whereas heretofore, as it takes from \$250,000 to \$500,000 to equip a plantation for making sugar, only large capitalists could engage in it. The influence of the bounty on the price to consumers is explained as follows: During the several months in which the Louisiana sugar crop is being marketed the price of sugar is greatly cheapened to consumers. That this is a fact is well known to all interested in the sugar trade. The cause of this cheapening is the fact that during that period the domestic producers, to the number of many hundred, put upon the market good grades of sugar, which can enter directly into consumption without the intervention of the refiners. Such sugar thus competes actively with refined sugars, hence the prices of the latter are reduced in order to compete with the Louisiana product.

The rice-growers have unanimously reached the conclusion that in order to cheapen the cost of handling rice the present system of shipping in sacks must be abandoned and shipments in bulk substituted. For some years past the percentage of the crop grown along the river has grown smaller, until now fully two thirds of the crop is grown in what is known as the Calcasieu section. All this Calcasieu rice, as well as a good portion of the river rice, comes to market by rail. It is therefore proposed to bring the rice in bulk, and for that purpose it will be necessary not only to erect elevators in New Orleans, but along the lines of railroad traversing the rice belt.

The stock-taking of April 1 showed that there were held in New Orleans 369,527 sacks of rough rice. There was a shortage of the crop this year, which led to a material advance in price.

**Lumber.**—A report issued by the Southern Lumber Manufacturers' Association, covering stocks on hand Aug. 20, and sales for the first six months of the year, gives the number of mills in Louisiana as 12; the daily capacity, 615,000 feet; the stocks, 20,150,000 feet; and the shipments, 45,294,339 feet. The report is not complete, as only 94 answers were received to the 400 requests sent out through seven States. But those replying were judged to cover a large majority of the best plants in the yellow pine districts.

**Bananas.**—Statistics of receipts at the leading ports show that New Orleans has become the great banana market in the country. In 1892 the re-



ceipts amounted to 4,483,351 bunches, against 3,715,625 at New York, 1,840,519 at Boston, and 1,818,328 at Philadelphia. During the first six months of 1893 the total receipts at New Orleans were 2,210,271 bunches.

**The Jackson Monument.**—A movement has been made by the "Daughters of 1776-1812" to obtain custody of the Jackson monument on the plains of Chalmette, rescue it from the decay into which it is falling, and, if possible, finish it according to the original plan. The design was adopted by the Jackson Monument Association, May 30, 1855. The shaft was to be 142 feet in height. As it now stands it shows 56 feet faced with Tuckahoe marble from New York. It was designed to place the marble steps at the base after the completion of the shaft.

**The Lottery.**—The Louisiana State lottery received in January a charter from the republic of Honduras. The concession is a monopoly of the lottery business for fifty years. The Hondurian Government grants to the company the island of Cuanaja, in the bay of Honduras.

**Storm and Flood.**—In March, sections of Catahoula and Concordia Parishes were overflowed, bringing misery and want to many families. In May, bad breaks occurred at Bayou Lafourche, Grand Lake, Ark., Lake Providence, and Wylly's Levee in East Carroll Parish, four miles south of Lake Providence, resulting in immense damage to growing crops. The Governor, with others, made a tour of inspection of the levees, and summarized the results of his observations as follows:

There are about 90 miles of levees in Arkansas in which the people of Louisiana, and especially those of the parishes composing the Tensas basin levee district, are directly interested. Of this stretch about 17 miles have been built this year by the General Government, and are in a fine and safe condition. Contracts covering about 25 miles additional have been given out by the General Government for the present year, and when these are completed they will form a stretch of 42 miles of good and safe levees. The Government has also repaired and raised other levees during last season. All aid possible should be rendered that State in this direction. Most of the old levees in Arkansas are in a wretched condition, poorly constructed, and inadequate to resist any flood of the magnitude of that which now threatens us.

The levees in Louisiana I find in fine condition. Immense dikes have been built which will resist almost any flood in the river, and at points where any weakness has manifested itself the danger has been promptly met.

The break in East Carroll occurred after this report was made, and was regarded as the crowning catastrophe of the season. The crevasse was 300 feet wide, May 23. It was in the heart of the finest portion of East Carroll Parish, about halfway between the upper and lower ends of its levee system. The plantations adjacent are numerous and of the highest fertility. The break was at the lower end of Providence reach, in the right of a bend, and in a position to catch the full force of the river. By May 30 the crevasse had widened to 3,000 feet. Those made homeless by the floods were sheltered in two large camps, supplies were distributed, and many of the men were employed on the repairs. Two hundred tents were sent for to shelter those coming later from the rear of the parish and

from Madison. At least 5,000 colored people were driven from their homes.

May 29 a crevasse occurred at Amos bayou, in Arkansas, bringing more destruction to homes and crops in north and east Louisiana.

A part of Baton Rouge was inundated from a crevasse in June. Two breaks occurred, June 17, on the east bank of the river, one above and one below New Orleans. The one above, in the parish of St. John the Baptist, was very serious; 1,000 men were set at work upon it, but in spite of their exertions the ends were continually giving way, and the United States engineer was called upon for assistance. The line of cribbing was doubled in width, and 100,000 sacks were brought to be placed in position. They were in piles 30 or 40 feet high on each side of the crevasse. A line of men carried these sacks from the piles to the cribbing. On each side of the crevasse a line of men, reaching for half a mile could be seen, each one with a sack of earth on his shoulder. This continuous procession was kept in operation until far into the night. The towboat "Jackson" steamed up to the crib work, and, with numerous electric lights hanging out from the cabin, turned the night into day. This enabled the men to work all night. The crevasse, which had widened to 170 feet, was gradually closed.

June 27, the New River country, which has been frequently flooded, suffered from an overflow from the Rescue crevasses, exceeding in depth, extent, and suddenness any previous inundation. There was but one house along the 25 miles of the New River settlement with its floor above the surface of the water. Ten lives were reported lost.

A cyclone devastated the little town of Lockport, on Bayou Lafourche, Sept. 7. Eight persons were killed, and many more injured.

The most dreadful disaster of the year was the storm of Oct. 1. It came without warning, because it came in directly from the sea, having been encountered 25 to 50 miles out, south of New Orleans, blowing from the southwestward. It moved so rapidly that it struck the city only a few hours after it was first encountered at sea. The section devastated was that lying about the mouth of the river, and as far west as Last Island and Bayou Grand Caillou. The greatest fury of the storm was spent on the oyster settlements at Bayou Cook and the Cheniere Islands. The storm struck the district at 7 o'clock in the evening. Not a house was left standing, and more than half the population was lost. The survivors were in the most destitute condition. Grand Isle, a summer resort lying directly in the path of the storm, had a miraculous escape, due to the fact that the land upon it is higher than that of the Cheniere. Many houses were blown down, but only 25 lives were lost. At Cheniere about 800 lives were lost. The whole loss of life was estimated at 2,500. Prompt assistance was sent to the survivors from New Orleans, from other parts of the State, and from other States.

**Court Decisions.**—Decision was rendered in the United States court, in the case of the widow of an Italian who had been lynched at the parish prison. She was an American, and with her husband continued to reside in Louisiana

till his death. She sued for damages. The judge decided that marriage with an alien did not affect her citizenship, and hence that the United States courts had no jurisdiction.

In a case against the Amalgamated Council and various labor organizations which ordered a strike of all the labor organizations in November, 1892, an injunction was asked against these bodies under the act of Congress prohibiting combinations in restraint of trade. In an elaborate opinion the court declares that the acts complained of were unlawful, and that the merchants are entitled to relief.

**Conventions.**—An Immigration Convention was held in New Orleans in March, called by the Governor, for the purpose of discussing the best methods of bringing capital and immigrants into the State. Resolutions were adopted inviting immigrants from other States and from Europe, requesting the chairman to appoint a committee whose duty it should be to publish a pamphlet describing the advantages the State offers to immigrants, indicating the merits of its climate, soils, timber lands, fisheries, etc.; to promote the formation of local and parish immigration organizations which will prepare lists of available lands and other data; and to co-operate with the Immigration Bureau to promote the work of that department, and to formulate plans for paying all proper expenses of the work.

A Cotton Acreage Convention was held during the same day, assembling after adjournment of the sessions of the other. It was called by the Commissioner of Agriculture, to take such action as should seem best, looking to the decrease in acreage devoted to cotton the present year, and to consider the propriety of sending delegates to a general interstate convention to be held at an early date for a similar purpose.

The resolutions were in accordance with the purpose of the convention, urging upon the attention of planters of the whole cotton section "the folly of pursuing the old methods of planting mostly cotton, to the exclusion of cereal and other crops, and upon such planters, as individuals and citizens, to set the personal example of raising first such crops as will give support to home and family, and then to plant sufficient cotton to furnish the luxuries of life."

**Constitutional Commission.**—At the last session of the Legislature provision was made for the appointment of a commission charged with the duty of considering important measures which would involve an amendment to the State Constitution, and of reporting suggestions to the next session of the Legislature. This commission is to be composed of two members of the State Senate, appointed by the Lieutenant Governor; three members of the House of Representatives, chosen by the Speaker of that body; and two members for the State at large, named by the Governor from among the mass of citizens. There is a very general demand for a remodeling of the suffrage and election system in operation in the State. The commission met in July, but the organization was deferred, on account of absences, till Jan. 3, 1894.

**LUTHERANS.** The Evangelical Lutheran Church in the United States numbers 60 synods, 5,302 ministers, 9,069 congregations, 1,293,163 communicant members, and a population of

7,000,000. The number of Lutherans in the world is 52,850,660. Its 2,786 parochial schools in the United States employ 3,370 teachers, and contain 146,287 pupils; and its 5,365 Sunday schools have 48,233 officers and teachers and contain 453,109 pupils. The offerings of the congregations for missions, educational institutions, orphanages, hospitals, deaconess institutions, and other works of benevolence (9 synods not reporting), amount to \$884,859.26. The General Council is credited with 9 synods, 1,055 ministers, 1,777 congregations, and 307,523 communicant members, and benevolent contributions amounting to \$287,811.93; the Synodical Conference, with 3 synods, 1,519 ministers, 2,165 congregations, 441,129 communicants, and \$171,254.86 for benevolence; the United Synod of the South, with 8 synods, 205 ministers, 405 congregations, 36,518 communicants, and \$18,575.42 for benevolence; the General Synod, with 26 synods, 1,046 ministers, 1,441 congregations, 165,346 communicants, and \$230,694.23 for benevolence; and 12 independent synods, with 1,477 ministers, 3,281 congregations, 342,647 communicants, and \$176,521.82 for benevolence. The 26 theological seminaries have property valued at \$1,097,800, endowment amounting to \$527,700, 90 professors, and 1,033 students; the 35 colleges have property valued at \$3,024,500, endowment amounting to \$709,223, 297 professors, and 5,162 students; the 37 academies have property valued at \$488,250, endowment amounting to \$50,100, 176 instructors, and 4,380 students; and the 13 ladies' seminaries have 125 professors and 1,047 pupils. The aggregate of these items shows 111 educational institutions, having property valued at \$4,889,323, endowment amounting to \$1,290,573, and 237,245 volumes in their libraries, employing 688 instructors, and having 11,622 students, of whom more than 2,520 are in preparation for the ministry. The amount given as endowment expresses only a small fraction of the resources of the educational work of the Lutheran Church, for 85 of the 111 institutions are very largely supported by annual gifts. The Lutheran Church in the United States maintains 35 orphanages, 8 asylums for the aged, 14 hospitals, 6 deaconess institutions, and 12 immigrant and seamen's missions, whose property is valued at \$2,342,700, and whose inmates number 35,000. These institutions are maintained principally by private gifts. The periodical publications of the Church number 133, of which 49 are German, 44 English, 15 Norwegian, 12 Swedish, 4 Danish, 3 Icelandic, 3 Finnish, 2 Slavonian, and 1 French. Following is a report of the 4 general bodies and the 12 independent synods:

**General Synod.**—The thirty-sixth biennial convention of this general body was held at Canton, Ohio, May 21 to June 1, 1893. The Rev. Jacob A. Clutz, D. D., President of the General Synod and President of Midland College, at Atchison, Kan., delivered the opening sermon. Delegates from 26 district synods were in attendance, representing 842 parishes and 1,441 congregations. The following officers were elected: President, the Rev. Charles S. Albert, D. D., Philadelphia; Secretary, the Rev. William S. Freas, D. D., York, Pa.; Treasurer, Louis Manss, Cincinnati, Ohio. The business of the convention consisted chiefly in hearing reports of the various boards and taking action on their recommendations.



An important declaration of the General Synod, at this convention, was as follows:

That the preamble and resolution adopted at York, Pa., in 1864, expressing the judgment of this synod that certain erroneous views often ascribed to certain articles of the Augsburg Confession are not contained in the same, be regularly published in the minutes of this body and in the Book of Worship, in immediate connection with the constitution of the General Synod.

An overture from the synod of Northern Indiana, asking for an edition of the English Book of Worship with the Common Service omitted, opened the whole subject with reference to that service and called forth a protracted discussion on what has for some time been a burning question in the General Synod. The report of the Woman's Home and Foreign Missionary Society shows that there are 677 societies in existence, with a membership of 18,397, whose contributions for two years amounted to \$37,457.29. The total sum contributed during the last decade amounts to \$157,132.47. The work has made rapid and substantial progress from the beginning. At the seventh session a series of resolutions in favor of prohibition was adopted. The Committee on "A Development of Luther's Small Catechism" reported that they had "taken note of all criticisms made on their work, and with these in view had carefully revised the whole work again," and had published a limited number of copies for examination, recommending that their book be published "at once for use in the churches, that the value of the work may be tested by practical experience." The educational and benevolent institutions of the body were reported as being in a flourishing condition. The work of deaconesses received careful attention, and the board appointed in 1889 to act for the synod, reported with reference to its needs, plans, and work, and the entire matter was again commended to the synods and congregations. Among other things the report contains:

We are now able to report that 2 candidates have entered upon a course of training, and several applications are pending. The board proposes to send the candidates to Kaiserswerth to be trained. For more than half a century the work has been carried on there, with constantly increasing success. Such a course will not prevent the adoption of original methods in adapting the system to our own land.

The Committee on Sunday Schools reported 1,134 schools, with 20,641 officers and teachers and 165,268 pupils; local expenses, \$92,858.55; and benevolent contributions of \$35,850.50. The board of publication of the General Synod publishes lesson helps for the schools on the basis of the International series of lessons. The committee recommended a normal series of tracts and books as an aid to teachers on the subjects of history, doctrine, and practice. The Committee on Common Service reported that the translation of the Augsburg Confession from the Latin is completed; but only a little progress has been made in the translation of the German text. With reference to the preparation of a standard English edition of Luther's Small Catechism, the following was reported:

At the first meeting of the committee at Gettysburg—present, representatives of the General Synod, the General Council, and the United Synod—the text was determined by a collation of Luther's last revision (1545) with the other editions. Subsequent sessions of the committee were held in Philadelphia in November, 1890, and January, 1891, where the translation was completed, subject to revision at a later meeting. In Philadelphia, representatives of the Joint Synod of Ohio aided in the work. At the final meeting of the committee at Wernersville, in September, 1892, the entire work was revised and completed. All branches of the English-speaking churches of the Lutheran faith were represented in the work.

Then follows a copy of the standard English version of Luther's Small Catechism as prepared by the joint committee. An overture for practical co-operation to all Lutheran bodies in America was adopted, and ordered to be communicated to the various synods.

Resolutions were also passed at this convention setting forth that "the marriage service by the ministry of the Church can be properly given only under the conditions, relations, and limitations set forth in that divine law which the Church and the ministry represent," and expressing the desire for a national law of marriage by which the evil of easy divorce for unscriptural reasons may be lessened and finally corrected. The synod also protested against the use of the contributions of the congregations within its bounds to the American Bible Society, for gifts of Bibles to those denominations which are carrying on missionary operations among Lutherans in Germany and Sweden.

According to the report of the Board of Foreign Missions, the total receipts, together with a balance of \$12,024.37, were \$126,012.14. Of this amount the Woman's Missionary Society contributed \$38,080.45, and from legacies \$9,787.65 were received. The expenditures of the board for the same period were \$117,007.45. Three new missionaries were sent out to the India mission. The following is the corps of workers in India: 6 ordained American missionaries, 1 ordained native pastor, 4 subpastors, 20 catechists, 107 subcatechists, 5 Bible and tract colporteurs, and 48 helpers. The mission embraces 425 villages containing Christians, 325 congregations, 135 prayer houses, 6 mission bungalows, a printing press and book bindery, a reading room and book depot, and a hospital and dispensary; and 13,566 baptized members; 180 Sunday schools and 7,018 pupils; 174 elementary schools, with 175 teachers and 3,277 pupils; a boarding school with 82 pupils; and the Arthur G. Watts Memorial College, at Guntur, formally opened March 17, 1893, having 34 instructors and 525 students. The zenana department contains 6 woman missionaries, 5 assistants, 61 Bible teachers, 68 secular teachers, 34 minor servants, 46 home pupils, 21 schools and 1,236 pupils, 13 Sunday schools with 32 teachers and 683 pupils. The mission work in Africa known as the Muhlenberg Mission, in Liberia, embraces 2 ordained American missionaries, 2 native ordained missionaries, and 180 communicant members, 310 Sunday-school pupils, 2 teachers in other schools and 274 pupils. The industrial department is exceptionally successful. The value of the Muhlenberg Mission plant is \$60,445.

The report of the Board of Home Missions showed the total receipts for two years, including a balance on hand, to be \$84,279.55. The Woman's Missionary Society contributed \$10,126.49. The average annual cost of each mission to the

Church is estimated at \$250. During the two years embraced in the report, 155 separate missions were cared for by the board in twenty States and Territories, 180 missionaries were employed, serving 214 congregations, 45 new missions were received on the funds, 39 new congregations were organized, 45 new churches built or bought, and 18 missions became self-sustaining. The membership of the 155 missions is 13,216, with 200 Sunday schools and 19,386 pupils. The contributions for salary and local expenses of these missions were \$272,174.42, and contributions for benevolence to \$15,958.46. The report of the Board of Church Extension shows total receipts amounting to \$107,115.53, an increase of \$27,260.15 in the past two years. This increase came largely from the synods directly on the apportionment, and \$8,255.09 from the woman's missionary societies. Loans, donations, and special appropriations were made to 104 congregations amounting to \$86,450.11. But this does not by any means tell of all the work done by the board. The assets of the board are \$223,381.20. The Western secretary, the Rev. John N. Lenker, presented the work of the board to 25 conventions of district synods, reaching from New York and Pennsylvania to California, often in the day and evening sessions; to congregations, woman's conventions, conferences, mission festivals, and educational institutions. The Board of Publication, with headquarters in Philadelphia, presented an interesting report of work done in supplying literature for pastors and people. Its assets are \$75,727.73, and its sales for the year ending March 31, 1893, amounted to \$73,696.14. The board publishes 7 periodicals, the combined monthly circulation of which is 255,500 copies. During the two years included in the report the board published 11 new books.

The thirty-seventh convention of this general body will be held at Hagerstown, Md., beginning June 5, 1895.

**General Council.**—This body—composed of English, German, and Swedish Lutherans—held its twenty-fourth convention in the Evangelical Lutheran Church of the Holy Trinity, Fort Wayne, Ind., Oct. 5–11, 1893. The Rev. Adolph Spaeth, D. D., professor in the Theological Seminary at Mount Airy, Philadelphia, delivered the opening sermon. Delegates from 7 of the 8 district synods belonging to this body, and a delegate from the English Synod of the Northwest, applying for admission, were present, representing 1,055 ministers, 1,777 congregations, and a communicant membership of 307,523. Representatives were also in attendance from the German Augsburg Synod, instructed to inquire into the doctrinal position of the Council, with a view of applying for admission. The following officers were elected: President, the Rev. Carl A. Swenson, Ph. D., President of Bethany College, Lindsborg, Kansas; English recording secretary, the Rev. George W. Mechling, Lancaster, Ohio; German recording secretary, the Rev. John Nicum, D. D., Rochester, N. Y.; Swedish recording secretary, the Rev. Carl J. Petri, Minneapolis, Minn.; and treasurer, William H. Staake, Esq., Philadelphia. The Committee on Church Book reported on the publication of the new edition of this book, which is

said to be the most complete liturgical work ever published in the United States. A pulpit edition has also been issued, to which general prayers were added, with special reference to Church festivals. The committee was instructed to publish a revised edition of the Sunday-School Book for the Sunday schools of the General Council. The committee also reported that final action had not yet been taken on the completed revision of the English translation of Luther's Small Catechism, made by a joint committee of all the general bodies and synods in which the English language is largely used. The translation proposed by the joint committee was presented for examination. The German Editorial Committee was instructed to issue a new edition of the German Sunday-School Book. The Board of Publication was authorized to publish a special edition of the Church Book for the use of missions. The report of the Board of Publication presented a large increase in its business since the publication of the new Church Book. The total receipts were \$22,578.13, and the expenditures \$22,317.19.

After a protracted discussion concerning its relation to other synods in the Council, the English Synod of the Northwest was admitted without a dissenting vote. The Rev. William A. Passavant, D. D., presented the report of the directors of the Theological Seminary at Chicago. This institution, formally opened in the autumn of 1891, has 3 professors, 31 regular students, and 39 post-graduate students. Since the last convention of the Council a professor's residence, and a hall for the seminary for the accommodation of students, have been erected. The seminary is permanently located on the north side, near Lake Michigan, and is open to all students of the Evangelical Lutheran Church who, having the proper gifts, give evidence of Christian character and experience. The curriculum of the institution is very comprehensive, embracing 18 different courses, and makes provision for a post-graduate course. The report of the Immigrant Mission in New York city showed that important work has been done among the thousands of Lutherans who annually come to this country. The receipts of the Emigrant House for the year ending April 1, 1893, were \$17,292.38, and the expenditures were \$15,548.38. With reference to the overture from the General Synod looking toward a union of Lutherans (see above), a committee was appointed to confer with a similar committee of the General Synod as to the real object in view, with the understanding that practical co-operation can only be possible on the basis of unity in faith and practice, and the committee was instructed to act always on the basis of the principles of faith of the General Council, and to take no action binding on it.

The home missionary operations of the General Council are much more extensive than appears from the minutes of this body. Each synod carries on mission work within its own territory, while the large field not thus provided for is intrusted to 3 general boards—English, German, and Swedish. The entire number of home missions of this general body, as carried on by the 3 boards and the individual district synods, is 321, and the money expended for this work during the past two years amounted to



\$106,700. The missions are scattered from ocean to ocean, and from Nova Scotia to Florida and Texas. The Rev. William A. Passavant, Jr., Pittsburg, Pa., Superintendent of the Board of English Missions, presented its report. The 22 missions supported by this board are all in important centers, like Boston, Chicago, Minneapolis, St. Paul, Fargo, Seattle, Tacoma, and Portland. Into these missions have been gathered 1,360 communicant members, who represent 9 different nationalities. During the past two years 6 of these missions were organized, 7 have built houses of worship, and some have advanced far toward self-support. The receipts were \$23,027.45, of which the Sunday schools contributed \$6,888.86. The expenditures were \$32,230.24.

The Rev. John Nicum, D. D., Secretary of the Board of German Home Missions, presented the biennial report of the board, together with detailed explanations of the work in the extensive territory under the care of the missionaries employed. This board maintains 45 mission congregations and preaching stations, employing from 8 to 10 missionaries. In the South, missionary operations are carried on in Kentucky and Alabama, and missions are maintained, 1 in Chicago and 4 in Utah. But the most extensive operations are carried on in the northwestern provinces of Canada—in Manitoba, Assiniboia, Alberta, and Saskatchewan, where 6 missionaries are stationed, serving 35 congregations and preaching stations. The membership of these missions is 3,500 persons, of whom 1,850 are communicants. This is the result of the past five years during which the present board has had charge of the work. The receipts for two years amounted to \$11,450.98, and the expenditures to \$10,494.44. The board was authorized to take out articles of incorporation, and to appoint a superintendent of German missions. The Rev. Carl J. Petri, of Minneapolis, Minn., presented the report of the Board of Swedish Home Missions. It shows that more than 60,000 Swedes

have come to this country since the report of two years ago, and 50 pastors have been added to the working force of synod. The work of the Board of Missions extends over the entire country, and embraces more than 100 missionaries. The receipts for two years were \$33,335.57.

The Rev. John Telleen, of Rock Island, Ill., was elected superintendent of missions. He began his work, March 1, 1892, and his labors have been eminently successful. The receipts for two years were \$32,856.52, and the expenditures \$30,844.30. The report furnishes the following statistics: 108 mission workers, 6 principal stations, 145 villages where the gospel is preached, 95 villages where schools have been established, 3,757 Christians, and 1,608 children in the schools.

**Quarter-Centennial.**—A quarter-centennial celebration of the General Council was held during this convention, and interesting addresses were delivered on the history, faith, work, and influence of the general body since its organization. The Committee on Statistics gave the present status of the body as follows: 10 synods (including the German Iowa Synod), 2,221 congregations, 255,662 members, 26,358 baptisms, and 18,519 confirmations during the past year, 1,146 Sunday schools, 19,429 officers and teachers and 165,921 pupils, 616 parochial schools and 29,625 pupils; value of church property, \$12,307,452; congregational expenses, \$1,946,426; German home missions, \$4,677; English home missions, \$12,443; foreign missions, \$20,359; educational institutions, \$58,543; orphanages, \$21,414; general benevolence, \$83,491; total benevolence, \$281,937; contributions for all objects, \$2,228,363; 4 theological seminaries, 13 colleges, with 130 professors, 2,029 students, endowment, \$351,484, and property, \$794,543.

The United Synod of the South and the Synodical Conference, being the other two general bodies of Lutherans in this country, held no conventions in 1893.

## M

**MACMAHON, MARIE EDMÉ PATRICE MAURICE**, Comte DE, Duc DE MAGENTA, ex-President of the French Republic and Marshal of France, born in Sully, June 13, 1808; died in Paris, Oct. 17, 1893. The family was a race of soldiers descended from an Irish adherent of the Stuarts who traced his lineage back to King Murtoth O'Brien. The Marquis de MacMahon was a lieutenant-general and a peer of France who was a close friend of the Comte d'Artois, afterward Charles X. His father's patron was king when young MacMahon, a vigorous youth of seventeen, entered the military college of St. Cyr, then an exclusive, aristocratic school. He gained no honors in his studies, but won friends by his frank and manly bearing, was expert with the sword, fought his share of duels, and when he left the college and immediately was initiated into active service in the expedition to Algeria, his soldierly qualities were soon brought out, and his keen powers of observation, rapid judgment, resolute action, and impetuous and dauntless courage were noted by

his commanders. He distinguished himself at the siege of Antwerp, in 1831, as aid-de-camp to Gen. Achard. With such a record and the aid of powerful connections, he obtained a captaincy at the age of twenty-five. Returning to Algeria, he showed himself a master and an exemplar of the tactics required in campaigning against the Kabyles. The fame of his deeds of daring and his cool intrepidity under fire was celebrated by the whole army. There was a scramble among the commanders to obtain the services of this brilliant officer who inspired the ranks with heroism and stimulated the wavering line to press on to victory. He signalized himself especially at Mouskaia, and in 1837, at the siege of Constantine, where he was wounded, and afterward in 1840-45, during the operations in the south at Biskra, Bab-el-Zaza, Djebel Ahra, Ain Kebira, etc. He was a colonel in command of an infantry regiment in 1845, and was a general of brigade in 1848, and commanded the Constantine division at the time of the *coup d'état*. As an old Legitimist he was not favorably disposed

toward Napoleon III, though he accepted his act as a necessity for the restoration of order; nor was the Emperor ever friendly to the blunt soldier, who would not dissimulate his opinions and likings; and therefore he was banished to Algeria, unless the service of the most popular general in the army was required in the field. He was promoted general of division in 1852.

MacMahon went to the Crimea toward the close of the war, and led the assault on the Mal-



MARIE EDMÉ PATRICE MAURICE MACMAHON.

akoff. When Gen. Niel sent an order cautioning him not to expose his division so recklessly, and advising retreat, he had carried the outer works, and, standing on the parapet, he sent back the famous word, "J'y suis, j'y reste"—he was there to stay. For his conspicuous part in the victory he was nominated a Senator. In 1858 he was appointed commander in chief of the troops in Algeria, after leading in the previous year the force that suppressed a revolt of the Kabyles. As at the siege of Sebastopol MacMahon performed the crucial feat on which final success depended, so in the Italian campaign of 1859 it was his fortune to crown French arms with victory by saving the day at Magenta. While the army was converging on Magenta in three columns, the flank columns were engaged by the enemy, and Magenta, the center, was undefended because MacMahon's column was far in the rear. On hearing the cannonade he sent an aid to take observations, and when he learned the situation he hurried forward, overcoming every obstacle, and reached Magenta in time to turn the tide of battle. He was created a marshal and Duc de Magenta by the Emperor on the battlefield. He took a prominent part also in the battle of Solferino. After the war he was commander at Lille and in 1861 he represented the Emperor at the coronation of King Wilhelm of Prussia at Königsberg. Later he was charged with the organization of Algeria, of which he was made

Governor-General in 1864, on the death of Marshal Pelissier. He was instructed by the Emperor to introduce the system of Arab bureaux, which did not put an end to native uprisings, and was abandoned after six years of trial.

When the Franco-Prussian War broke out, Marshal MacMahon was placed in command of the First Army and sent into Alsace, lacking definite information of the enemy's line of march, and mystified and balked by a succession of incomprehensible and contradictory orders from the quarters-general. The Germans broke into Alsace before he had his army together, and his advance guard was driven back at Weissenburg on Aug. 4, 1870. Compelled to act on the defensive, he took up a strong position at Wörth. There the army of the Crown Prince of Prussia fell upon him in overwhelming numbers on Aug. 6, and put his force to rout, capturing thousands of men and most of the artillery. His men retreated in disorder through the passes of the Vosges mountains, and when he had succeeded with difficulty in rallying them he retired to Chalons. Napoleon, whose dispatch telling that Marshal MacMahon had lost a battle cast such gloom as the reassuring words "Tout peut se rétablir" scarcely dispelled from the usually buoyant and confident French mind, retired from Metz to the camp at Chalons, where MacMahon had 120,000 men. The marshal planned to retire under the walls of Paris, but the Empress Regent, bent rather on saving the dynasty than on resisting the invasion, ordered him to march round by the Belgian frontier with his raw, disorganized troops, in order to strike the Prussians on the flank and join hands with Bazaine, who with admirable defensive strategy was holding the encircling German host at bay, but by his caution and delay compromising the fate of the country in the hope of saving his master's throne. MacMahon's ill-fed regiments were rolled back upon Sedan after the defeat of Gen. Faily's corps at Beaumont, on Aug. 30. At the battle of Sedan MacMahon was disabled by a fragment of a shell, which tore his thigh, at 7 o'clock in the morning, and he handed over the command to Gen. Wimpffen, thus escaping the humiliation of signing the capitulation. He remained on parole in a Belgian village while his wound was being treated, and then was taken to Wiesbaden, where he remained a prisoner of war till after the preliminary treaty of peace was signed. MacMahon's proverbial good fortune followed him even through this disastrous campaign. His honor and truth were never questioned by the public, and the military commission that investigated the causes of the defeat absolved him from blame, although he assumed personal responsibility for the march upon Sedan and the catastrophe that followed.

In April, 1871, Thiers called upon MacMahon to take command of the army of Versailles and suppress the Commune of Paris. This he accomplished in a ruthless military fashion, and even this created little resentment against MacMahon, who was regarded by the Parisians as a simple-minded soldier, faithful to duty and discipline, who had blindly obeyed orders without understanding the political rights or principles involved. He could not at first be tempted by



the Royalists to take a part in politics, when the future form of government was undetermined and they were anxious to put their best men forward. He devoted himself exclusively to his professional duties, and was one of the most active of those who worked for the reorganization and rehabilitation of the French army. On May 24, 1873, when the Monarchists had forced Thiers to resign, MacMahon could not refuse to accept the presidency, pledging himself to continue the work of liberating the territory, restoring order, and maintaining the principles on which society rests, and to fulfill the will of the National Assembly. The Monarchists had the majority, and might have succeeded, for a time at least, in restoring the Bourbon dynasty if the Comte de Chambord had not insisted in returning altogether to the old *régime*. "If the Comte de Chambord comes with the white flag," MacMahon said, "the *chassepots* will go off of themselves." He was inclined to Bonapartism, while his wife, born Duchess de Castries, was an ardent Legitimist. Neither was averse to an Orleanist *régime* in preference to the republic, but MacMahon was too loyal a son of France to enter into a coalition or conspiracy to establish monarchy by fraud or coercion, though resolved to fight openly against radicalism, which he dreaded and detested. The reactionary Cabinet of the Duc de Broglie was followed after the adoption of the definitive republic founded on the moderate principles of Thiers, with the septennate, by one of the Right and Left Centers under Dufaure, and this by one of outspoken republican principles under Jules Simon. The religious conflict courted on both sides endangered the new Constitution. When Gambetta uttered his challenge to the President, "Il faut se soumettre ou se démettre," he repeated his resolute phrase, "J'y suis, j'y reste." He dismissed the Simon ministry, appointed the Monarchist-Clerical one of the Duc de Broglie and Fourton, and prorogued and finally, with the support of the Senate, dissolved the Chamber. The Royalists used force and pressure without avail against the Republican coalition headed by Gambetta, which won the elections of October, 1877. MacMahon declared in his message that he accepted the decision of the people, and would adhere to the republic. On Jan. 30, 1879, rather than sign a bill forcing into retirement some of his old comrades, he resigned the presidency, saying that new times demand new men. After that he lived a quiet, retired life, occupying himself with writing his memoirs and enjoying the universal reverence of the people in even a greater degree than his colleague Canrobert, the last surviving marshal of France. The state funeral that was given to him was one of the most imposing civic and military pageants that France has seen in recent years.

**MAINE**, a New England State, admitted to the Union March 15, 1820; area, 33,040 square miles; population in 1890, 661,086. Capital, Augusta.

**Government.**—The following were the State officers during the year: Governor, Henry B. Cleaves; Secretary of State, Nicholas Fessenden; Treasurer, George L. Beal; Attorney-General, Frederick A. Powers, all Republicans; Superintendent of Common Schools, Nelson A.

Luce; Railroad Commissioners, David N. Mortland, Asa W. Wildes, and Benjamin F. Chadbourne; Adjutant-General, Seldon Connor; Commissioner of Industrial and Labor Statistics, Samuel W. Matthews; Insurance Commissioner, Joseph O. Smith (Stephen W. Carr was appointed in December to succeed him); Fish and Game Commissioner, E. M. Stilwell, who died, and was succeeded in April by Thomas H. Wentworth; State Librarian, Leonard D. Carver; Bank Examiner, Charles R. Whitten; Chief Justice of the Supreme Court, John A. Peters; Associate Justices, Charles W. Walton, William W. Virgin, Artemas Libbey, Lucilius A. Emery, Enoch Foster, Thomas H. Haskell, William P. Whitehouse, all Republicans except Judge Libbey. Judge Virgin died Jan. 23, and Andrew P. Wiswell was appointed, April 10.

**Finances.**—The total bonded indebtedness of the State on Jan. 1, 1893, was \$2,506,300, being composed entirely (with the exception of \$4,000) of registered bonds issued in 1889, very nearly all the old bonds, most of which were of the loans of 1864 and 1869, having been redeemed. The receipts for 1892 were \$1,577,678.12, and the expenditures, \$1,472,712.04; the cash on hand, Jan. 1, 1893, was \$304,569.68.

The value of property returned by the city, town, and plantation assessors in 1892 was \$265,025,481. The estimate of expenditures for 1893 was \$1,504,535.54, and the estimated receipts, \$1,464,882.

**Valuations.**—Tables published by the State assessors give the following figures: Number of polls, 167,378; of real estate, \$164,555,671; of nonresident real estate, \$30,302,562; resident personal estate, \$66,595,471; nonresident personal estate, \$3,561,787; total amount of live stock, \$15,747,468; total amount of mills and machinery, \$20,208,236; total amount of bank and trust stock, money at interest, and stock in trade, \$35,691,969; total number of horses and colts, 144,702; of oxen and steers, 138,601; of cows, 138,994; of sheep, 370,602; of swine, 33,445; total value of live stock, \$18,553,686; value of wild lands, \$17,795,680; value of carriages, \$1,798,016; value of musical instruments, \$1,721,491; value of shipping, \$6,346,228; franchise tax on railroads, \$115,043.05; railroad commissioners' tax, \$10,000; tax on express companies, \$1,134; tax on telephone companies, \$8,125.

**Mortgage Indebtedness.**—In Maine the decrease in the number of farms for the decade ending with 1890 was only 3.5 per cent., little more than half the decrease in the State of New York, which was 6.1 per cent. In every 100 farms cultivated by owners, there are in Maine 78 free of debt and 22 with mortgages. The mortgage indebtedness per head of the population is \$49.

**Banks and Loan Associations.**—The savings-bank tax under the law passed by the previous Legislature for the year ending Oct. 29, 1893, amounted to \$406,021.89, an increase over that of 1892, when the assessment was made under the old law, of \$39,253.10. There are 52 savings banks in the State. Only one has suspended business—the Richmond Bank.

The total deposits in the savings banks, October, 1892, was \$53,397,949.15, a net gain of \$3,119,496.71 over the preceding year. The total

number of depositors at the same date was 155,333, making a net gain of 8,665 for the year. The average rate of dividend was 4.04 per cent.

The 29 building and loan associations had resources to the amount of \$1,460,193.40. The number of shareholders was 7,897; of borrowers, 1,658; of outstanding shares, 39,690; of shares pledged for loans, 7,860; of loans, 1,949.

**Railroads.**—The returns of railroad corporations for the year ending June 30, 1893, show that the mileage of steam railroads in Maine was, at that date, 1,399.14 miles. The extension of the Portland and Rumford Falls Railway, 14.73 miles, furnishes the only additional mileage to that of 1892. The gross earnings show a marked increase over the previous year. The number of passengers carried in 1893 was 6,332,535, against 6,178,076 in 1892. The number of tons of freight carried in 1893 was 4,188,948, against 3,694,934 in 1892.

The street-railroad mileage, June 30, 1893, was 76.14, an increase of 17.88 over that of 1892. The number of passengers carried was 7,600,062, an increase of 1,728,523.

**Education.**—The Superintendent's report shows a falling off in the number of pupils in 1892 from the figures of the preceding year. There is an increase of the number of weeks in which schools were held, due to the increase of \$80,264 in the resources, consequent upon the increase in State valuations. The free text-book law has been generally complied with, and there is practically uniformity of books. The expense of the plan was very much less than was anticipated, the average cost per pupil for the two years having been less than one dollar a year. The average for the past year was 58 cents.

The whole number of pupils in the State is 210,472, a decrease of 525; attending school during the year, 136,634, decrease, 4,799; average registered attendance, 113,692, decrease, 9,074; average daily attendance per term, 90,191, decrease 12,871.

Average wages of male teachers per month, excluding board, \$35.75, increase, 85 cents; average wages of female teachers per month, excluding board, \$17.32, decrease, 24 cents.

The whole amount expended was \$164,342, increase, \$16,767; paid by towns and districts, \$124,111, increase, \$16,057; paid from State treasury, \$40,231, increase, \$710.

The amount apportioned to the schools for 1893 was \$505,600.81, exceeding that of 1892 by \$17,706.33.

The three normal schools had a total attendance of 374, and 98 graduates. The Madawaska Training School had 64, and graduated 6.

The State College, at Orono, reported receipts for the year ending June 30, 1892, of \$111,862.54, and expenditures, \$111,137.53. It receives from the United States Government \$17,000 a year, under the Morrill act, for the department of agriculture. The senior class numbered 16.

**Charities.**—The inmates of the insane hospital, Dec. 1, 1892, numbered 685, of whom 328 were women. Two hundred and sixty-nine were admitted and 257 discharged during 1893.

The balance on hand, Dec. 1, 1891, was \$2,125.15; the receipts for the year, \$163,185.65; the disbursements, \$161,226.62. The hospital was filled to its utmost capacity, but the finish-

ing of two new pavilions has relieved this condition. Twelve insane criminals were removed during the year to the insane department of the State Prison, at Thomaston.

The Military and Naval Orphan Asylum has 49 children under its care.

According to the directors' report, issued in November, the General Hospital had a total number of patients during the year amounting to 1,069. Of these, 221 were free patients and 92 paid in part.

**Reform Schools.**—The visiting committee made the following report of the Boys' Reform School in December: Whole number of boys received into the institution since it was opened, 2,056; present number, 122; number committed during the past year, 36. A cottage, finished during the year, accommodates 30 boys of the higher grade. The work required of the boys in the chair shop is easily performed. What they do beyond that amount they receive compensation for.

The annual report of the Girls' Industrial School at Hallowell showed that all departments were in a prosperous condition. Three hundred and seventy-five girls have been committed to the school since its organization, in January, 1875. Sixteen have been admitted during the past year, and the average number at the school was 60.

**Labor Interests.**—The report of the Commissioner of Industrial Statistics gives the total cost of factories completed, enlarged, or in process of erection in 1892 as \$2,128,000, and the number of persons employed as 4,312. The list of employments in which women are engaged numbers 155. The deputy commissioner made 330 visits during the year, and took from the mills 104 children. He thinks the age limit should be fourteen.

Strikes took place in 1892 in the cotton mills at Biddeford and in the shoe factories at Auburn, where about 3,000 men are employed.

**Machias.**—Exercises commemorative of the first naval battle of the Revolution were held, Aug. 11-13, at Machias, including a reception to the officers of the ship "Machias." In recognition of the name given to the ship, and in commemoration of the early settlers of the town who took part in the battle, a gift was made to the ship by the people of Machias of a massive silver bowl, with date of the battle inscribed on one side, and a picture of the "Margaretta" and sloop "Unity" hauling alongside the war ship, and men leaping on board, all ready to haul down the British flag.

**Blaine Memorial.**—At a public meeting in Augusta, March 14, a Blaine Memorial Association was organized, for the purpose of collecting funds by voluntary subscription for a suitable memorial to James G. Blaine. Provision was made for the appointment of a subscription committee, and a committee of five to be appointed by the officers and the subscription committee, when, in their judgment, sufficient funds shall have been subscribed, this committee of five to be fully empowered to invite designs and proposals for a portrait statue in bronze of Mr. Blaine, and to make final decision, and be authorized to contract for the execution and erection of the work. The statue is to be at Augusta.



**Indians.**—In accordance with the appeal from the Passamaquoddy Indians, mentioned in the "Annual Cyclopædia" for 1892, page 430, the Legislature of Massachusetts passed a resolution requesting the Governor to communicate on the subject of the treaty obligations with the Governor of Maine. In reply to Gov. Russell's letter, Gov. Cleaves said, in part:

For a series of years the Passamaquoddy Indians, so called, have claimed certain rights in the State of Maine not conceded to them by treaty or legislative authority. Our Supreme Court, in the case of *State vs. Peter Newell*, 84 Mo., 463, has held that the Indians resident within this State are not "Indian tribes" within the treaty-making powers of the Federal Government, nor are they in political life or territory the successors of any of the various "Eastern tribes of Indians" with whom treaties were made by the Crown or the colonies, in colonial times, hence they can not effectually claim any privileges or exemption under such treaties.

The report of the Penobscot Indians gives the total number as 386. The schools have met with fairly good success. On Indian Island there have been two terms with an average attendance of about 45. Twenty-five families have been enrolled this year, and have been quite successful in farming.

**The Aroostook Region.**—This great region is being opened to communication by the Bangor and Aroostook Railroad, which reached Houlton in December. The county of Aroostook has an area only a few hundred miles smaller than that of Massachusetts. It has about 50,000 inhabitants, a population considerably larger than it had a decade ago. In spite of the fact that until the beginning of the Bangor and Aroostook road the county had but 29 miles of railroad within its limits, and had to send most of its products into the United States *via* New Brunswick, it yet shipped almost two million bushels of potatoes every season, besides immense quantities of lumber, bark, etc. The Bangor and Aroostook is the longest railroad ever projected under one management in New England.

**Revision of Laws.**—The following were appointed commissioners to revise the laws relating to private and special legislation: Leroy T. Carleton, Franklin A. Wilson, Sewall C. Strout. It is believed that, by the enactment of judicious general laws, future legislatures may be relieved of a very large portion of the private legislation that has heretofore occupied the time of legislative bodies. The commission is required to report at the opening of the next Legislature, with draughts of laws covering the subject-matter.

**Legislative Session.**—The sixty-sixth legislative session began Jan. 4, and ended March 29. When the Governor signed the last bill he had given his signature to 485 acts and 106 resolves.

Hon. Eugene Hale was re-elected United States Senator.

Legislation was enacted affecting many important interests, including payment of taxes, insurance and railroad companies, savings banks, courts, education, manner of voting, and corporations.

The drift of legislation pertaining to taxation seems to have been in the direction of securing for the State an increased revenue from its corporations. A tax of one fourth of 1 per cent. a year is imposed upon the monthly dues paid in

by shareholders in the loan and building associations. A new feature in the tax system is the act for taxation of collateral inheritances. The amount is  $2\frac{1}{2}$  per cent. of the value, above \$500. The section regarding taxation of railroads is so amended, by reducing the amount of average gross receipts per mile that serve as the basis for the graduated tax rate under the old law, that a considerable increase of revenue will be secured. A tax of  $2\frac{1}{2}$  per cent. is assessed upon the value of telephone lines. Express companies are required to pay to the State a tax of  $1\frac{1}{2}$  per cent. on gross receipts.

An unusual number of insurance measures came before this Legislature. By a new law, all contracts of fire insurance shall cover actual loss or damage not exceeding the amount insured. Coinsurance contracts shall state the value of property insured. No company, under penalty of losing its license, not organized in Maine, but doing business here, shall remove any suit or action from Maine courts to United States circuit or district courts, or enter into any compact to govern or control insurance rates.

The savings-bank bill provoked a vigorous contest. It is designed to promote investment in home securities by placing a discriminating tax upon investments in other States. The savings banks fought the measure vigorously, but popular sentiment was too strong for them and carried the day. A new law very carefully prescribes the character of investments that may be legally made by savings banks of the State.

Amendments were made to the Australian system of voting, such as have been shown in the trial of the law to be necessary.

Some changes are made in the laws governing courts.

The most important of the enactments relative to educational matters is that which abolishes school districts and provides for a more efficient system of supervision. The purpose of this law is to secure the more equitable distribution of school advantages. The age of pupils allowed to attend the public schools of the State is fixed between five and twenty-one years. Provision has also been made for free education of deaf, dumb, and blind children at the American Asylum at Hartford, Conn., the Portland School for the Deaf at Portland, Me., and the Perkins Institute, at South Boston, Mass.

In reference to insurance, it was enacted that no foreign surety company, unless it has a paid-up, well-invested capital of \$250,000, shall employ an agent within the State.

A great number of measures important to farmers came before the Legislature. The laws of 1889 relating to the extirpation of contagious diseases among cattle are amended so as to apply to horses and sheep as well, and not generally "to other live stock," as the law read before. One hundred dollars for an animal with pedigree recorded, and \$50 for an animal without recordable pedigree, is now the limit of appraisal by the cattle commissioners of condemned animals. The laws against cruelty to animals are made more stringent than before. A fine of not more than \$100 is imposed for docking horses. An act was passed compelling the licensing of all dogs over four months old in all cities, towns, and plantations of the State. Dogs without license or col-

lar shall be killed, and fines are imposed for keeping such dogs.

A law was passed authorizing and requiring the inspector of factories, workshops, and mines to enforce the laws relating to fortnightly payments and sanitary conditions. A law was passed to protect persons, associations, and unions in their labels, trade-marks, devices, and forms of advertising. No person shall bring into the State, or transport, intoxicating liquors, in violation of the law, under a penalty of a fine of not less than \$50 nor more than \$100, and sixty days' imprisonment.

**MANITOBA.** The provincial Legislature met on Feb. 2, and the following were the members of the Cabinet: Hon. Thomas Greenway, President of the Executive Council and Minister of Agriculture and Immigration; Hon. D. H. McMillan, Provincial Treasurer; Hon. Clifford Sifton, Attorney-General; Hon. J. A. Smart, Minister of Public Works; and Hon. J. D. Cameron, Provincial Secretary. John Jacob Jackson was elected Speaker. Lieut.-Gov. Schultz opened the session with the customary address.

On March 1, Hon. Clifford Sifton, Attorney-General, introduced a motion that the Dominion Government be petitioned to enact a law prohibiting importation, manufacture, and sale of intoxicating liquor as a beverage into or in the province of Manitoba, and it was carried.

The new school act abrogated the previously existing laws legalizing separate schools, and under its provisions Government assistance and grants of public money are only given to what may be called national schools. All teachers must now pass the same examination, and all schools be inspected. Those in favor of the continuance of separate schools supported by public grants appealed against the law to the Manitoba courts, which rendered a decision maintaining its constitutionality. They next appealed to the Supreme Court, which decided the case against the new law, and the Provincial Government then carried the case to the Privy Council, which decided in favor of Manitoba.

The following were the most important measures adopted during the session:

- To amend the liquor license act.
- To incorporate the Winnipeg Industrial Colonization Company.
- To incorporate the Melita Northern Railway Company.
- To encourage the destroying of wolves.
- To incorporate the Winnipeg Canal and Water Power Company.
- To incorporate the Life Assurance Company of Manitoba.

The following are the principal grants of money voted by the Legislature during the session: Administration of Justice, Attorney-General's department, \$17,150; for the Canadian Pacific Railway extension, Pipestone and Glenboro branches, \$87,500; Red River Railway, \$50,000; World's Columbian Exposition, \$66,000; educational grants, \$123,685.38; interest on provincial debentures, half-breed mortgages, and railway bonuses, \$94,398.80; indemnity and mileage of members of Legislature, \$24,800; railway aid and interest (specially authorized), \$98,550; new courthouse, Winnipeg, \$85,000; normal school in connection with Public Works

Department, \$60,000; and to defray the expense of legislation, public institutions, salaries of Government employees, etc., for the months of January and February, 1894, \$80,000.

The session closed on March 11.

**Finances.**—The total revenue of the province for the last fiscal year was \$871,660.04, and the total expenditure, \$1,247,915.75, which, less \$247,571 carried to the debit of various ledger accounts, would leave an expenditure of \$1,000,344.75. Assuming the last figures as being the real expenditure for the year, the excess of expenditure over revenue would amount to \$128,684.71.

**Prisons and Hospitals.**—The total number of prisoners and insane persons received into the jails of the province during last year was 314, being 70 more than for the year before.

**Agriculture.**—Of wheat, the total amount produced in the province was 14,500,000 bushels, or a yield of 16½ bushels an acre; of oats, 11,500,000 bushels, being a yield of 35 bushels an acre; of barley 3,000,000 bushels; potatoes, 2,000,000 bushels; and of turnips, 7,000,000 bushels.

The number of immigrants arriving in Manitoba in the year was 20,016, being an increase of 6,893 over the year before. Among those settling in the province during the time specified, were several parties of Icelanders, who were allotted land on the shores of Lake Winnipeg.

**Education.**—The school population of the province is 29,564; pupils registered under five years of age, 130; from five to twenty-one years, 23,022; over twenty-one years, 94: total number registered, 23,244; average attendance for the year, 12,976. The number of teachers employed was 902, the highest salary paid was \$1,600, the average salary \$490.15. The receipts of the department of education for the year amounted to \$500,227, and the expenditure to \$636,592.

**Fisheries.**—The value of the product of the fisheries of the province for 1892 was \$314,705, being \$50,000 in excess of that for the previous year. The increase was ascribed mainly to the large catch of whitefish—nearly 800,000 pounds.

**Railroads.**—The work in connection with recent railway extension comprised the completion of the road from Deloraine to Napinka, Pipestone branch to Reston, and the Brandon and Souris branch, the latter providing facilities to an excellent farming district and to the Souris coal fields.

**The Mennonite Colony.**—Last year the Mennonite colony of southern Manitoba paid the last of their indebtedness to the Government of Canada. A sum amounting to \$96,400 was advanced to the colonists, most of whom were poor, by the Dominion Government, the repayment of the money being guaranteed by 150 well-to-do farmers of German descent of Waterloo County, Ontario. They met at first with many discouragements, but finally prospered far beyond their most sanguine expectations. What was a few years ago a treeless prairie, without a solitary settler, is now a well-cultivated district, dotted with villages, and the most thickly populated farming section in the Northwest.

**Keewatin.**—The Lieutenant-Governor of Manitoba is also Lieutenant-Governor of the province of Keewatin, an expanse of 400,000 square miles, extending from Manitoba to Hud-



son's Bay. Little of this domain is suitable for agriculture, but it is rich in minerals, timber, fish, and furs. The population of the province is composed almost exclusively of Indians, who live by fishing and the sale of furs. The small white population consists almost entirely of Hudson's Bay Company traders and agents, men engaged in timbering operations, missionaries, and justices of the peace, the latter being specially appointed to administer law in the districts assigned to them. In his last annual report Lieut.-Gov. Schultz mentioned the entire absence of crime in the province during 1892. He reported further that the clauses of the Keewatin act relating to intoxicating liquors had been enforced, and that permits were issued only on paper certificates for sacramental or medicinal purposes. The Lieutenant-Governor also stated that the destruction of their food supplies at many points on the seacoast had driven the Indians inland, where game and fish abound. The practicability of successfully growing barley, oats, northern wheat, and the common vegetables in various sections of the country was also reported.

**MARYLAND**, a Middle Atlantic State, one of the original thirteen, ratified the Constitution April 28, 1788; area, 12,210 square miles. The population, according to each decennial census, was 317,728 in 1790; 341,548 in 1800; 380,546 in 1810; 407,350 in 1820; 447,040 in 1830; 470,019 in 1840; 583,034 in 1850; 687,049 in 1860; 780,894 in 1870; 934,945 in 1880; and 1,042,390 in 1890. Capital, Annapolis.

**Government.**—The following were the State officers during the year: Governor, Frank Brown, Democrat; Secretary of State, E. W. Le Compte; Attorney-General, John P. Poe; Comptroller, Marion D. Smith; Treasurer, Spencer C. Jones; Insurance Commissioner, J. F. C. Talbot; State Tax Commissioner, Frank T. Shaw; Adjutant-General, H. Kyd Douglas; Superintendent of Public Instruction, E. B. Prettyman; Chief Justice, Richard H. Alvey; Clerk of the Court of Appeals, J. F. Ford.

**Finances.**—The report of the Comptroller for the year ending Sept. 30, 1893, shows the balance on hand at beginning of year, \$482,048.46; receipts during the year, \$2,533,611.48; total amount available for 1893, \$3,015,659.94. The amount of disbursements during the year was \$2,446,609.36; leaving a balance, Sept. 30, 1893, of \$569,050.58. The disbursements for the fiscal year 1892 were \$3,065,833.02; deducting the expenses of the biennial legislative session, amounting to \$142,738.77, the ordinary disbursements for 1892 were \$2,923,094.25; the ordinary disbursement for 1893 were \$2,446,609.36. The indebtedness of the State is as follows: Original loans issued of 1886, \$1,898,829.10; original loans issued of 1889, \$3,079,400; original loans issued of 1891, \$706,757.14; defense redemption loans issued of 1892, \$3,000,000. From this deduct the amount of said loans bought and held as sinking funds to meet loans at maturity, \$2,185,706.71; Baltimore city stock and Frederick City bonds owned and held by the State to meet loans (face value), \$715,381.32; and the account will stand: Liabilities, \$8,684,986.24; amount of liabilities held by State, \$2,901,088.03; liabilities not thus provided for, \$5,783,898.21.

**Insurance.**—For the year ending May 31, 1893, the Insurance Commissioner reports insurance business done in Maryland: Fire insurance—premiums received, \$1,881,275.11; losses paid, \$1,143,907.21. Marine insurance—premiums received, \$269,992; losses paid, \$129,960. Steam-boiler insurance—premiums received, \$13,556.83; losses paid, \$779.41. Plate-glass insurance—premiums received, \$5,629.25; losses paid, \$1,058.98. Accident insurance—premiums received, \$94,082.46; losses paid, \$29,810.53. Guarantee insurance—premiums received, \$65,667.74; losses paid, \$2,764.34. Assessment life insurance—premiums received, \$663,781.41; losses paid, \$380,776.08. Premiums received, \$5,897,787.50; losses paid, \$3,249,168.13.

**Taxation.**—The State taxes are levied as follows: For public schools, 10½ cents on \$100; to pay the interest and create a sinking fund for defense redemption loan, 5½ cents; to pay the interest and create a sinking fund for the exchange loan of 1886, one fourth of 1 cent; and to pay the interest and create a sinking fund for the treasury relief loan, 1½ cent; total, 17½ cents on \$100. Although the Treasury Relief loan has been redeemed, the act creating it is still in force, and the tax collected is invested in the several sinking funds.

**Education.**—By the Legislature of 1892 the Maryland School Tax Commission was created, its duty, broadly stated, being to investigate the present method of distribution of the State school tax, to consider what legislation on the subject is needed, and to report to the General Assembly of 1894.

A majority report was prepared, and also a minority report. The minority report stated that, except the adoption of the statistical statements, the only portion of the majority report in which all the commission was able to concur was the statements that they were "unable to agree upon any recommendation for a change in the present method of distribution of the school tax, and that each member of the commission shall have authority to make such recommendation to the Legislature as he may see fit." From the statistical statements of the commission the following figures are taken: Total number of children from five to twenty years of age, 370,892; number of white children in 1892, 226,806; number enrolled in the public schools, 154,635; average attendance, 88,342; number of teachers in white schools, 3,330; amount of salaries paid them, \$1,284,609.66. The number of colored children in 1892 was 68,409; number enrolled, 34,274; average attendance, 17,056; number of teachers in colored schools, 663; amount of salaries paid them, \$190,485.71. The amount of school tax apportioned for white schools for 1892, at about \$1.43 *per capita* was \$418,480.72; the amount apportioned for colored schools at the same rate was \$123,000.

The disbursements for public schools, including the academic fund, for 1893, were \$644,798.16. The total receipts, upon the taxable basis of the State, at 10½ cents on \$100, for 1893, for public schools, was \$591,075.89; balance from 1892, \$256,606.10.

The State Normal School reports that there are 350 students on the roll, and that applications for admission largely exceed the capacity

of the institution. In the Maryland Agricultural College 144 pupils were instructed during 1893, and 69 were refused admission because of lack of accommodations. The entire number enrolled in 1891 was 82. A two-story brick building, 60 by 40 feet, has been erected for a gymnasium and library, and, for the latter, 800 volumes have been secured. The School for the Deaf receives annually from the State \$25,000. The cost of the building was \$225,000. An industrial building was erected in 1892. The present capacity of the school is 150 pupils. The School for the Blind has under instruction about 100 pupils; of these, 74 are free scholars of the State. The entire revenue of the institution for the past year was \$45,455.16, of which amount the State appropriated \$21,000. The entire disbursements were \$33,850. In the Asylum and Training School for the Feeble-Minded the boys are taught the ordinary industries of the farm, and it is intended to erect workshops in which they can be taught certain manual arts. The girls are taught to sew and to knit. The capacity of the building is 64, and there are 51 pupils.

The Hospital for the Insane during the past year treated 549 patients. Its income was \$98,635.52, and its present indebtedness is \$11,584.46.

The Penitentiary is self-supporting, and in addition has contributed to the revenue of the State. Its capacity is about 700, and it now confines 630 prisoners.

The House of Correction has 232 cells, with a capacity for about 300 prisoners. It is intended for the reception of "short-term" prisoners.

The amount distributed to the charitable institutions of the State and to the State prisons during 1892 and 1893 is \$542,757.32.

The Live Stock Sanitary Board expended \$5,997.67 during the year.

**Constitutional Amendment.**—The amendment to the Constitution proposed in 1892, by which power is given to the General Assembly to create an additional judge of the Supreme Bench of Baltimore city, was submitted to the people at the election held Nov. 7, 1893, when 16,507 votes were cast in favor of its adoption, and 8,574 against it. The Governor issued a proclamation, Nov. 24, 1893, that the amendment was adopted.

**Land Office.**—During the two years ending Sept. 30, 1893, 53 patents for land were issued, granting about 9,281 acres, of which quantity about 7,400 acres were vacant; 157 warrants of survey were issued, and of these warrants 67 have been executed.

**Coal.**—During the year, 3,327,749 tons of coal were taken from the mines in Allegany and Garrett Counties. The sixteen companies in this region employ 4,071 men.

**Judicial Decision.**—By a decision of the Court of Appeals, in which all the members concurred, the employment of the "single-tax" system, which has been in operation for more than a year in the town of Hyattsville, has been declared unconstitutional. Hyattsville is almost a part of suburban Washington, and its 1,500 of population is largely made up of people who do business in that city.

In 1886 the Legislature created a municipal corporation under the name of "The Commis-

sioners of Hyattsville." To it was given power to levy taxes, but the rate was restricted to 15 cents on the \$100 of assessed valuation. In 1892 the "single-tax" men secured the passage of an act providing "that the Treasurer and assessors should, in 1892 and biennially thereafter, assess each and every piece of land within said town separately with the improvements thereon, at a fair cash value," and that "the board of commissioners shall levy a tax upon all the property not exceeding 25 cents per annum per \$100 of the valuation." Under this statute the land within the taxable limits of the town was assessed at \$369,709, and the improvements at \$180,000. Personal property was not assessed at all. The commissioners struck from the assessment roll the entire valuation on improvements, and levied a tax of 25 cents on each \$100 of the assessed value of the land. Thereupon sundry taxpayers filed a petition that a mandamus might issue to prohibit the collection of the taxes actually levied, and to compel the commissioners to restore the valuation of improvements to the assessable basis, and to assess and include in it all personal property. The circuit court for Prince George's County dismissed the petition, and from that order an appeal was taken to the Court of Appeals, with the result above stated.

**MASSACHUSETTS**, a New England State, one of the original thirteen; ratified the Constitution Feb. 6, 1788; area, 8,315 square miles. The population, according to each decennial census, was 378,787 in 1790; 422,845 in 1800; 472,040 in 1810; 523,159 in 1820; 610,408 in 1830; 737,699 in 1840; 994,514 in 1850; 1,231,066 in 1860; 1,457,351 in 1870; 1,783,085 in 1880; and 2,238,943 in 1890. Capital, Boston.

**Government.**—The following were the State officers during the year: Governor, William E. Russell, Democrat; Lieutenant-Governor, Roger Wolcott, Republican; Secretary of State, William M. Olin, Republican; Treasurer, George A. Marden, Republican; Auditor, John W. Kimball, Republican; Attorney-General, Albert E. Pillsbury, Republican; Railroad Commissioners, Everett A. Stevens, William J. Dale, Jr., and John E. Sanford; Chief Justice of the Supreme Court, Walbridge A. Field; Associate Justices, John Lathrop, James M. Barker, Charles Allen, Oliver Wendell Holmes, Jr., Marcus P. Knowlton, and James M. Morton.

**Finances.**—The receipts and payments on account of revenue for 1893 were as follow: Cash in the treasury on Jan. 1, 1893, \$6,437,247.05; cash received during the year, \$33,188,466.72; payments during the year, \$30,374,333.67; balance on Jan. 1, 1894, \$9,251,380.10. On Jan. 1, 1893, there were securities in the treasury amounting to \$27,394,717.86. During the year securities valued at \$8,783,197.39 were purchased, while other securities amounting to \$10,238,733.78 were withdrawn, sold, or paid, leaving on hand Jan. 1, 1894, a balance of \$25,939,749.47. The total funded debt on Dec. 31, 1893, exclusive of the armory, Fitchburg Railroad, grade-crossing, and sewerage loans, was \$23,331,415.55, to meet which the State had in its sinking funds \$20,121,616.30, leaving the net indebtedness only \$3,209,799.25. The armory and sewerage loans, and that part of the grade-crossing loan already issued, together amount to \$6,480,000. The Com-



monwealth will not be required to pay the principal or interest of the first two named, and only a percentage of the last, but the bonds representing them are State bonds and form a nominal part of the public debt. The same may be said of the Fitchburg Railroad loan. Of the proceeds of the sewerage loan, amounting to \$5,000,000, there had been expended, up to the close of 1893, the sum of \$4,044,525.82. The receipts from the collateral inheritance tax during the year amounted to \$59,429.31.

**Valuation.**—The total assessed valuation of property in the State for 1893 was \$2,428,339,029; personal estate being assessed at \$588,675,216, and real estate at \$1,839,663,813. Included in the assessment were 4,508,945 acres of land, 383,713 dwellings, 191,178 horses, 234,334 neat cattle, 46,153 sheep, and 27,871 swine. Personal estate in Suffolk County, which includes Boston, was valued at \$219,269,121, and real estate at \$737,498,505. For 1893 a total State tax of \$1,750,000 was levied.

**Legislative Session.**—The regular session of the Legislature began on Jan. 4, and ended on June 10. On Jan. 17, Henry Cabot Lodge, Republican, was chosen United States Senator, to succeed Hon. Henry L. Dawes, the vote being as follows: Senate—Lodge, 29; Patrick A. Collins, Democrat, 11; House—Lodge, 161; Collins, 71. At the Republican caucus held on Jan. 4, Lodge received 147 votes, and William W. Crapo 30. The question of rapid transit in Boston was discussed, and two important measures were enacted with reference thereto. One of these provided for a commission with authority to take land for a subway or an elevated railroad, as the commission should determine. The act was made operative only upon its approval by a majority of the persons voting at a general or special election held in the city for that purpose. At this election, held in December, a majority of the votes opposed the measure. The other act provides that, upon its adoption by the City Council of Boston, the mayor shall appoint a commission, known as the Board of Subway Commissioners, which shall have authority to construct a subway for street railway purposes, extending through Tremont Street from the junction of Tremont and Pleasant Streets to Scollay Square, or near thereto. The city is authorized to borrow not exceeding \$2,000,000 to pay for the construction of such way and to carry out the other provisions of the act. Street railway companies shall be compelled to use such subway upon paying such compensation to the city as the Board of Railroad Commissioners shall deem just. This act was adopted by the City Council, and commissioners were appointed by the Governor late in December.

The franchises heretofore granted to the Cape Cod Ship Canal Company, which were about to lapse on account of the failure of the company to perform the conditions of its charter, were bestowed on a new company called the Old Colony and Interior Canal Company.

After a long investigation into the business and financial operations of the Bay State Gas Company, the legislators decided that it had violated the law in issuing a certain obligation for \$4,500,000, and an act was passed declaring its charter annulled unless such obligation should

be canceled and surrendered within a limited time. Later the company saved its charter by complying with this provision.

By another law, all new issues of railroad corporation stock are to be first offered to the stockholders at the market value thereof, such value to be determined by the State Board of Railroad Commissioners, and all stock not so taken shall be sold at auction to the highest bidder. These requirements are intended to put an end to railroad stock dividends.

Provision was made for winding up the affairs of all those endowment orders doing business under the act of 1888, authorizing the payment of benefits at fixed periods, and the business of such orders was thereafter forbidden.

A day's labor for all persons employed in manual labor for or in behalf of the Commonwealth was fixed at nine hours.

A Metropolitan Park Commission was created, with authority to acquire and maintain for the public benefit open areas of land within a district known as the Metropolitan Park District, embracing the following cities and towns: Boston, Cambridge, Chelsea, Everett, Lynn, Malden, Medford, Newton, Quincy, Somerville, Waltham, Woburn, Arlington, Belmont, Braintree, Brookline, Canton, Dedham, Dover, Hingham, Hull, Hyde Park, Melrose, Milton, Nahant, Needham, Revere, Saugus, Stoneham, Swampscott, Wakefield, Watertown, Wellesley, Weston, Weymouth, Winchester, and Winthrop. Within this district the commission was authorized to acquire land by purchase, gift, devise, or by eminent domain. The sum of \$1,000,000, to be raised by the issue of 4-per-cent. State bonds, was placed at its disposal for the purpose of carrying out the objects of the act. Provision was also made by which each town and city shall pay to the Commonwealth yearly a proportionate part of the interest annually due on such bonds, and a fixed sum for a sinking fund to meet the principal at maturity.

A constitutional amendment relative to the mileage of members of the Legislature, which was proposed at the session of 1892, was approved at this session, and provision was made for its submission to the people in November. Another amendment was proposed for the first time, abolishing the requirement that commissioners of insolvency be elected by the people.

A State tax of \$2,500,000 for the year was apportioned among the towns. A further appropriation of \$25,000 was made in aid of the State exhibit at the World's Fair, and the sum of \$100,000 was appropriated for the extermination of the gypsy moth.

Other acts of the session were as follow:

Authorizing cities and towns to provide free evening lectures.

Incorporating the trustees of the John Greenleaf Whittier homestead.

To regulate the manufacture and sale of clothing made in unhealthful places.

Requiring the treasurers and assistant treasurers of savings institutions to give bonds for the faithful discharge of their duties.

To quiet title to real estate.

To abate the smoke nuisance in cities.

To punish persons falsely pretending to hold degrees from educational institutions.

Revising and consolidating the law governing the volunteer militia.

Constituting ten hours' work in twelve consecutive hours a day's work for conductors, drivers, and motormen on street railways.

To prevent posting of advertisements on trees in the highways.

Codifying and consolidating the laws relating to elections.

Extending the law prohibiting discrimination against persons on account of race or color so as to include barber shops and any other public place kept for hire, gain, or reward.

To protect persons, associations, or unions of persons in their labels, trade marks, and forms of advertising.

To authorize towns to use the McTammany automatic ballot machines at elections of town officers.

To provide for licensing plumbers, and for supervising their business.

To provide for the appointment of a commission to examine and report upon the Norwegian system of licensing the sale of intoxicating liquors.

To provide for a highway commission to improve the public roads.

Requiring the preparation of plans and estimates for a new State prison.

**Education.**—The following public-school statistics cover the school year 1892-'93: Number of children between five and fifteen years, 390,039; number of all ages in the schools during the year, 391,745; average attendance, 290,801; teachers employed—men, 989; women, 10,244; average monthly wages of male teachers, \$140.73; female teachers, \$48.13; number of public schools, 7,510; average length of school year in months, 8.13. During the year 247 high schools were maintained, with 28,582 pupils in attendance, an increase of 2 schools and 1,100 pupils. Evening schools to the number of 244 were supported in 58 cities and towns. The number of teachers employed therein was 1,088; the total number of pupils enrolled, 27,784; and the average attendance, 14,881. The whole amount of money raised by taxation for the support of public schools, including only wages of teachers, fuel, and care of fires and schoolrooms, was \$6,282,141.20, an increase of \$703,190.91 for the year. The amount expended for new schoolhouses was \$1,556,039.40. The expenditures for schools, exclusive of the sum paid for repairing and erecting schoolhouses, was \$7,388,605.29. The total expenditures, including repairs and new schoolhouses, aggregated \$9,468,436.52.

The Industrial School for Girls, at Lancaster, on Sept. 30, contained 112 pupils; the Lyman School for Boys, 238; and the Primary School at Monson (at which neglected and dependent children and those convicted of light offenses are cared for), 209, of whom 148 were boys, 50 girls, and 11 women.

**Charities.**—The following is a summarized statement of the condition of the State charitable institutions: Danvers Lunatic Hospital, patients on Oct. 1, 1892, 863; admitted during the year ensuing, 394; discharged, 388; remaining Sept. 30, 1893, 869; total expenses, \$171,443.24. Northampton Lunatic Hospital, patients on Oct. 1, 1892, 489; admitted, 169; discharged, 178; remaining Sept. 30, 1893, 480; total expenses, \$84,932.25. Westborough Insane Hospital, patients on Oct. 1, 1892, 545; admitted, 340; discharged, 371; remaining Sept. 30, 1893, 514; total expenses, \$111,914.36. Taunton Lunatic

Hospital, patients on Oct. 1, 1892, 698; admitted, 388; discharged, 335; remaining Sept. 30, 1893, 751; total expenses, \$127,954.63. Worcester Lunatic Hospital, patients on Oct. 1, 1892, 891; admitted, 534; discharged, 539; remaining Sept. 30, 1893, 886; total expenses, \$176,251.54. Worcester Insane Asylum, patients on Oct. 1, 1892, 449; admitted, 70; discharged, 65; remaining Sept. 30, 1893, 454; total expenses, \$74,803.28. State Almshouse at Tewksbury, insane department, patients on Oct. 1, 1892, 380; admitted, 157; discharged, 74; remaining Sept. 30, 1893, 463; almshouse department proper, inmates on Oct. 1, 1892, 825; admitted, 3,160; discharged, 2,980; remaining Sept. 30, 1893, 1,005. State Farm at Bridgewater, inmates on Oct. 1, 1892, 788; admitted, 962; discharged, 993; remaining Sept. 30, 1893, 757. Massachusetts School for the Feeble-minded at Waltham, pupils on Sept. 30, 1892, 398; admitted during the year, 101; discharged, 79; remaining Sept. 30, 1893, 420; expenses, \$107,350.01.

**Prisons.**—The number of convicts at the State Prison on Oct. 1, 1892, was 656; during the year following 145 convicts were admitted and 155 discharged, leaving 646 remaining on Sept. 30, 1893. The net cost of supporting the prison during the year was \$154,224.12, a decrease of \$7,790.07 over the previous year. The result of employing prisoners on industries upon the State account was a loss of \$17,202.02 for the year, against a loss of \$8,724.82 for 1892. The total cost of the institution to the State was therefore \$171,426.14. At the State Reformatory in Concord there were 887 prisoners on Oct. 1, 1892; 860 were received during the year ensuing, and 760 were discharged, leaving 987 remaining on Sept. 30, 1893. The current expenses of the institution were \$180,853.09, from which should be deducted \$25,053.55, the profit made upon the labor of prisoners, leaving \$155,799.54 as the net cost of the year. The Reformatory Prison for Women contained 292 inmates on Oct. 1, 1892; 308 were received during the year following, and 288 discharged, leaving 312 remaining on Sept. 30, 1893. The expenditures for the year were \$54,378.05, and the receipts from labor of prisoners and other sources \$20,392.65, making the net cost of the reformatory \$33,985.40.

In all the penal institutions in the State there were 6,408 prisoners on Oct. 1, 1892; 27,649 prisoners were committed during the year following, and 27,022 discharged, leaving 7,035 remaining on Sept. 30, 1893.

**Savings Banks.**—During the year ending Oct. 31 1,101,410 deposits, amounting to \$75,727,471.03, were made in the 185 savings banks of the Commonwealth, and \$15,655,565.81 in dividends were placed to the credit of depositors. During the same period there were 953,053 withdrawals, amounting to \$84,403,075.29, leaving the aggregate amount to the credit of depositors on that day \$399,995,569.81, represented by 1,214,493 accounts, an average of \$329.35 to each account. The total assets of the banks amount to \$424,579,334.38. Compared with the previous year, these figures show a decrease of 73,885 in number of deposits made, a decrease of \$6,808,063.12 in amount of deposits, an increase of 132,915 in number of withdrawals, an increase of \$10,744,837.36 in amount of withdrawals, an increase of



\$1,033,771.24 in dividends, an increase of \$6,-975,707.73 in the aggregate of deposits, an increase of \$8,681,174.94 in total assets, and a decrease of 94 cents in the average to each account.

**Political.**—The Prohibitionists met in State convention at Worcester on Sept. 6, and nominated the following ticket for State officers: For Governor, Rev. Louis A. Banks; for Lieutenant-Governor, Henry C. Smith; for Secretary of State, Samuel B. Shapleigh; for Treasurer, Wilbert O. Farnham; for Auditor, Alfred H. Evans; for Attorney-General, Robert F. Raymond. The usual platform was adopted. A convention of the People's party was held at Lynn on the same day, at which George H. Cary was nominated for Governor, Joseph K. Harris for Lieutenant-Governor, Isaac W. Skinner for Secretary of State, Thomas A. Watson for Treasurer, Maurice W. Landers for Auditor, Conrad Reno for Attorney-General. The platform demands a postal-bank system for deposit and exchange, Government ownership of railroads, telegraph and telephone lines, and a Federal system of coal-mining and distribution; recommends State and National supervision and control of the liquor traffic; protests against municipal contract labor system, and demands that civil-service rules be applied to all public employees; favors a universal workday of eight hours, and full municipal suffrage for women; demands such laws as shall compel the wealthy holders of personal property to pay their share of the taxes, and favors the municipalization of all local utilities, such as furnishing of gas, electricity, water, street railway transportation, etc.

The Democratic Convention, held at Boston on Sept. 27, placed in nomination the following candidates: For Governor, John E. Russell; for Lieutenant-Governor, James B. Carroll; for Secretary of State, James W. McDonald; for Auditor, John T. Wheelwright (who declined the nomination, and was succeeded on the ticket by Bordman Hall); for Treasurer, Eben S. Stevens; and for Attorney-General, Charles S. Lilley. The platform favors the election of United States Senators by direct vote of the people, and contains the following declaration:

The Executive Council should be abolished, and the power of confirmation should be vested in the Senate. The Governor should appoint all purely executive officers, and have full power of removal, so that such officers and the members of commissions may be under his control, in order that coherent administration of State affairs and responsibility to the people may take the place of our present chaotic and irresponsible system.

We call attention to the subserviency of the Republican Senate of the last Legislature to corporate influences, and particularly to its refusal to prohibit corporations enjoying special franchises from issuing, directly or indirectly, watered stock or other representatives of value for which an insufficient equivalent has been paid in. We demand a more rigid enforcement of existing laws relating to the capitalization of corporations, the enactment of further laws against stock watering, and the passage of measures tending to secure to the community a full return, by taxation or otherwise, for all special privileges or franchises.

We favor the adoption in this Commonwealth of some plan of referendum by which important acts of the Legislature can be submitted to popular vote.

We favor the adoption in this State of substantial taxes upon legacies and successions, both direct and collateral.

The Republican State Convention met in Boston on Oct. 7. There had been an interesting contest in the primaries between the friends of Attorney-General Pillsbury and ex-Congressman Frederic T. Greenhalge, in which the latter appeared to be the more successful in securing delegates. Before the convention was held Mr. Pillsbury withdrew, and Mr. Greenhalge was nominated for Governor by acclamation. Lieutenant-Governor Wolcott, Secretary of State Olin, and Auditor Kimball were renominated. For Treasurer, Henry M. Phillips was nominated, and for Attorney-General, Hosea M. Knowlton. Upon State issues the platform contains the following declarations:

The free school is the great bulwark of freedom. We will stand by it, no matter who shall assail it. Free public libraries, relief to the honest poor, succor to the unfortunate and helpless, the rescue of the wayward, the amelioration of the conditions of living among the toiling masses, all these shall have our constant support. We favor every practical measure that shall diminish intemperance, disorder, and crime. The Republican party will have no common interest with the saloon or the groggery. It will not recognize their right to dictate nominations or policies. We call for vigorous laws that shall bring severe penalties upon every offender against purity and honesty in elections.

The expediency of levying a tax upon legacies and successions was first commended to the attention of the General Court by a Republican Governor. We favor amendment to the existing law that will reach all bequests and inheritances, direct or collateral.

We believe that corporations which receive public privileges and valuable franchises from the people should be compelled to render good service to the public at reasonable rates based upon an honest capitalization, and that stock watering and all other kindred schemes of fraud in such corporations should be strictly prohibited by law.

We believe in frequent appeals to the people, and that, on important matters of legislation and under reasonable restrictions, some proper system of initiative and referendum may be wisely adopted, especially in such matters as refer to local self-government.

After a short but earnest canvass, in which national issues bore the leading part, the Republican ticket was elected in November by unusually large majorities. For Governor, Greenhalge received 192,613 votes; Russell, 156,916; Cary, 4,885; Banks, 8,556. There was also a Socialist Labor ticket in the field, headed by George E. O'Neill for Governor, who received 2,033 votes. Members of the State Legislature were chosen at the same time as follows: Senate—Republicans 33, Democrats 7; House—Republicans 183, Democrats 56. The constitutional amendment relative to the mileage of members of the Legislature was adopted by a vote of 125,375 in favor and 80,855 against it.

**Special Election.**—The selection by the Legislature of Congressman Henry Cabot Lodge as successor to United States Senator Henry L. Dawes, caused a vacancy in the Seventh Congressional District, to fill which Gov. Russell called a special election for April 25. The Republicans nominated William E. Barrett; the Democrats, William Everett; the People's party, George H. Cary; and the Prohibitionists, Louis A. Banks. Although this was a strongly Republican district, the Democratic candidate was elected by 34 votes. The official vote stood: Everett, 9,733 votes; Barrett, 9,699; Cary, 1,001; Banks, 602.

**METALLURGY. Iron and Steel.**—Experiments of H. S. Dyer on the production of pure iron in the basic furnace were made with the object of obtaining such an iron in order to determine the value of alloys. By working on the lines that he followed, the author hopes that pure iron and steel may be produced at reasonable cost. In the first experiments the furnace was charged in the ordinary manner with pig and scrap of fairly good quality, and the charge was worked slowly, care being taken, by liberal additions of limestone, to keep the slag well saturated with lime. The phosphorus was reduced during the process, but the result left much to be desired in other respects. Charges composed of from one half to four fifths of good scrap, and one half to one fifth of good Swedish pig, were then worked very quickly, and a remarkably pure iron was obtained. The next stage of Col. Dyer's experiments had for their object the utilization of ordinary scrap steel and the production, in the basic furnace, of steel high in carbon and low in phosphorus, and at the same time to decrease the wear and tear of the furnace. The principle of the process consists in melting scrap with carbonaceous material. The results of the experiments showed that when a pure carbonaceous material and ferro-manganese free from phosphorus can be obtained, there will be no difficulty in producing a pure carbide of iron containing only sufficient manganese for forging.

As the result of a wide series of experiments, the Valentine Iron Company, Bellefonte, Pa., has determined as the range within which the pig iron should run, varying somewhat for light or heavy work: Silicon, 2.50 to 3.75; graphite carbon, 2.75 to 3.25; combined carbon, 0.25 to 0.75; manganese, 0.30 to 0.70; phosphorus, 0.40 to 0.80; sulphur, not more than 0.06 per cent. Some of the finest machine borings the company has ever seen, obtained from a sewing-machine company, showed the analysis of the casting to be: Silicon, 2.82; graphite carbon, 3.36; combined carbon, 0.16; manganese, 0.67; phosphorus, 0.60; sulphur, 0.05 per cent.

Metallurgical experts, searching for methods for the removal of sulphur from iron, have tried many processes, but abandoned most of them. All are based on the use, in one way or another, of alkaline or basic materials. In the method described by Mr. Stead and Mr. Sauter before the Iron and Steel Institute, calcium chloride is the purifying material in admixture with iron, and the process is adapted either for purifying fluid iron or pig iron direct from the blast furnace. The fluid metal is run into a ladle having a layer of the purifying materials at the bottom, and afterward running the metal into pigs or plate metal for subsequent use in the puddling process; or the crude sulphury pig may be treated in the basic Siemens furnace or Bessemer converter with the desulphurizing mixture. About 70 per cent. of sulphur can be removed from the charge of metal in an open-hearth furnace by this process, which is in practical working at Wigan.

To the numerous ferro-compounds, in which the qualities of iron are modified by mixture of such substances as silicon, chromium, aluminium, etc., H. N. Warren has contributed a research on

boroneisen, or boron iron. Prepared by mixing solutions of borax and ferrous chloride and reducing with carbon, a boron iron having from 4 to 5 per cent. of boron breaks with the fracture of metallic manganese, is hard enough to scratch glass readily, is soluble with difficulty in acids, and has a melting point approaching that of cast iron. A more economical method of preparation is by reducing ferric carbonate or oxide in admixture with boron oxide and charcoal. The most peculiar property of the compound thus obtained is its great predominance when in admixture with large quantities of iron. One ounce of the boride thus melted with about two pounds of iron causes the whole to break with almost an analogous fracture to that of the boron compound itself, while it contains only the fraction of a percentage of boron. The boron iron thus produced casts more soundly, expands slightly, and is free from blowholes.

Trials have been made during the past two or three years, with the most satisfactory results, of armor plates and projectiles hardened or supercarburized by the Harvey process. This invention of H. A. Harvey, of Orange, N. J., is essentially a cementation process, in which the steel is treated under special conditions. The armor plate is made either from a steel comparatively low in carbon, or a high-carbon nickel steel, and is laid flat upon a bed of finely powdered dry clay, deposited upon the bottom of a fire-brick compartment erected within the heating chamber of a furnace. The treating compartment is then partially filled up with granular carbonaceous material, which, having been rammed down upon the plate, is covered with a stratum of sand, upon which is laid a covering of fire bricks. The furnace is then raised to an intense heat, which is kept up for such time as may be required for the absorption by the metal adjoining the upper surface of the plate of the quantity of carbon, in addition to that originally present, which may be necessary to enable the metal to acquire the capacity of hardening to the desired degree. After the carburizing treatment the plate is taken from the furnace, and without removal of the carbonaceous material from its surface is allowed to cool down to the proper temperature for chilling. During the cooling operation the carbonaceous material protects the hot supercarburized surface from the air, and thus prevents the formation of scale, which, if present, would interfere with the subsequent hardening of the metal. When the supercarburized surface is so far cooled down as to have a dull cherry-red color, the carbonaceous material is quickly removed, and the plate is then chilled by being sprayed with cold fluid, or by being submerged and kept in motion until cold in a large body of cooling fluid. Certain difficulties in the practical operation of this process, arising out of the disposition of powdered charcoal to fly off in dust, are obviated by a modification introduced by Mr. Harvey, in which the carbonaceous treating bed is formed partly of finely powdered wood charcoal and partly of animal charcoal.

In a process for mottling iron, recently introduced, the iron particles to be case hardened, having been cleansed, are brightly polished and then placed in an iron box and covered either



with bone dust or old leather that has been burned. The box is next placed in a brisk fire and allowed to remain about one hour, or until no doubt is left that all parts of the iron are heated to redness. The contents of the box are then dumped quickly into water. This operation requires great care, as the air must not strike the iron before it reaches the water. Special apparatus and practice are necessary to give the iron the desired blue-gray mottled color, for if the air touches the iron it assumes a black or blue-black streaked hue accordingly as the experiment is more or less imperfect. After the case-hardened iron is cooled it is varnished.

A new process for enameling iron, introduced by M. O. de Rochefort Lucay, depends upon a chemical action which can be produced upon iron with the aid of another metal. The operator causes a thin adherent pellicle of another metal to be formed on the iron or casting, and exposes it to a heat of 1000° C. in a current of a gas having oxidizing properties. The oxygen penetrates the pellicle and forms a magnetic oxide. This oxide increases as the exposure to the oxidizing current and the heat is continued, forming deeper within the metal as long as the process is kept up. The pellicle of metal first deposited disappears, forming oxides which combine with the magnetic oxide, or being volatilized according to what metal is employed. Bronze has been found by M. Bertrand to be the best metal for this purpose, and the electric process or the dip bath with sulpho-phenic acid the best method of effecting the deposit.

An ironmaster of Wolverhampton, England, has patented a process for removing the coatings from waste tinned and galvanized iron and considerably increasing the value of the iron, which is usually of good quality and capable of standing a high tensile strain.

An abstract of five series of tests made at the Massachusetts Arsenal to determine the effect of temperature on iron indicate that the strength of steel is greater at about 500° F. than it is at 79° F. The tests were made with five different qualities of steel, containing, respectively, 0.09, 0.20, 0.31, 0.37, and 0.51 per cent. of carbon, and the percentage of strength was obtained by dividing the tensile strength of a sample at the given temperature by the strength of the same quality of steel at 70°. The specimens were stronger in the neighborhood of zero, Fahrenheit, than at ordinary temperatures—all of them showing a minimum of strength at 210° F., or thereabouts, and a maximum of strength at about 550° F.

The new electric process for welding iron, of Mr. Julien, of Brussels, is based upon the fact that if one pole of a source of electricity is plunged into acidulated water, or water having in it a salt solution, and a sufficiently strong electric current is passed through, oxygen is given off at the (lead) anode, and hydrogen at the (iron) cathode. By increasing the current the evolution of gas can be augmented to such a degree that the iron bar, surrounded by hydrogen, is no longer in contact with the solution. As, however, the hydrogen "envelope" offers great resistance to the passage of the current, considerable heating takes place, whereby the "envelope" and the iron bar are brought to a white heat or

glowing condition. In this way temperatures up to 4000° F. can, it is said, be attained.

C. B. Adams, of the Wabash Railroad, has observed that after removing some main-line rails and relaying them on another part of the road, many of them gave out immediately, while others manifested no signs of wear. An investigation of the matter showed that the road from which the rails had been removed was built in a northwest to southeast direction, and that, in relaying, a large number of rails had been turned end for end. Those that had not been so placed exhibited no additional loss by attrition, while the turned rails succumbed in from thirty to ninety days. The conclusion was that the metal had been polarized from long use when first laid, and that the fiber was broken up by the traffic in the opposite direction from that in which it had been formed. It was also found that cast-iron wheels generally yielded twice the mileage when the cars were turned at each end of the journey than when they were run backward and forward.

L. J. D. Halter has produced a new kind of steel which is characterized by its specific composition, and is more especially adapted for the manufacture of springs of all kinds. It is claimed that springs made of this steel are capable of supporting, without permanent set, much heavier loads than springs now in use. The following are the component parts of the steel:

Silicon .....	1.8 to 2.2	per cent.
Carbon .....	0.35 to 0.45	"
Manganese .....	0.45 to 0.55	"

The process of manufacture remains practically the same as for ordinary steel, the proportion of the ingredients alone being varied. The metal is tempered at a higher temperature than usual—i. e. at from 900° to 1000° C.

To increase the yield of steel in the Bessemer and Siemens processes, J. Colley and T. Twynam utilize some of the excess of heat and the heat giving metalloids in the pig iron to be converted for the direct reduction of iron oxides, which oxides are thereby converted into steel simultaneously with the pig iron.

M. Sergius Kern concludes that the best reducing addition for steel castings is silico-spiegel with 10 per cent. of silicon and 12 per cent. of manganese. After casting, the products should contain from 0.25 to 0.30 per cent. of silicon. Mr. J. W. Spencer, of the Newburn Steel Works, made experiments to the same end, almost simultaneously with M. Kern, and arrived at nearly identical results. Aluminium was found to be an excellent reducing agent, decomposing the oxides and giving a metal without blowholes. But in castings of 165 to 250 kilogrammes it yields a crystalline structure which is defective. The presence of this metal increases the resistance to breakage.

In a new method, employed at Birmingham, England, for making weldless cold-drawn steel tubes suitable for bicycle-making, and other machine work where strength, lightness, and accuracy are required, the steel used is of special quality, and is received from the steel works in the form of sheets. Circular flat disks are next cut out of the sheets; these disks are pressed into the form of shallow cups, which are then passed successively through dies of decreasing diameter,

so as to reduce the diameter and increase the length of the cups until the flat disks of steel have assumed the form of tubes of the required lengths, with an end closed, to be cut off after the final drawing operation has been performed. The tubes are produced of sizes from  $1\frac{1}{4}$  inch to one sixteenth of an inch in diameter, are parallel inside and outside, and are concentric.

The following process for welding steel is recommended in Germany: Heat in an iron vessel 64 parts of borax, 20 parts of sal-ammoniac, 10 parts of ferrocyanide of potassium, and 5 parts of colophony, all pulverulent, together with some water and a spoonful of brandy. Stir well; let cool in the vessel, and then stamp to a powder. The steel pieces to be welded are brought to a bright-red heat at the weld points, and the process is then conducted in the usual way with the help of the powder.

The Coffin process for annealing steel, in use by the Cambria Iron Company, it is claimed, produces the important effect of materially raising the elastic limit of the metal without decreasing its ductility or ultimate strength.

In his method for tempering steel by electricity, Capt. Lagrange, of the Belgian army, uses the piece of metal as the negative electrode. The temperature of the surface rises very high; the passage of the current is interrupted. By this method, the inventor claims, particular parts of a specimen may be tempered.

A French manufactory, the Acières de Saint-Denis, is offering tools and mechanical pieces generally manufactured according to a method and with machinery permitting the supply in ingot steel (*acier fondu*) of articles which hitherto have been made of steeled iron or cemented cast iron. With ingot cast steel (*acier fondu coulé*) having for base a central substance, finished iron only, to the exclusion of crude iron or steel, the Acières obtain an ingot steel the fluidity of which permits the manufacture by casting in pieces or tools of a weight inferior to 15 grammes. This steel, owing to its homogeneity, has a maximum density. It can be tempered, like any other ingot steel.

**Gold and Silver.**—In assays of gold bullion, T. K. Rose observes, the amount of copper or silver contained in the assay piece very considerably influences the "surcharge" or difference in weight between the gold originally present in the assay piece and the result finally obtained. The presence of antimony, zinc, tellurium, iron, or nickel reduces the surcharge by quantities which the author has determined. It therefore follows that to insure accuracy check assays must be made on alloys of the same composition as those under examination. Variations in the surcharge are also caused by changes in temperature of the muffle furnace used in cupellation.

The peculiar feature of the cyanide-gold extraction process of Mr. W. Hannay is the stirring up the ore in an electrolytic cell with a carbon anode and necessary cathode.

In the method devised by William Beitel for treating the slimes formed under the action of the cyanide-gold process, a mass of the slimes is mixed with 50 per cent. of its weight of the double cyanide of manganese and potassium, mixed with ordinary cyanide solution. While in a state of suspension the mixture is charged into a filter

press under pressure, water is forced through, and the gold-cyanide solutions are thoroughly washed out. The forcing of water is continued until the escaping fluid does not show an alkaline reaction.

The gold ore concentrator of F. W. Grey and W. Marsh is provided with an outlet which is adjustable relatively to the inlet, and also with means whereby the capacity or area through which the ore passes can be varied. The concentrator may consist of a vessel preferably of an inverted conical or pyramidal form, within which is placed a box of corresponding form, so as to leave a space between the latter and the interior of the outer vessel. This space is made adjustable to suit various classes of ores being treated. The ore, mixed with the necessary amount of water, is introduced at one end of the space, say the bottom, and passes up toward the outlet.

Discussing the limits of accuracy of the analysis of gold bullion, T. K. Rose observes that if attention be paid to the certain causes of error which he points out, the gold in bullion of a high degree of purity can be determined within a range of  $\pm 0.02$  per 1,000, the limits of accuracy having been previously considered to be  $\pm 0.10$  per 1,000. This extreme degree of accuracy is possible only if the check gold be pure. The losses of gold in bullion assaying are due to absorption by the cupel, volatilization in the muffle, and dissolution in the parting acid. The losses found in a number of assays, the results of which are given, range from 0.44 to 0.64 parts per 1,000. Concerning the loss by volatilization, it was found that an increase takes place when the temperature is high, pure gold losing four times as much at  $1245^\circ$  as at  $1090^\circ$ : that a large amount of gold is volatilized in an atmosphere mainly consisting of carbonic oxide, while a small amount is lost in coal gas; that a comparatively small amount of gold is carried away by the more volatile metals, copper appearing to exert an exceptional action; metals which are easily volatilized do not appear to be completely driven off by the highest temperatures attained in the experiments; and that a large proportion of gold is lost in the case of alloys that form flat buttons on the cupel, and conversely, a small proportion is lost from spherical buttons, although the surface actually exposed is greater in the latter case than in the former. A current of air or gas passing over the buttons does not seem to increase the loss, provided the surface of the molten metal remains at rest. These results point to the conclusion that the conditions which lower the surface tension of the gold button simultaneously raise the vapor pressure of the gold. Prof. Roberts-Austen observed, in the discussion of the paper in the Chemical Society of London, that he and his two colleagues in the assay office of the British mint had made in the past year 30,000 assays of gold, and they had every reason to believe that their average accuracy was  $\frac{1}{10000}$  part.

Rich argentiferous ores containing blende are treated by J. David in such a manner as to increase the yield of silver and promote the recovery of the zinc while lessening the cost of treatment. The ore is reduced to a fine powder and mixed with a boiling solution of chloride of iron (a waste product from tin-plate works), to which are added hydrochloric acid and oxidizing agents. The sulphide of zinc is then decomposed, the zinc



being dissolved as a chloride and the sulphur set free, when the ore is ready for calcination.

For certain special economical reasons the higher grade sulphide ore is treated at Broken Hill, New South Wales, by the roast reduction process direct. The ore treated contains from 30 to 35 per cent. lead, 18 to 25 per cent. zinc, 10 per cent. iron, 10 per cent. gangue, and from 26 to 30 ounces of silver per ton. The roasting is carried on at a low temperature, with no attempt to sinter. The roasted ore is smelted with about one fourth its weight of carbonate ore, together with the proper proportion of fluxes and old slag to form a fusible slag and to render the charges permeable by the blast. Slags of various types were produced, some of which contained as much as 20 per cent. of oxide of zinc, and were fusible. Of the various types tried up to the present time that which has given the best results is a basic slag having the following composition: Silica, 24 per cent.; oxides of iron and manganese, 36 per cent.; zinc oxide, 16 per cent.; lime, 16 per cent. This runs well even if the sulphide of zinc should go a small proportion more than is shown above. It is fairly clean so far as its lead and silver contents are concerned, and it separates from zinciferous matter as well as other types of slag.

For estimating gold and silver associated with antimony, Ernest A. Smith mixed 500 grains of the metal crushed to a fine powder with litharge, 1,000 grains, potassium nitrate, 200 grains, and sodium carbonate, 200 grains, and heated in a wind furnace at a dull-red heat for about fifteen minutes. When quite tranquil the contents were poured into an ingot mold, and the button of lead, which weighed about 500 grains and was perfectly malleable, was cupeled direct. The resulting gold-and-silver button was parted with dilute nitric acid in the usual way.

To estimate the gold and silver in metallic bismuth, 500 grains were carefully cupeled, and the buttons of precious metals thus obtained were parted in the usual manner. The bismuth may be extracted from the cupels by rejecting the white portion, and crushing the stained portion to a fine powder and fusing at a red heat with fluxes.

**Aluminum.**—By the Hall process for preparing aluminum the price of that metal has been reduced from \$15 per pound to 50 cents per pound, making it, bulk for bulk, as inexpensive as copper and cheaper than nickel or tin. With it, working on a large scale, it is estimated that the cost of making pure aluminum can be brought down to 17 cents per pound. The process consists in reducing the oxide of aluminum by dissolving it in a fused bath consisting of a fluoride of aluminum together with a fluoride of some other metal more electro-positive than aluminum, and precipitating the metallic aluminum from this ore by electrolysis. The fused fluoride bath remains practically constant, and therefore costs but little. The ore is dumped into it, and, upon dissolving, the metal is immediately electrolyzed out by the current at the negative pole, and falls to the bottom of the pots. These are tapped or ladled out without disturbing the operation of the process, which is therefore continuous, and the purity of the metal thus obtained is higher than has ever been

attained by any other process. This process is identical with that of Héroult, which is carried on at Neuhausen, on the Rhine, in Switzerland.

In a paper on the industrial preparation of aluminum M. A. Ditte says that the alkaline aluminates are decomposed by water, and even in the presence of an excess of alkali the introduction of a few crystals of aluminum hydrate into the solution suffices to prevent the establishment of equilibrium and to effect the decomposition of the aluminate. The rapidity of the reaction may be increased by stirring. In the industrial process of obtaining aluminum from bauxite these crystals are provided by adding to the sodium aluminate a little of the deposit obtained by treating it with carbon dioxide in the cold, a deposit which consists of crystallized aluminum hydrate. The gelatinous hydrate has no such effect. The alumina precipitated is very pure. Substances such as silica and phosphoric acid, dissolved out of the bauxite by the caustic soda employed, remain in solution.

Files are now made containing a small portion of aluminum mixed with the file steel. It is claimed that this causes a great change in the character of the steel. It renders the steel softer when the file is cut, so that the teeth are much cleaner and more evenly cut than with the ordinary file; and when the file is hardened it gives the metal a toughness and hardness previously unknown, so that the result is a file that will do more work and with less clogging than the ordinary tool.

L. Grabau has devised a process for supplying aluminum fluoride in a sufficiently pure state at a cheap rate, so that it can be advantageously employed for the manufacture of aluminum. It consists in the employment of hydrofluoric or hydrofluosilicic acid with clay. Pulverized calcined clay, or kaolin, as poor in iron as possible, is introduced into dilute hydrofluoric or hydrofluosilicic acid with continual stirring during the process. At the end of the reaction the mass is neutralized, so that a drop of it forms a pure yellow color with tropæolum. A solution of aluminum fluoride is thus obtained free from silicic acid.

A method of coating aluminum with other metals, described by Prof. Neesen, of Berlin, consists in dipping the aluminum in a solution of caustic potash or soda, or of hydrochloric acid, until bubbles of gas make their appearance on its surface, whereupon it is dipped into corrosive sublimate to produce amalgamation. After a second dipping into caustic potash till bubbles of gas are evolved the metal is placed in a solution of a salt of the desired metal. A film of the latter is rapidly formed, and is so firmly adherent that in the case of silver, gold, or copper the plate can be rolled out or polished. When coating with gold or copper it is well first to apply a layer of silver. When thus treated the aluminum may be soldered with ordinary solder.

In the new method of Herr Bornträger for the separation of iron and alumina both hydroxides are precipitated together, ignited, and weighed as oxides. They are then redissolved in hydrochloric acid, rendered almost neutral with potash lye—not soda—and both oxides are then reprecipitated with neutral liquid potash soap. After filtering, the potassium chloride is

removed by washing with water, and the filter having been dried the iron oleate is run off with hot petroleum.

The peculiar adaptability of aluminum for the construction of roofs for train sheds and other similar purposes is pointed out by Alfred E. Hunt. Sheet aluminum can be furnished with a tensile strength fully equal to that of sheet copper; it can be bent and flanged readily, and can be fastened together in the same way copper sheets are. The metal is not acted on severely by salt water, and in an experiment made on a sailing vessel at sea a copper sheet corroded more than one of aluminum under equal exposure by immersion. Barnacles, however, seem to thrive on the aluminum plates. Mr. Hunt has also tested aluminum in contact with gases from locomotives, and finds that it lasts remarkably well, being in this respect better than copper, and far superior to iron. It is, however, not advisable to use soldered joints either with aluminum or copper plates, because of the expansion which the metal suffers, which would soon cause the joints to leak. The galvanic action of aluminum with other metals should also be considered when the question of using it arises.

The following solders for aluminum are recommended by J. Novel: No. 1, pure tin; melts at 250°. No. 2, pure tin 1,000 parts, fine lead 50 parts; melts at from 280° to 300°. No. 3, pure tin 1,000 parts, pure zinc 50 parts; melts at from 280° to 300°. These three solders may be used in the manufacture of aluminum trinkets. For the following two solders the soldering iron should be made of pure nickel; no. 4, pure tin 1,000 parts pure copper, 10 to 15 parts; melts at from 350° to 450°. No. 5, pure tin 1,000 parts, pure nickel 15 parts; melts at from 350° to 450°. No. 6, pure tin 900 parts, pure copper 100 parts, bismuth 2 to 3 parts; melts at from 350° to 450°, and is recommended for soldering aluminum bronze.

The essential features of a new system of electroplating with aluminum, according to the "London Electrical Review," are: A solution of ammonia alum in warm water is prepared, containing 20 per cent. of alum. To this is added a solution containing about the same quantity of pearlash and a little ammonia carbonate. The mixture results in effervescence and in the deposition of a precipitate. The latter is filtered off and well washed with water. A second solution of ammonia alum, containing 16 per cent. of alum and 8 per cent. of pure potassium cyanide, is now prepared warm and poured over the precipitate previously obtained, the mixture being then boiled for thirty minutes in a closed iron vessel, jacketed to insure uniformity of heating. At this stage about 20 kilogrammes of water are added, and about 2 kilogrammes more of potassium cyanide, and the whole is kept boiling for about a quarter of an hour. The liquid is then filtered from the precipitate, and is ready for use in the electrolytic bath.

**Copper and Tin.**—In the process formerly used for depositing metal in making seamless copper ware, the product was of a crystalline porous nature, and wanting in the qualities of smoothness, tenacity, ductility, and density. It could therefore be used only as thin deposits, such as electrotyping or coating inferior or cor-

rosive articles. In a new process, adopted at Springfield, Mass., the copper is acted upon by a heavy pressure during deposition, so that every thin film is treated separately.

A curious change was observed to have taken place in the brass condenser tubes of a certain steam vessel after they had been in use rather more than twelve months. The metal was in many places converted into almost pure copper of a spongy texture, while the zinc of the alloy had disappeared. The probable cause of the failure was found to have been an electrolytic action between the tin lining of the tubes and the brass, in which the sea water circulating through the condenser formed the electrolyte. Had the tin coating remained perfect, doubtless no corrosion would have resulted; but the sand and grit conveyed in suspension through the condenser carried away the tin coating in spots, and it was at these points that the transformation of the metals occurred. If the pipes had not been tinned at all they would probably have remained intact.

On passing a current of gaseous chlorohydric acid through the refuse of copper-bearing pyrites, heated to a certain temperature, Messrs. Blattner and Koestner found that the acid combined only with the copper, thus making it soluble in water, while a notable proportion of it was decomposed by the action of the pyrites, setting free chlorine. This process, if it can be carried out on a commercial scale, will make it possible to extract all the copper remaining in the pyrites, and will serve also for the production of chlorine.

An experiment by the Arizona Copper Company for the extraction from the tailings from its concentration mill, by means of a sulphuric-acid leaching process, of the copper contained in them, is said to have given such satisfactory results as to warrant the practical adoption of the process.

To recover copper and nickel from mattes containing also iron, J. Strap treats the matte so that the copper is first separated. The residue is then cleared from iron and the nickel deposited from it.

In order to recover tin from tin-plate scrap, J. F. Duke and F. Redman take advantage of the fact that tin has a greater affinity for lead than for iron. The plate is compressed to a compact mass, and then heated to a temperature somewhat exceeding the melting point of lead, after which molten lead is poured into the vessel so as to cover the tin plate. The heat being maintained, the lead and tin become alloyed with one another. The alloy which does not adhere is then run into another vessel containing a charge of tin plate heated to the melting point of lead, and so successively through a series of, say, six vessels. More molten lead is then run into the first and through the six vessels, so as to reduce the proportion of the tin in the scrap, and a number of charges—six, for example—are run through the vessels. The alloy of lead and tin obtained from the last vessel can be used as solder or for other purposes, or the two metals can be separated.

By the process of M. Lambotte, of Brussels, for recovering tin from clippings of tinned iron, the clippings are introduced into a vertical cylindrical furnace which is surrounded by a spiral. Air charged with chlorine gas passes through the spiral, where it is heated by the chemical action going on within the furnace, and, entering



the furnace below, passes through the clippings. The tin is attacked and stannic chloride is formed, which volatilizes, and is subsequently collected upon condensing surfaces moistened with a solution of the same chloride. The iron is not attacked, and when entirely cleaned from tin is removed from below, and again used.

A method has been invented in Germany of covering tissues of cotton yarn with a flexible and brilliant deposit of tin. A clear paste of commercial zinc powder and white of eggs is first spread on the textures with a brush. The coating coagulates in drying. The tissue is then placed in a bath of perchloride of tin, and that metal is precipitated on the zinc. The article, after rinsing and drying, is calendered, whereby a luster is imparted to the tin.

**Lead.**—In a paper read before the Royal Society, J. B. Hannay said that the metallurgy of iron had obtained complete elucidation during the last twenty years, and that of copper was pretty well known, while the chemists of the mint, notably Roberts-Austen, had made the metallurgy of the precious metals their special study; but the fourth great domain of metallurgy, that of lead, was still in the empirical stage. Mr. Hannay proceeded to describe several new volatile compounds of lead, the discovery of which, he said, gave the key to the solution of many of the difficulties which had hitherto beset the investigator. One process consisted in passing a stream of air through the lead ore in a Bessemer converter, by which means all the ore was converted into pig lead, or litharge, or sulphate of lead, as might be required. The oxidation of the ore supplied all the heat required to conduct the process, so that no fuel was needed. The importance of this process, Mr. Hannay affirmed, might be judged from the fact that, besides obtaining all the lead as finished product without loss, against a 20-per-cent. loss by the old method, every ounce of silver was collected and separated without expense, no matter how little of that metal might be present.

As to whether pure or alloyed lead is best able to withstand the attacks of sulphuric acid, Dr. Lunge, after experimenting with various alloys, concludes that: 1. There is no difference in the cold between the actions of sulphuric acid on pure and antimonial lead, when the admixture of antimony does not exceed 0.2 per cent.; a lead of the following composition—Sb 1.81 per cent., Cu 0.05 per cent., Bi 0.01 per cent., Fe 0.01 per cent., Sn 0.04 per cent., As 0.10 per cent.—was more strongly attacked than pure lead, in contrast to the general supposition that antimonial lead is better able to withstand the attacks of sulphuric acid; when the acid is warm, the difference in favor of pure lead is more marked. 2. The action of nitrous vitriol is in all cases stronger when air has access than when not, and is always greater than that of pure vitriol. 3. The addition of a small percentage of copper to the lead does not increase its power to resist the attacks of sulphuric acid when the temperature is below 200° C.; when the temperature is above 200° C. the addition of 0.1 to 0.2 per cent. of copper is advisable, though its effect is not very marked.

The Roessler-Edelmann process of lead desilverization consists of two parts—desilverizing the lead by means of an alloy of zinc and

about 0.5 per cent. aluminium, from which results refined lead on the one hand, and a homogeneous zinc-silver alloy on the other, and working up the zinc-silver alloy to refined silver and refined zinc. Simplicity and saving of time, labor, and material are claimed for it.

**Nickel.**—In a series of experiments in casting and forging nickel at Altona, under the direction of a German industrial society, it came out that pure nickel without addition of magnesium was porous and irregular in fracture—which was yellowish gray—and would not forge well; that for the production of a useful nickel the addition of some magnesium is necessary; and that aluminum can not replace the magnesium.

In C. C. Bartlett's method for separating nickel, primarily in the form of a sulphate, from copper contained in certain nickeliferous copper ores, the ores or mattes are mixed with ordinary niter cake, the salt cake of commerce, or certain other materials, and are smelted, with the production of a very fluid matter of very low specific gravity. This matter includes the copper contained in the ore, while the nickel will remain in a mass by itself, and, being of greater specific gravity, will settle, after tapping the furnace, in the bottom of any vessel in which the mass is collected. The portion which sinks to the bottom will be found to consist ordinarily of sulphate of nickel, perhaps, with the salts of nickel, while the copper, iron, or other metal will be converted into sulphides, and rise to the top. When cool, the mass is broken up and the layers are separated by hand.

**Manganese.**—Test experiments have been made by Prof. Lorenz, of Göttingen, and his colleagues to determine whether manganese is really volatile or the volatility it manifests in furnace working is due to the intermediate action of carbon monoxide derived from the carbon usually present, forming a volatile and dissociable compound of a nature similar to nickel and iron carbonyl. It was definitely proved that carbon monoxide does not combine with manganese at a temperature below 350° C. In the high-temperature experiments with carbon monoxide a large quantity of manganese was found to have volatilized and condensed again. Hence manganese is certainly volatile with carbon monoxide. It was afterward found that equally good deposits of manganese dust were obtained when a current of either hydrogen or nitrogen, neither of which combines with manganese, was employed. It therefore appears that volatility is a property of the metal itself, and not merely attendant upon the formation of a compound with carbon monoxide, and is singularly manifested even at the temperature of the melting point.

For manufacturing, on a commercial scale, metallic manganese containing a minimum of detrimental impurities and absolutely free from carbon, W. H. Greene and W. H. Wahl expose the pulverized manganese ore purified from iron, or containing less than 1 per cent. iron, to reducing gases at a temperature approximating redness. All the manganese is thus converted into greenish-gray manganese monoxide, which must be allowed to cool out of contact with air, in order to prevent oxidation to red manganoso-manganic oxide. The monoxide is then mixed

with about 18 per cent. of its weight of granulated aluminum and a suitable flux, and the mixture is heated in magnesite crucibles to a temperature near the melting point of cast iron. As soon as the temperature of reaction is reached the mass promptly fuses, and must be poured from the crucible at its maximum temperature.

Adolphe Carnot's method for the assay of manganese oxides with hydrogen peroxide is based on the fact that while oxygenated water is decomposed with effervescence in contact with manganese peroxide, and that a small quantity of this oxide suffices to destroy an indefinite quantity of oxygenated water, the result is different when the peroxide and the oxygenated water are in presence of an acid which, though very dilute or weak, is capable of combining with manganous oxide. There occurs then a simultaneous decomposition of the two peroxides, and the quantity of oxygen liberated is exactly double that which exists in the manganese peroxide over and above  $MnO$ . The reaction occurs readily, even in the cold, whether with dilute nitric or sulphuric acid or with acetic acid, as long as the acids attack  $MnO_2$ .

**Alloys.**—A new crystal ferro-nickel alloy was observed in breaking a pot of copper-nickel matte at the Canadian Copper Works, when a cavity was disclosed lined with brilliant tin-white crystals, which penetrated into the surrounding matte. Analysis of two samples gave percentages of iron and nickel nearly the same in both, with a small, varying percentage of copper. From this variation, and from the fact that crystals of pure copper were strewn on the surface of the crystals of ferro-nickel, that element was supposed to be an impurity, and the composition of the pure crystals corresponded very closely with the formula,  $Ni_3Fe_8$ .

In applying W. H. Greene's and W. H. Wahl's method of reducing metallic oxides to the production of ferro-alloys, a silicide is desirable containing as high a proportion of silicon and as low a proportion of carbon as possible. In the preparation of, for instance, a ferro-manganese, the object in view is substantially the manufacture directly from the oxide of a ferro-alloy sufficiently high in manganese and sufficiently low in carbon to be employed with economic advantage in the production of manganese steel and the deoxidation of the charge in the Bessemer converter or on the hearth. The chemistry of the operation is extremely simple.

Manganese metal, manganese copper, and manganese bronze are manufactured at the Isabellenhütte, Dillenburg, Austria. The alloys of manganese with copper and zinc are easily hammered and rolled, and serve for the production of household utensils and fancy articles.

A bronze alloy of great strength and ductility, manufactured by A. K. Huntington and R. T. Preston, consists mainly of copper and zinc, to which are added various proportions of ferro-manganese and nickel, along with small proportions of deoxidizing and fluxing agents, such as sodium, or potassium, or magnesium aluminum, or silicon; or silicon may be used in larger quantities to form a sensible portion of the alloy, while tin may also be employed in a proportion seldom exceeding 1 per cent.

Alloys of aluminum and antimony are obtained

by M. D. A. Roche in all proportions in several ways. The simplest process is a direct fusion of the two metals at a low temperature. The alloys containing a low percentage of antimony (less than 5 per cent.) are hard, and possess a greater tenacity and elasticity than pure aluminum, yet are quite malleable. Their color is a little less white than that of aluminum, but their brilliancy is greater and more silvery, enabling them to well resist the atmosphere. When the percentage of antimony is increased the alloy becomes harder, but its elasticity is diminished, and it is friable; the crystallization proper to aluminum gradually disappears, and when 90 per cent. of antimony is reached the alloy contains groups of separated crystals. It was also noted that the melting point became higher as the percentage of antimony increased, as did likewise the alterability of the compound in the air up to a point where the alloy had a composition: Al, 18.37 per cent.; Sb, 81.63 per cent. This appears to be a true antimonide of aluminum. It is infusible at the highest temperature of the Perrot furnace, its melting point being apparently above that of soft steel. It is inalterable in dry air at ordinary temperatures, but at very high temperatures the antimony volatilizes. Moist air decomposes it even at low temperatures, a blackish powder containing aluminum being precipitated, and antimony hydride being evolved. The same reaction takes place with cold water. Alloys rich in antimony have a lower melting point, but they are less alterable in moist air. According to the author, the aluminum-antimony alloys combine with other metals, forming more complex combinations, some of which can be used in the industrial arts. Among these he mentions the nickel and tungsten alloys, which are remarkable for their hardness, tenacity, and elasticity, and the silver alloy, which is susceptible of a very high polish.

The second report of the Alloys Research Committee of the Institute of Mechanical Engineers, by Prof. W. C. Roberts-Austen, after discussing the chemical philosophy of alloyage and solution, deals with the experiments made by the committee, first with the influence of impurities on copper. The question was raised whether normal copper can be made to assume an allotropic state, and whether the allotropic varieties may differ as much as those of nonmetallic elements. Prof. Roberts-Austen has little doubt that copper can be prepared by electrolytic deposition in an allotropic state having a different density from that of normal copper. Figures were given showing how different may be the qualities of a metal chemically pure; for instance, rods of pure electrolytic copper, all the same sample, but variously treated, broke under stresses varying between 8,219 tons and 18,750 tons to the square inch, the former being the tensile strength of cast rods, and the latter of cast rods worked and not annealed; while cast rods carefully worked and annealed gave a tensile strength of 18,259 per square inch. The experiments show a difficulty in determining a standard tenacity for copper. Pure copper has been considered the best that can be used for engineering purposes, and specifications are generally framed to this effect. The Research Committee, however, show that the metal may be, and frequently is, as a matter of



practical fact, too pure for the purpose. It has been found that a fair percentage of arsenic improves the copper used in fire boxes of locomotives. Antimony also, when present in proper proportions, strengthens the copper. Bismuth renders it weak, and its prejudicial effects do not seem to disappear even though only a trace is present.

The name of "iron-silver" has been given to an alloy of iron with other metals generally, and particularly with copper and zinc. Cast iron, in the form of turnings, filings, or powder, is immersed in a bath of hydrochloric acid, through which is passed a current of carbonic acid. Currents of air and steam are afterward passed through the bath, and the liquid is drained through the residue, which is then dried and alloyed with other metals. The best proportions are: Iron, 35 per cent.; zinc, 24 per cent.; copper, 40 per cent. The color of the new alloy is a silvery white.

In the course of the experiments that have been made to find an alloy which, while as hard as tungsten steel, should be more malleable and less brittle, attention has been turned to the employment of molybdenum. On account of the expense of the metal itself ferro-molybdenum was employed as a substitute. Under a new process adopted by Sternberg and Deutsche at Grunau, near Berlin, a metal from 96 to 98 per cent. pure has been brought into the market at a practicable price. Their process consists in reducing molybdate of lime with carbon. The lime is then separated from the metallic molybdenum formed by means of chlorhydric acid. It is found that only half as much molybdenum as tungsten is required to produce the same effect on steel. Steel with 2 per cent. molybdenum is silver-white in color, has a velvety fracture, and is extraordinarily hard.

An antifriction alloy, patented by T. D. Bottom, is composed of lead, antimony, tin, and magnesium, which may be combined in various proportions. The inventor's patents cover two different sets of proportions.

**METHODISTS. I. Methodist Episcopal Church.**—This body includes 121 annual conferences, 8 mission conferences, and 7 missions; in all, 140 annual organizations regularly visited by one or another of the bishops. The "Methodist Yearbook" for 1894 gives as the summary of the statistics of all these bodies for 1893 (except the Congo Mission Conference and 2 Indian missions, for which no statistics were received, and 9 conferences of which the statistics for 1892 are inserted): Number of bishops, 18; of ministers in full connection and on trial, 16,444; of local preachers, 14,274; of lay members and probationers, 2,524,053; of Sunday schools, 28,392, with 326,050 officers and teachers and 2,411,525 pupils; of baptisms during the year, 113,628 of adults and 87,806 of children; of churches, 24,535, having a probable value of \$104,754,208; of parsonages, 9,300, valued at \$16,200,800. Of the members, 2,260,196, showing an increase during the year of 59,115, are registered as in full membership, and 263,857 (increase 22,311) as probationers. Amount of benevolent contributions: For the Missionary Society (including legacies, etc.), \$1,196,609, showing a decrease of \$60,764 from the previous year;

for church extension, \$151,224; for the Sunday-School Union, \$24,299; for the Tract Society, \$23,362; for the Freedmen's Aid and Southern Education Society, \$108,986; for education, \$165,729 (showing an increase of \$64,705); for the American Bible Society, \$35,444; for the Woman's Foreign Mission Society, \$277,290; for the Woman's Home Missionary Society, \$169,585; total contributions, \$2,152,528, showing a net decrease from the previous year of \$26,490. The contributions for ministerial support, indebtedness, etc., include, besides, \$10,298,915 raised for the support of ministers, bishops, and presiding elders; \$263,648 for conference claimants (worn-out preachers, their widows and orphans); \$5,384,686 for buildings and improvements; \$1,761,808 for old indebtedness on church property (leaving as present indebtedness, \$9,818,432); and \$3,641,917 for current expenses.

*Committee of Church Extension.*—The annual meeting of the General Committee of Church Extension was held in St. Paul, Minn., Nov. 2 to 4. The year's receipts had been: On the general fund, \$182,849; on the loan fund, \$149,730; in all, \$332,579. Six hundred and eighty-three churches had been aided, making the whole number from the beginning, 9,083. It was represented in the report that the increasing number of new conferences and missions on the frontier, and the increasing number of shelterless congregations and Sunday schools in the West and South, made imperative great enlargement of the means at the command of the board. The sum of \$316,825 was authorized to be applied to the work of the society during the ensuing year, and an equal amount was asked from the annual conferences.

*Board of Education.*—The receipts of the Board of Education for the year ending Nov. 29, 1893, were \$87,654. Fourteen hundred and sixteen students were aided during the school year ending in July, 1893. The total amount of \$461,032 had been loaned, and 5,186 students had been aided since 1873.

*Freedmen's Aid and Southern Education Society.*—The meeting of the General Committee of the Freedmen's Aid and Southern Education Society was held in St. Paul, Minn., Nov. 6 and 7. The receipts and expenditures for the year were balanced at \$363,763. The total indebtedness of the society was returned at \$174,915, having increased \$10,335 during the year—an increase not made by the regular expenditure, but caused by unforeseen emergencies. The work of the society is represented by 23 institutions (1 theological, 10 collegiate, and 12 academic) among colored people, with 229 teachers and 5,808 students, and 21 institutions (3 collegiate and 18 academic) among white people, with 110 teachers and 3,257 students. The aggregate property of these institutions is valued at \$1,808,800. Biblical departments are maintained in connection with all the collegiate and some of the academic institutions. Two hundred and seventy-seven young colored men were given instruction in theology during the year.

*General Missionary Committee.*—The General Missionary Committee met at Minneapolis, Minn., Nov. 9. The treasurer reported that the cash receipts for the year had been \$1,196,608, or \$60,764 less than the receipts of previous year,

and the expenditures had been \$1,350,245. Of this sum, \$676,107 had been applied to foreign missions, \$519,928 to domestic missions, \$8,900 to the salaries of missionary bishops, and \$28,245 in payment of special appropriations.

The following appropriations were made for the support of the missions during the ensuing year:

#### I. FOREIGN MISSIONS:

Africa.....	\$5,700
South America.....	51,671
China.....	118,711
Germany.....	27,700
Switzerland.....	7,900
Scandinavia.....	45,373
India.....	117,587
Malaysia.....	8,889
Bulgaria.....	18,250
Italy.....	42,500
Mexico.....	53,378
Japan.....	54,408
Corea.....	15,967
Lower California.....	900

Total for foreign missions..... \$568,884

#### II. DOMESTIC MISSIONS:

Welsh.....	\$1,601
Scandinavian.....	54,671
German.....	46,900
French.....	6,111
Spanish.....	14,056
Chinese.....	10,870
Japanese.....	7,400
Bohemian and Hungarian.....	8,585
Italian.....	5,271
Portuguese.....	712
Hebrew.....	1,200
Pennsylvania Dutch.....	800
American Indians.....	8,576
English-speaking.....	308,199

Total for domestic missions..... \$474,952

III. MISCELLANEOUS..... \$119,000  
For the debt..... 109,000

Grand total..... \$1,271,836

The latest published report of the society (1892) showed that there were in the foreign missions, 543 American missionaries, 4,141 native laborers, 59,138 members, 31,652 probationers, 76,572 adherents; an average attendance on Sunday worship of 196,323, with 11,342 adults and 8,231 children baptized during the year; 13,090 pupils, 335 of whom were in theological schools, 2,385 in high schools, and 10,370 in other day schools; and 120,954 pupils in Sunday schools; in the domestic missions, 689 missionaries, 38,588 members, 7,005 probationers, 812 adults and 3,378 children baptized during the year, and 44,409 pupils in Sunday schools. The Scandinavian and German conferences, also results of mission work, included 732 preachers, 60,900 members, 5,765 probationers, 89 adults and 5,664 children baptized during the year, and 58,399 pupils in Sunday schools.

*Woman's Foreign Missionary Society.*—The General Executive Committee of the Woman's Foreign Missionary Society met at St. Paul, Minn., Oct. 25. The committee is composed of 3 delegates from each of the 11 branches of the society. The society is composed of 4,533 auxiliary societies, with 121,685 members; 723 young women's societies, with 14,264 members; and 713 children's bands, with 14,699 members. The amount of money contributed for the year by the various branches was \$277,290, being \$11,948 more than in the previous year. One hundred and forty-five missionaries were sup-

ported by the society, 117 of whom were in the field, and 28 were at home for the benefit of their health. Of these, 22 were in Japan, 8 in Mexico, 31 in China, 2 in Bulgaria, 36 in India, 6 in Corea, 2 in Malaysia, 2 in Italy, 5 in South America, and 3 in Burmah. The sum of \$310,873 was appropriated for the ensuing year.

*Woman's Home Missionary Society.*—The twelfth annual meeting of the Board of Managers of the Woman's Home Missionary Society was held in Toledo, Ohio, Oct. 26. The receipts for the year had been \$90,906. Thirty-five missionaries were employed in the South, and 14 industrial homes and schools were sustained there. Twenty missionary teachers were laboring among the Indians and in Mexico. Other institutions of the society were the Glenn Home at Cincinnati, Ohio; a Bohemian mission in Chicago, Ill.; immigrant homes in New York, Boston, and Philadelphia; city missions in Cleveland, Ohio, and Pittsburg, Pa.; and a training school at Washington, D. C.; all of which had been regularly and liberally sustained. Clothing and other supplies had been distributed to the value of \$70,000. A Chinese mission work was sustained by the Woman's Missionary Society of the Pacific coast.

*Deaconesses.*—Nineteen deaconesses' homes in the United States returned 220 deaconesses, 63 deaconesses were engaged in the work of the Woman's Home Missionary Society, and 20 were estimated to be working outside of homes, making a total of 303 deaconesses laboring in America. Property valued at \$284,908 was held in connection with this work. Besides these, 18 deaconesses were returned from 6 homes in India, and 12 working in that country outside of homes, 106 in Germany and Switzerland, and 2 in China. The whole number of deaconesses in the Church was 441. The Deaconess Conference holds annual national meetings. Although it is without authority, its recommendations have been generally adopted in the deaconesses' homes.

*Epworth League.*—The Epworth League includes 11,300 chapters, with 750,000 members; and the Junior League 2,000 chapters, with 80,000 members. Six college chapters were organized during the year, and more than 60 chapters in foreign lands. The first International convention of the leagues met in Cleveland, Ohio, in June, 1893.

#### II. Methodist Episcopal Church, South.—

The statistical tables of this Church for 1892 give it 47 annual conferences, with 1,305,715 members — 39,153 more than in 1891; 5,368 traveling preachers, 4,757 of whom are effective; and 13,426 Sunday schools, with 13,426 officers and teachers and 754,223 pupils; number of preachers admitted on trial during the year, 343; number of baptisms, 60,394 of adults and 33,749 of infants. One hundred and seventy-nine schools and colleges return 16,620 pupils, endowment funds amounting in the aggregate to \$1,538,000, and property valued at \$4,485,042.

*Board of Church Extension.*—The Board of Church Extension met at Louisville, Ky., April 27, Presley Meguiar presiding. The secretary reported that the receipts for the year had been \$65,925 on general account, and \$11,318 on Loan-fund account; making, in all, \$77,243.



The general and conference boards had helped 431 churches, paying them \$85,276. There were in hand for the help of needy churches during the coming year \$34,000 in donations and \$27,000 in loans, while the applications for aid aggregated \$173,295. Cash additions had been made to the Loan funds of \$14,761, bringing the total amount now available for use, and excluding valuable assets not yet turned into cash, up to \$96,459. The whole amount of aid furnished from these funds to date was \$168,240. Grants were made to 102 churches in 24 States and Territories, and to 1 in the District of Columbia and 1 in the Republic of Mexico, aggregating \$26,350 in loans and \$34,430 in donations. Assessments were laid on the conferences for the year to the amount of \$100,000.

**Book Room.**—The book agents reported to the Book Committee at its annual meeting, May 3, that the total business for the year from all departments had been \$343,708; from which a net gain in assets had been realized of \$50,131. The liabilities of the concern amounted to \$13,396. The Book Committee appropriated \$17,500 for the benefit of superannuated ministers.

**Board of Missions.**—The annual meeting of the Board of Missions was held in Kansas City, Mo., beginning May 5. The treasurer's report showed that the receipts for the year ending March 31 had been \$374,565, and the disbursements \$277,510. The indebtedness for borrowed money had been reduced by the sum of \$61,050, leaving the liabilities from that source \$67,964. Appropriations were made to the missions in Brazil, China, Japan, Mexico, the Indian Mission Conference, and 12 other conferences, amounting, with certain special appropriations, to \$170,798. The service of the Rev. Dr. Young J. Allen in the translation and circulation of Christian literature in connection with the mission work in the Chinese Empire was commended, and the bishop was requested so to adjust his appointment that he might be in a position to continue it. Provision was contingently made for the eventual establishment of a Hebrew mission.

**III. Methodist Protestant Church.**—The annual meeting of the Board of Home Missions was held in Pittsburg, Pa., June 10. The treasurer reported that his receipts had been \$7,371. The reports received from the mission churches were generally of a favorable character. The appropriations to most of the points which had heretofore received aid were reduced, and a few new points were given assistance. The subject of organizing a woman's home missionary society, in accordance with the directions of the General Conference, was considered, but definite action was not taken.

The annual meeting of the Board of Foreign Missions was held at Steubenville, Ohio, May 2 and 3. The Rev. T. B. Graham presided. The treasurer reported that his total receipts had been \$13,922, in addition to which a balance in cash remained on hand at the beginning of the year of \$2,201. His disbursements had been \$13,238. A memorial was received from the Japanese Conference asking for a modification of certain parts of the action of the last General Conference concerning the government of the conference in Japan, which provided that "all missionaries sent out by the board or by the

Woman's Foreign Missionary Society shall be entitled to membership in the conference; but this shall not include the wives of missionaries." The Japanese conference was not ready to recognize women as members of the governing body. The board responded to this request that it had not the authority to change a law of the General Conference; that it could not pass an act out of harmony with the General Conference action, or construe that action in any other way than the plain words of the Discipline dictate and require. "If a mistake has been made, it will be wise to make the best of it, until such time as the matter can be remedied by proper authority."

**IV. American Wesleyan Church.**—The receipts of the general missionary secretary for the year ending May 31, 1893, were \$5,359. The mission in Africa was regarded as established, with land and a good building at Rokumso, although the missionary force had been weakened by the illness of some of its members. Fifteen towns had been visited. In the American work, 47 protracted meetings had been held on mission fields, 324 persons had joined the Wesleyan Church, and collections of \$290 had been taken.

**V. African Methodist Episcopal Church.**—The annual meeting of the newly organized Board of Church Extension was held in Philadelphia, Pa., May 4, Bishop Grant presiding. The receipts for the nine months of operation of the society were returned as having been about \$3,000. Assistance had been given to several churches throughout the connection.

**VI. Free Methodist Church.**—At the annual meetings of the General Conference Boards and Committees, held in Syracuse, N. Y., in October, the treasurer of the Mission Board reported that \$2,731 had been collected and disbursed during the year for the general or domestic work. Not being able to respond to all the numerous petitions asking for appropriations, the board had sought to give aid to the most needy fields. The sum of \$5,935 had been paid for foreign missions. Reports were read from the missions in India; at Inhambane, and the Bethany Zulu mission in Africa; and at Santiago, in the Dominican republic. Appropriations for aid in building churches and in paying off church debts were made by the Board of Church Extension to the amount of \$1,230. About \$4,547 were reported to the Committee on Claims as having been raised during the year and paid to "Conference claimants" (worn-out ministers, ministers' widows, etc.).

**VII. Methodist Church in Canada.**—The latest statistics of this body give the following aggregates: Number of ministers and probationers for the ministry, 1,920; of members, including those on trial, 252,178; of Sunday schools, 3,229, with 30,576 officers and teachers and 244,774 pupils; of Epworth Leagues and Epworth Leagues of Christian Endeavor, 849, with 39,161 members; of churches, 3,092, besides 1,108 other preaching places; of parsonages, 967; of burial grounds, 1,117; total value of church property, \$11,597,491.

The last year's expenditures of the Board of Missions of this Church exceeded its income by about \$7,000; the total amounts being, income, \$224,778, and expenditure, \$231,983. A table of "percentage expenditure" shows that 40 per

cent. of the appropriations were to domestic missions, 25 per cent. to Indian missions, 4 per cent. to French missions, 2 per cent. to Chinese missions in British Columbia, 9 per cent. to the Japan mission, and  $2\frac{1}{2}$  per cent. to the China mission. Appropriations of \$242,062 were made for the ensuing year at the meeting of the Board in October.

**VIII. Wesleyan Methodist Connection (British).**—The "Wesleyan Methodist Calendar" for 1894 give statistics showing that in Great Britain there are associated with this Connection 2,101 ministers and 460,064 members, including those on trial; in Ireland, 226 ministers and 26,723 members; associated with foreign missions are 362 ministers and 44,258 members; and in connection with the French, South African, West Indian, and Australasian conferences, 947 ministers and 200,688 members—a total of 3,636 ministers and 726,283 members. The amounts raised during the year for Wesleyan connectional funds were: Foreign missions, £127,878; home missions, £35,092; Theological Institution, £15,665; General Chapel fund, £9,026; Education fund, £7,053; Auxiliary fund, £38,036; Schools fund, £22,016; Children's fund, £30,895; Extension fund, £1,759. The sum expended on the erection of Wesleyan new chapels and other trust property was £335,431.

The "Calendar" also gives the yearly statistics of the various sections of Methodism throughout the world. The Wesleyan Connection has in Great Britain 2,302 ministers and 478,692 communicants, and abroad, 1,175 ministers and 189,502 communicants; or a total of 3,477 ordained ministers and 668,194 communicants. The New Connection has, at home and abroad, 201 ministers and 38,055 members; the Bible Christians, 230 ministers and 31,991 members; the Primitive Methodists, 1,100 ministers and 193,467 members; the United Methodist Free Churches, 421 ministers and 36,805 members; the Wesleyan Reform Union, 22 ministers and 8,174 members; the Independent Methodists, 360 ministers and 6,855 members. If to these be added 36,195 ministers and 5,197,032 members in the United States, and 1,819 ministers and 241,376 members in Canada, a total is given of 44,775 ministers and 6,348,029 communicants.

The report of the Education Committee showed that the number of day-school departments was 828, with 176,593 pupils and an average attendance of 133,528. The sum of £32,822 had been expended during the year upon Sunday and day schools, and £6,265 upon alterations and enlargements. The total income of the schools had been £245,174, and the expenditure £253,056. The Sunday schools numbered 7,024, with 128,955 teachers and 939,938 pupils.

The report of the Chapel Committee, published in January, shows that the ordinary income of the fund was £8,933. The Relief Loan fund amounted to £46,000, and the Erections Loan fund to £50,000. A total of £14,505 had been advanced from these two funds. The committee had sanctioned 355 cases in all since the last report, and 53 modifications of cases previously sanctioned, making a total estimated expenditure of £278,736. The proposed new chapels, with the enlargements and other works, would give sitting accommodation for 21,290 persons. During the

year 319 other cases had been reported through the district synods, representing an expenditure of £309,204, and 21,199 additional sittings. The total amount expended on Wesleyan trust property and reduction of debt during the year had been £378,137. The net amount actually contributed in Great Britain was £292,583.

Report was made to the Conference of the "Joyful News" mission that it now included 180 lay evangelists, 12 women evangelists, an excellent working plan legally secured, and an annual income of £6,000.

In the London mission, 15 ministers, 20 lay agents, 60 "sisters," and several hundred unpaid workers had been engaged during the year in various parts of the metropolis in evangelistic work which had resulted in gathering congregations of between 10,000 and 15,000 persons, with a membership of about 5,000.

The report of the Worn-Out Ministers' and Ministers' Widows' fund showed an increase in almost every item of income. Of the £36,132 promised to the special fund, more than £20,300 had been paid.

*Wesleyan Missionary Society.*—The annual meeting of the Wesleyan Missionary Society was held May 2. Mr. R. W. Parks, M. P., presided. The income of the society, after reducing the legacies to the average for twenty years, had been £127,078, showing an increase of £1,950. The expenditures had been £127,169, while the debt brought over from 1891 caused a present deficiency of £21,521. Three hundred and forty principal mission stations were maintained in various parts of the world, with 1,767 chapels and other preaching places, and 338 missionaries, including supernumeraries. Of other laborers there were 2,295 paid agents and 4,783 unpaid agents. The stations returned 37,466 church members and 6,825 on trial, with 70,973 pupils in Sunday or day schools.

*Conference.*—The Wesleyan Conference met at Swansea in July. The Rev. Henry J. Pope was chosen president. In the pastoral session modifications were instituted in the method of trying accused chairmen of districts, and an adverse report by committee on a proposition to extend the franchise in the election of the president of the Conference by giving the right of voting to all ministers of ten years' standing, whether present in Conference or not, was approved. In the representative session (in which representatives of the laymen take part with the ministers) a number of changes were made in the system of the Connectional high schools, and measures were taken for the liquidation of the debt of the Schools fund; a committee report was adopted adverse to further extending the limit of time (now three years) of continuous ministerial service at a single station; a former expression of disapproval was reiterated and emphasized of raising money for Methodist purposes by any method in which the element of gambling is involved; the Sunday schools were given proportionate representation, corresponding with the average attendance upon them, in the circuit quarterly meetings; and in the discussion on the state of the churches, the propriety of the people's recognizing their own ministers in times of marriages and funerals, instead of going to the Established Church, was insisted upon;



definite doctrinal teaching and greater care in the conduct of meetings of the young, and the commendation of healthy literature to the young people were urged. On the receipt of the report of the Committee of Privileges, relating its activity during the year in behalf of a number of bills passed in the interest of nonconformists, a resolution respecting the Nonconformist Marriage bill, declaring it to be the one demand of the Conference, for such legislation "as will remove from the marriage service the presence of the registrar, on the ground that such presence makes an invidious distinction between the ministrations of the Established and nonestablished churches, and tends to discourage the performance of marriage services in Methodist places of worship," was offered and withdrawn.

**IX. Primitive Methodist Church.**—The Primitive Methodist Conference met in Nottingham in June. The Rev. John Stephenson was chosen president. The Conference is composed of the legal poll of 12 members, who really constitute the legal Conference, but have in effect waived their powers in favor of the larger and more representative body, which is composed of twice as many laymen as ministers. These lay members are elected annually by the district meetings from among the local preachers, class leaders, or station stewards, in addition to whom 4 lay members at large are appointed by the Conference of the previous year. The statistical reports showed an increase of about 1,200 church members, and more than £38,000 had been raised during the year for the Jubilee fund. The report of the Missionary Society represented that in 46 mission stations ("home") 63 regular and several occasional missionaries were employed, and a net increase of 70 members was returned. No part of the work was so satisfactory as that in the metropolitan area. The Australian missions had suffered from floods and bank-failures. Work in Fernando Po had been retarded by the civil and ecclesiastical authorities, but there had been an increase of members and development along the industrial line. In South Africa the work continued to grow and prosper among the natives. The mission party to the Zambesi district had received permission from the King to open a station near the Caffre river. The Conference decided to unify certain benevolent funds into a general connectional fund, and a committee was appointed to adjust the details. It was provided that if more than £50,000 is finally realized on the Jubilee fund, the sum of £5,000 may be devoted to the formation of a fund to aid aged or poor local preachers or other lay officers in the time of their need. The General Committee was instructed to consider the subject of making provision to aid local preachers to equip themselves more perfectly for their work. The privilege given to the quarterly meetings to send invitations to ministers preliminary to their appointment as preachers in charge was enlarged. The formation of juvenile and women's missionary societies was authorized. The College Committee was directed to consider in what way the connectional deed can be so changed as to place the full control of the appointment of the officers of the college in the Conference. The Conference camp meeting was attended by more than 10,000 persons.

**X. Methodist New Connection.**—The numerical summary of this body for 1893, presented to the Conference in June, gives totals of 543 chapels, 202 ministers, 1,202 local preachers, 31,709 members (an increase of 421), 5,215 probationers (an increase of 448), and in the Sunday schools 11,045 teachers and 85,600 pupils (an increase of 702). The report of missions showed that in Ireland there had been an increase of 10 members and 6 probationers; in China, 191 adult baptisms and a net increase of 72 full members and 100 probationers, with nearly 2,000 members on the church roll; and in the home-mission fields the net increase had been 39 members and 26 probationers. The Legacy fund created by the last Conference amounted to £2,393, and the property in China was valued at £9,000. The normal income of the Chapel fund had slightly declined in the department of receipts from the circuits. The sum of £8,844 had been raised in payment of trust debts, £3,123 on renovations, and about £3,000 on new chapels and schools. The Loan fund capital amounted to £8,000. The applications for grants and loans had been below the average.

The Conference met at Huddersfield, June 12. The Rev. Thomas Scowby was chosen president. A committee was appointed to consider the subject of the suitable commemoration of the centenary of the Connection, which will occur in 1896. Much attention was given to the affairs of the Book Room and periodicals. Two editors were provided for, to be chosen from the ministers in active service, or from the supernumeraries, whose work should be literary only, and a Book Room manager, who should give to the editors all the assistance in his power. A committee was appointed to represent the Connection on a committee instituted by the Free Church Congress of 1892 (see "Annual Cyclopædia" for 1892), with a view to preventing denominations from overlapping and interfering with one another's work. Another committee had been representing the Connection on a joint committee of Methodist denominations to watch over the civil and religious liberties of Methodism at large. A petition in favor of a measure for securing sites and for the leasehold enfranchisement of places of worship was approved. The Welsh Suspensory bill, Local Veto (of the liquor traffic), the Registration of Clubs, and Sunday Closing bills, and other measures affecting the interests of temperance and popular freedom were also approved. The subject of the formation of a Connectional Young People's Society of Christian Endeavor was left for the year to the consideration of a special committee.

**XI. United Methodist Free Churches.**—The Assembly of the United Methodist Free Churches met in Bristol, July 11. The Rev. S. Wright was chosen president. Reports were presented from the various funds of the Churches. The reports of the Chapel funds showed that debts on chapel property had been reduced during the year by £22,170, and that a further sum of £32,400 had been spent on new erections. The subscriptions toward the Relief fund amounted to £500. Through the agency of the Chapel Loan fund debts had been reduced by £3,871, making a total of £67,203 liquidated by means of this fund since its beginning. The income of the

Fire Insurance fund had amounted to £823, and the expenditure to £912. The contributions toward the Superannuation and Beneficent fund amounted to £476, and the capital of the fund stood at £40,000. The ministerial subscriptions reached £1,070. Nine thousand two hundred pounds had been promised, and £4,125 had been paid toward the Wesley Memorial fund. The sales from the Book Room had amounted to £7,431, or nearly £200 less than in 1892.

A resolution was adopted in favor of establishing branches of the Young People's Society of Christian Endeavor in all parts of the Connection.

**XII. Bible Christians.**—The Bible Christian Conference met at St. Austell in August. The Rev. J. Woodcock was chosen president. The statistical reports showed that the number of members in Connection had risen to 32,335, an increase of 1,101 having been returned during the last twelve months, while the number of pupils in Sunday schools was 55,264, showing an increase of 1,581. Other items were: Number of chapels belonging to the Conference, 858; of local preachers, 1,880; of ministers working under the Conference, 278. In the English circuits the amount received for Sunday-school purposes was £4,788, which left a net surplus of £808. The income of the Chapel fund for the last year had been £28,808, of which a balance was left over expenditures of £2,248. During thirty years £369,734 had been expended on new buildings and rebuilding and enlarging, while the debt was only £93,407 more than in 1863. The sum of £11,100 had been contributed for ministerial support. Notwithstanding a previous Conference had definitely fixed the time limit of the successive appointments of ministers to the same station at four years, all the three applications made for special exemptions from the operation of the rule were granted. The formation of Christian Endeavor societies in connection with all the congregations was recommended. A resolution was adopted in favor of an arrangement for the training of local preachers during their period of trial in parliamentary subjects and in preaching, and the matter was referred to the committee for the examination of candidates. A scheme was submitted for paying all the debts of the Connection by the time of the centenary of its formation, which will occur in 1915, and estimates were presented showing that if the average of contributions and payments that had prevailed during the past twelve years were continued till then, this would be done.

**Methodist Union in Australia.**—Negotiations have been in progress between the different Methodist churches of the several branches in Australia and New Zealand, with a view to agree upon a basis of union, and the general subject has been submitted to vote in the quarterly meetings. The results of the voting are regarded as showing the predominance of a feeling in favor of union in the abstract, accompanied by the opinion that the time has not yet come for it. The Victoria Conference (Wesleyan) approved of proposals contemplating, rather than close organic union, a kind of federation, including a general interchange of pulpits and the holding of united meetings for Christian fellowship; the appointment of a federal Methodist council, to arrange for periodical pulpit ex-

changes and for holding conventions to promote spiritual, social, and fraternal intercourse, as well as to prevent overlapping of interests and injurious denominational competition; the council to consider and report whether it would be possible to take common action in establishing a common book depot, a common Methodist journal, a common Sunday-school union, and a joint central examination committee, by which all candidates for the ministry of the several Methodist churches shall be examined and approved; the council also to have power to take common action on all questions affecting the civic or religious privileges of the churches represented. The Primitive Methodist quarterly meetings generally expressed approval of union, if on a "satisfactory basis," that term being intended to include recognition of the equal rights and privileges of laity and ministry.

**MEXICO**, a federal republic in North America, composed of 27 States, 3 Territories, and a Federal District. The Constitution was last amended on Dec. 27, 1890. The Senate consists of 56 members, 2 from each State and 2 from the Federal District, elected for four years by indirect suffrage, one half retiring every two years. The Chamber of Deputies has 227 members, elected every two years by direct suffrage. The President is elected for four years by direct universal suffrage and secret ballot. The President for the term ending Dec. 1, 1896, is Gen. Porfirio Diaz, now serving his third consecutive term, his fourth altogether. The Cabinet at the beginning of 1893 was composed of the following Secretaries of State: Foreign Affairs, J. Mariscal; Interior, M. R. Rubio; Justice and Education, J. Baranda; Finance and Commerce, L. M. Romero; War and Marine, Gen. P. Hinojosa; Treasury, F. Espinosa; Communications and Public Works, M. Gonzalez Cosio. Afterward J. J. Limantour succeeded Romero as Minister of Finance.

**Commerce and Production.**—The value of the imports for the financial year 1891 was \$50,018,658, and of the exports \$63,276,395. The exports comprised \$27,020,023 of merchandise, and \$36,256,372 of precious metals. In 1892 \$26,330,411 worth of merchandise were exported, and \$49,137,304 worth of specie and bullion. Of the total exports for 1892 the United States received \$49,932,000, Great Britain \$15,267,000, France \$4,644,000, Germany \$4,344,000, Spain \$661,000, and other countries \$620,000. The following were the principal exports of merchandise: Heniquen, \$6,358,000; coffee, \$5,814,000; lead, \$2,363,000; tobacco, \$1,756,000; woods, \$1,676,000; vanilla, \$969,000; copper, \$860,000. Of the heniquen fiber nine tenths goes to the United States. The commercial marine consists of 260 vessels, of which 47 are steamers. There are 98 cotton and 16 woolen factories in Mexico. The duties on cotton and woolen goods, though not protective in their original purpose, are about 100 per cent. Various other manufactures, favored by a high tariff, have been established. Wine-growing is a new industry which promises well. In 1891 there were 38 companies formed for various operations, with \$70,535,000 of American capital.

**Communications.**—There were 6,950 miles of railroad open to traffic in September, 1893.



The telegraph lines had a total length of 38,125 miles, of which 25,000 miles belonged to the Federal Government, and the rest to the State governments. The post-office in 1891-'92 forwarded 117,704,313 internal and 9,601,233 international letters and postal cards. The receipts were \$1,142,182, and expenses \$1,211,227.

**Finances.**—The budget for 1893-'94 makes the total receipts \$40,060,000. The expenditure was estimated at \$41,076,260. To balance the budget a reduction of 10 per cent. in salaries was decreed, reducing the total estimates to \$39,976,260. The public debt amounts to \$158,932,659. The foreign debt is £16,427,500, paying 6 per cent., including the consolidated loan of 1888 and one for £6,000,000 raised in 1890. The Tehuantepec Railroad bonds, £2,700,000 pay 5 per cent. The internal debt is \$62,932,659. In 1893, a new loan of \$15,000,000 was contracted in Berlin.

**The Army and Navy.**—The army in 1893 numbered 2,270 officers and 34,833 men. There are 30 battalions of infantry, besides cadres for 30 battalions of reserves, 3 auxiliary battalions, 1 battalion of pioneers, and the invalid corps, the total strength being 1,293 officers and 22,437 men; 4 battalions of artillery, numbering 148 officers and 1,688 men; 25 officers and 331 men in the stationary artillery; 11 officers and 101 men in the artillery train; 13 regiments of cavalry, comprising 481 officers and 6,359 men; a gendarmerie corps of 21 officers and 229 men; 6 troops of auxiliary cavalry, having 126 officers and 1,483 men; and 9 companies of rural guards, containing 165 officers and 2,200 men. The infantry is armed with Remington rifles, and the artillery with steel guns of the Bange system, having a caliber of 7.9 centimetres. The army is organized in 4 divisions of 2 brigades each, with 3 regiments in each brigade. The strength of the regiments varies. A battalion of infantry usually contains 4 companies of 240 men each. Including the reserves, the total peace effective of the army is estimated at 60 general officers, 3,600 other officers, 45,000 rank and file, 7,000 horses, and 3,000 mules. The war strength is about 3,700 officers, 132,000 infantry, 25,000 cavalry, and 8,000 artillery.

The naval force consists of 3 avisos, 2 gunboats, and a school-ship, carrying together 18 guns and manned by 84 officers and 416 men. There are building 2 transports, 4 coast-guard gunboats, and 5 first-class torpedo boats.

**Insurrectionary Movements.**—Before the beginning of 1893 seditious bands collected on the northern border in Chihuahua and on United States soil across the Rio Grande, several hundred miles above the scene of the late rebellion of Garcia. They captured Ascension and Corralitos, and drove out American settlers, who took refuge in New Mexico, and Gen. McCook sent detachments of United States troops to the locality. Pacheco and Perez, the leaders of the revolt, had supplied their followers with abundant arms and ammunition. The Indians of Yaqui river, in Sonora, revolted in sympathy with the uprising in Chihuahua. On Feb. 6, 1893, Gen. Urez, who refused to fight the Indians, was shot by order of a court-martial. In April a band of insurgents, led by one Amalla, sacked the mining town of Guerrero, and after-

ward defeated a body of Federal troops that pursued them. Troops that were sent out in June to suppress the Yaqui Indians were ambushed, and retired with severe losses. In the south of Mexico an insurrection, begun by Gen. Neri in Guerrero, was averted by a concession of the autonomous rights that were demanded. In the north the insurrectionary movement revived in the late autumn, and Gen. McCook again made arrangements to guard the frontier. Many citizens of the Ascension district who were drafted into the army were in sympathy with the insurrection. In an engagement in November, near the river Casas Grandes, the Federals were worsted. But the movement did not spread, as the revolutionary leaders hoped it would; though to the end of the year they remained in rebellion, demanding the concession of rights such as had been granted to the States of Coahuila and Guerrero, and denouncing Diaz for having altered the Constitution, which restricted the President to one term of office, and for granting land and concessions to foreigners and obtaining for himself and his adherents corrupt profits therefrom, to the prejudice of the true interests of the people.

**MICHIGAN**, a Western State, admitted to the Union Jan. 26, 1837; area, 58,915 square miles. The population in 1890 was 2,093,889. Capital, Lansing.

**Government.**—The following were the State officers during the year: Governor, John T. Rich, Republican; Lieutenant-Governor, J. Wight Giddings; Secretary of State, John W. Joehim; Treasurer, Joseph F. Hambitzer; Auditor, Stanley W. Turner; Attorney-General, Adolphus A. Ellis; Adjutant-General, Charles L. Eaton; Superintendent of Public Instruction, Henry R. Pattengill; Railroad Commissioner, Simeon R. Billings; Commissioner of Mineral Statistics, James B. Knight; Commissioner of Insurance, W. E. Magill till July 1, when he was succeeded by Theron F. Giddings; Commissioner of Banking, Theodore C. Sherwood; Commissioner of State Land Office, John G. Berry; Inspector of Oils, Neill McMillan; Commissioner of Labor, Charles H. Morse; State Librarian, Mary C. Spencer; Chief Justice of the Supreme Court, John W. McGrath; Associate Justices, Charles D. Long, Claudius B. Grant, Robert M. Montgomery, Frank A. Hooker.

**Finances.**—The balance on hand in the treasury, June 30, 1892, was \$1,241,971.82; the receipts during the year were \$2,775,991.57; the expenditures, \$3,470,451.65; the balance, June 30, 1893, \$547,511.74. The outstanding bonds are, past-due part-paid Five-Million-Loan bonds, \$19,000; adjustable at \$558.57 per \$1,000 (not bearing interest), \$10,992.83; trust fund debt, \$5,623,620.55.

The railroad companies paid taxes amounting to \$849,696.82; fire-insurance companies, \$131,971.25; life-insurance companies, \$70,004.70; telegraph companies, \$10,619.72; telephone companies, \$15,941.21. The receipts from specific taxes now exceed \$1,000,000 a year, and under the Constitution this money can be used only for payment of interest on the State debt, the balance being transferred to the primary-school interest fund, which is semiannually apportioned among the counties for support of

primary schools. In 1892 \$893,838.57 was paid by the State for the support of these schools.

**Banks.**—In the fifth annual report, submitted by the commissioner in December, he congratulates the people that in the recent financial crisis "Michigan, with her 162 State banks, was able to pass through the ordeal with the loss of but two banks—the Central Michigan savings bank of Lansing, and the Bank of Crystal Falls, L. S. Notwithstanding the unfavorable conditions there have been incorporated during the year 18 new state banks, with a capital of \$956,000."

**Insurance.**—The annual report of the business of fire, inland-navigation, and marine insurance companies for 1892 was published in June. At the beginning of the year there were 133 joint-stock companies authorized to issue policies on the stock plan, licensed to do business in this State; of this total 3 were organized in Michigan, 100 in other States, and 30 in foreign countries. The number of companies authorized to transact business in the State at the close of the year was 131. The capital represented at the beginning of the year was as follows: Michigan companies, \$1,000,000; companies of other States, \$50,264,444; foreign companies (deposit), \$6,000,000; total, \$57,264,444. The only mutual companies now authorized to insure against fire are those organized under Michigan laws.

**Education.**—A proposition was made this year to provide the State University with a fixed fund by giving it one fifth of a mill for every dollar of State tax levied. This was deemed rather extravagant, but the bill passed at one-sixth of a mill. At the present assessed valuation the university would realize from this tax \$188,333.33 for the year 1893-'94. Subsequently another bill was passed placing at the disposal of the university half of this sum, or nearly \$95,000, in the year 1893. The receipts for 1891-'92 from students and other sources outside of State funds and appropriations were \$253,530.44, or an annual average of \$126,765.22. The total current expenses for the two years were \$483,279.11, or an average of \$241,639.55 for each year. This gave an average annual deficit of \$114,874.33, which was partially offset by a land-grant fund of \$38,590 each year.

The university had 2,774 students in the spring term, of whom about half are residents of the State.

The State Normal School at Ypsilanti has over 1,100 students and 40 teachers.

The school population in 1892 was 674,279, and the whole number enrolled in public and private schools, 474,081; the ratio of enrollment to school population, 70:30. The number of schoolhouses was 7,666, and the seating capacity 563,576. The number attending higher institutions of learning was 7,529. The whole number of teachers was 16,100, of whom 3,359 were men, whose average monthly wages were \$47.72, while those of the 12,749 women employed as teachers were \$34.15.

**Charities.**—The School for the Blind received from the Legislature \$42,000 for the year 1893-'94. An additional sum of \$5,000 is to be appropriated for a mechanical building where the trades of willow-ware making, cane seating, hammock and net weaving, etc., can be taught.

Two hundred dollars yearly is to be paid to some oculist to examine the eyes of the pupils and ascertain whether their sight can be restored by treatment, at Ann Arbor. This was brought about by the recent case of Miss Keene, whose sight was restored after twenty-six years of total blindness. The study of music is one of the principal features of the institution. There are in the school 16 pianos. The average attendance for each year of the last biennial period was 78 and 74, the *per capita* cost being \$230.32. In 1893 the average number was 85.

The School for the Deaf had a total enrollment for the two years of 343, and an average number of 292.

The State Public School was established to provide a temporary home for dependent children. The total number of inmates each year of the biennial period was 474 and 497. The average number was 195 and 204. The *per capita* cost was \$167.39.

The most important work of the State Public School is that of indenturing children. The responsibility of placing them rests almost entirely with the county agent, whose duty it is to visit the home of the applicant and determine whether it is best to place a child there.

The Home for the Feeble-Minded, provided for by the last Legislature, will relieve this school to a great extent.

The establishment of an insane asylum in the upper peninsula, as provided for by the Legislature, was a much-needed measure. About one twelfth of the population of the State is resident in that section. The appropriation—\$75,000—is to be used one half in 1893 and the other in 1894. The buildings are to be on the cottage plan.

**Prisons.**—Reports of lax discipline in the prison at Jackson called for an investigation, which revealed the fact that a system of traffic had grown up among the convicts which was of such proportions that the time of two convict bookkeepers was wholly taken up in keeping track of the business, although it is one of the rules that convicts shall hold no conversation with one another. In view of this and many other evidences of lack of discipline, an investigation was ordered by the Legislature. The committee found a lack of harmony and official confidence, and general disobedience to the prison rules. There are about 1,108 penitentiary convicts in the State.

At Marquette State Prison there were 114 convicts. A new workshop has been built during the year to increase the capacity of the prison for turning out brooms and knit goods.

The report of the Reform School, which is hereafter to be known as the Industrial School for Boys, shows that from its establishment in 1856 to November, 1892, it has had 5,060 inmates. During the last year of that time there were 774 inmates. The current expenses for the year ending Nov. 30 were \$59,847.91, and the balance was \$11,430.17.

The Industrial Home for Girls had 304 inmates in 1892.

**Investigation of a Lynching.**—A confessed murderer was lynched, May 23, at Corunna, the county seat of Shiawassee County. The murder was extremely brutal, and the supposed mur-



derer avoided arrest for about six months, but was then caught and lodged in jail at Corunna. A mob of several hundred residents of the county organized, battered down the doors of the jail, detained the officers of the law, took out the prisoner, who was said to have already cut his own throat through fear, hanged him and mutilated his body, and delivered it to the sheriff. The complaint was drawn under the statute providing for the removal by the Governor of county officers in certain cases, and it prayed for the removal of William E. Jacobs as sheriff, who was charged with incompetency and neglect of duty in allowing the lynching.

The Attorney-General began an investigation in November, but postponed the continuation of it till Dec. 11. The testimony was very damaging to the sheriff. The Attorney-General was led to believe that the victim would not have been convicted if given a trial, because it appeared that an alibi could have been proved. He was also convinced that the man did not cut his own throat. The occurrence had a tendency to strengthen the sentiment in favor of a capital-punishment law.

**Iron Ore.**—By the annual report of the geological survey, it appears that Michigan retains the first place among States producing iron ore, with an increased output. The total iron ore mined in the State was 46.29 per cent. of the grand total for the United States, showing an increase of 23.12 per cent. over the previous year's production. Of the total for the State, 95.82 per cent. was red hematite, giving Michigan first rank as a producer of this class of ore, with 62.06 per cent. of the nation's red-hematite total. Michigan has also the credit of furnishing the largest annual output from one operation. The list of mines producing 50,000 tons or over shows that 32 of the largest mines are credited to this State.

The hard times have been especially severe on the iron miners of the upper peninsula. Over 4,000 were reported from Ishpeming in June, as discharged in that district. In August, the labor commissioner said, after a visit to that region, that the majority of the mines were closed, and scarcely any ore was being shipped from the ports. In November a terrible state of destitution was reported among the miners of the Gogebic range. This range is 10 miles long, and the ore taken from it is said to be the best Bessemer iron yet found in America. Over 3,000,000 tons of the ore were shipped from the range last year. Operators had been getting \$3.50 a ton for their product, and had been paying their miners about \$2 a day. They were forced to close this summer. It is estimated that 20,000 people are placed in destitute circumstances by the closing. The families were left helpless at the threshold of a Northern winter. Soup houses were opened, but the funds for these soon ran out, and the situation grew more desperate than ever. Gov. Rich issued proclamations asking help. Substantial aid was sent, and the railroad companies gave free transportation to many who wished to return to their former homes.

**Powers of the Board of Health.**—The Minneapolis, St. Paul and Sault Ste. Marie and Canadian Pacific Railways applied for an injunction to compel the State Board of Health to

cease the inspection of immigrants at the Sault. The case involved not only the powers of the board, but the validity of laws passed by the last Legislature. The court denied the writ, and sustained the board in enforcing its quarantine regulations.

**State Lands.**—The report of the Land Commissioner, issued in October, shows that there still remain unsold 437,891,943 acres of State lands. The report says further:

One thousand five hundred and fifty-one acres of swamp land have been taken by homesteaders during the year, and 856.89 acres have been patented. There are now 21,753.54 acres standing licensed as homesteads. A new class of homestead lands was created by Act 206 of the laws of 1893, the tax law. Sections 127 to 134, inclusive, of this act provide for the transfer of certain abandoned lands that have been sold to the State for delinquent taxes for more than three years to the control of this department, and subject to entry only as homesteads on payment of 10 cents an acre at the time of entry, and 10 cents an acre each year for five years, when deed will issue. Not more than 240 acres can be taken by one person. Many thousand acres of land will come under the provisions of this law.

During the year the amount of lands sold was 32,464 acres, for which \$166,718.40 was received. The total receipts of the State Land Office, on account of lands sold during the year, and for principal, interest, and penalty received on sales made in former years, and from other sources, was \$216,362.38. This year \$6,992.43 acres of swamp lands have been disposed of, and the proceeds of sales amounted to \$12,824.32.

**Legislative Session.**—The Legislature met on Jan. 4, and adjourned on May 29. There were 21 Republicans and 11 Democrats in the Senate, and 69 Republicans and 31 Democrats in the House. Francis B. Stockbridge, the Republican candidate, was elected to succeed himself as United States Senator.

Four amendments to the Constitution were acted upon favorably, and were submitted to vote at the spring election.

A bill on test of oils restores the point to 120° for a flash test, as it was before the enactment of 1891, when the law was changed so as to provide for an open test of 120°.

A new tax law was passed. It returns to the State system of collecting delinquent taxes, re-adopting it instead of the county system which was adopted by the Legislature of 1891. A clause in regard to land conveyances was the subject of controversy later, when the law went into operation. It required that a certificate should be attached to each conveyance of real estate offered for record, affirming that all taxes on the property involved in the transfer have been paid for a period of five years, the certificate to come from the Auditor-General or from the county treasurer of the county where the property is assessed. The Supreme Court decided in July that this section of the law was valid.

The Miner law for the election of presidential electors by districts, which was passed in 1891 and declared valid when brought before the Supreme Court, was repealed, and the old law providing for their election by the State at large is again in force.

An electric-lighting bill for Detroit allows the

city to do its own lighting. There is to be a board of six commissioners, and no sum greater than \$600,000 may be raised in any three years without the consent of the people by ballot.

A law was made providing for a tax on inheritances. It calls for 1 per cent. on all personal property in excess of \$5,000 after the payment of debts, but no tax on real estate which goes to direct heirs when the testator is a resident of the State. Where the testator is not a resident of the State, or where the property goes to collateral heirs, the tax is 5 per cent. on all real estate and personal property in excess of \$500.

The salaries of the judges of the Supreme Court were raised under a new law, and they are all required to live in Lansing. Salaries of the Attorney-General and the Auditor-General were increased.

A new prison law was enacted, one section of which provides for the gaining of time by convicts by good behavior. The new law in some respects is not quite as favorable to the prisoner as the old one. An insane asylum in the upper peninsula was provided for, and \$75,000 appropriated for buildings. An appropriation of \$2,000 was made for locating and marking the positions of Michigan regiments on the battlefields of Chickamauga, Chattanooga, and Mission Ridge. An additional \$25,000 was given for the World's Fair exhibit.

A bill granting to women the right to vote at all city, township, and village elections met with much opposition, but finally passed. It carried an educational restriction, providing that every woman claiming the right to vote shall be required to read, in the presence of the Board of Registration, at least one section of the State Constitution in the English language.

The constitutionality of this woman-suffrage law was called in question, the Attorney-General declaring against it. The question was brought before the Supreme Court in October, and the law was declared unconstitutional, on the ground that the "source of all authority to vote at popular elections is the Constitution; that the electorate is constituted by the fundamental law; and that the qualifications of electors must be uniform throughout the State."

A law, popularly called the "jag-cure law," was passed, providing that prisoners convicted of drunkenness should have given to them the choice between going to jail or the Penitentiary and going to an institution for the cure of drunkenness. The person convicted may have sentence suspended on condition that he agree to take the treatment and file a \$100 bond for the fulfillment of the promise. After his graduation the expense of treatment is to be paid by his county in case he brings sufficient proof of his poverty.

A bill was introduced to establish the death penalty for murder in the first degree. It was lost in the Senate, 17 members being unalterably opposed to it.

**Political.**—At the general election, April 3, a justice of the Supreme Court and two regents of the university were to be chosen, besides circuit judges. The four amendments passed upon by the Legislature were also to be submitted to the popular vote.

The Democratic Convention nominated George H. Durand for Justice of the Supreme Court, and Henry A. Harnion and Robert T. Bunker for Regents.

The Republican nominees were Frank A. Hooker for Justice, and Frank W. Fletcher and Herman Keifer for Regents.

The Populists nominated Edward S. Greece for Justice, and Myron O. Graves and Byron S. Ashley for Regents.

The candidates of the Prohibition party were Myron H. Walker for Justice, and Robert C. Safford and Joseph T. McCulloch for Regents.

The total vote for Justice was 342,780, of which Frank A. Hooker received 164,754, G. H. Durand 148,712, E. S. Greece 14,469, and Myron H. Walker 14,526. The number of blanks and rejected votes was 319. Frank W. Fletcher and Herman Keifer were elected Regents of the University.

**Amendments to the Constitution.**—All the four proposed amendments submitted to the people at the April election were voted favorably upon by the majority. They were:

1. Relative to works of internal improvement, authorizing the city of Grand Rapids to issue its bonds for the improvement of the navigation of Grand river.

2. Relative to the power of the Legislature to enact laws for the creation of county and township boards of highway commissioners, to maintain county roads at the expense of the county, and township roads at the expense of the townships.

3. Relative to the salaries of State officers, increasing and fixing the Governor's salary at \$4,000; the Lieutenant-Governor's salary at \$1,200; the judges of the circuit courts at \$2,500; the Superintendent of Public Instruction's salary at \$2,000; the Secretary of State's salary at \$2,000; and the Commissioner of the Land Office's salary at \$2,000.

4. Relative to the jurisdiction of circuit courts, giving them original jurisdiction in all matters civil and criminal not excepted by the Constitution nonprohibited by law, and appellate jurisdiction from all inferior courts and tribunals and a supervisory control of the same. They shall also have power to issue writs of *habeas corpus*, *mandamus*, *injunction*, *quo warranto*, *certiorari*, and other writs necessary to carry into effect their orders.

The first was carried by a vote of 70,597 to 55,091; the second by 68,486 to 60,015; the third by 64,422 to 62,601; and the fourth by 60,219 to 53,492.

The Legislature did not provide for the constitutional convention, which was voted favorably upon at the election of 1892.

**MINNESOTA**, a Western State, admitted to the Union May 11, 1858; area, 83,365 square miles. The population in 1890 was 1,301,826. Capital, St. Paul.

**Government.**—The following were the State officers during the year: Governor, Knute Nelson; Lieutenant-Governor, David M. Clough; Secretary of State, Fred. P. Brown; Treasurer, Joseph Bobleter; Auditor, Adolph Biermann; Attorney-General, H. W. Childs; Adjutant-General, H. Muehlberg—all Republicans, except the Auditor. Chief Justice of the Supreme Court, James Gilfillan, Republican; Associate Justices, William Mitchell, Daniel Buck, Thomas Canty, Democrats, and Loren W. Collins, Republican.

**Finances.**—The total indebtedness of the State is \$1,971,306. The permanent school fund



is \$10,289,439; and the permanent university fund, \$1,026,584. The total revenues of the State for the fiscal year ending July 31, 1893, were \$5,083,608, and the total disbursements \$4,352,964, leaving a net surplus in the treasury of \$730,643.

**Mortgage Indebtedness.**—The results of the investigation of mortgage indebtedness in Minnesota by the census office show that 15.25 per cent. of the farm families hire, and 84.75 per cent. own, the farms cultivated by them; that 53.61 per cent. of the farm-owning families own free of incumbrance. On the farms of the State there are liens amounting to \$37,709,574, which is 31.61 per cent. of their value, and this debt bears interest at the average rate of 8.18 per cent. The corresponding facts for homes are that 46.99 per cent. of the home families own their homes; that of the home-owning families, 63.94 per cent. own free of incumbrance. The debt on owned homes aggregates \$27,953,413, or 34.36 per cent. of the value, and bears interest at the average rate 7.42 per cent.

On all the real estate of Minnesota there is a mortgage debt of \$197,745,989, of which \$75,355,562, or 38.11 per cent., is on acre tracts, and \$122,390,427, or 61.89 per cent., is on village and city lots.

**Banks.**—The number of banks suspended in the State between January and September was 31, of which 8 had resumed at the latter date. In the St. Paul banks the average reserve had increased from 37.17 per cent. on Oct. 3, the date of the last call, to 38.5.

**Dairy Products.**—According to the report of the State Dairy Commissioner, the number of creameries in operation in Minnesota in 1893 was 201; number of cows, 527,424; pounds of butter made in creameries, 18,916,300, valued at \$3,924,610.

**Grain.**—Estimates made in September placed the yield at an average of about ten bushels to the acre. While the yield is smaller than that of last year, the quality was reported better. The crop was moved very slowly, which was due in large part to the fact that fewer farmers than in any previous year thrashed out of the shock. The advance of the State in grain production since its admission is shown by the fact that in 1860 there were raised 2,186,995 bushels of wheat, 2,941,952 bushels of corn, and 2,176,002 bushels of oats; in 1892 there was raised 41,210,000 bushels of wheat, 24,192,000 bushels of corn, and 43,573,000 bushels of oats.

**Lumber.**—The value of the lumber product in 1890 was \$15,615,420; that of 1893 was estimated at \$17,898,780. At the semiannual meeting of the Mississippi Valley Lumbermen's Association, held at Minneapolis, in August, it was decided that all sawmills in the upper Mississippi valley district, with one or two exceptions, should shut down on Sept. 20, reducing the cut for each concern about 25 per cent.

**Gold.**—Special-Agent Gray, in his report on the gold fields of north Minnesota, says he found one vein with evidences of gold, which is about 7 feet wide and extends throughout the length of the island, and another 10 feet wide and 1,700 feet long. The section embraces only a narrow strip extending along the shore of Rainy lake for about 25 miles, and not more than 3 or 4

miles wide at any point, including a large number of islands.

**Iron.**—The report of the geological survey on the production of iron ores shows that Minnesota has passed Pennsylvania and New York, and occupies the third place among the iron-producing States, with a total output in 1892 of 1,225,465 long tons, or 7.7 per cent. of the total for the United States.

**Prison Population.**—On July 31 there were in the State Prison, exclusive of Federal convicts from other States, 338 inmates, and in the State Reformatory 153 inmates, thus making the aggregate prison population 491.

**Railroads.**—The opening of the transcontinental line of the Great Northern, in June, was celebrated with great rejoicing in St. Paul. This railway, which is now open to Puget Sound, is regarded as distinctly a St. Paul system, since that is its terminus, and its general offices and headquarters are there. It carries a large portion of the wheat crop, and a great amount of commerce to and from the growing towns of the Northwest passes over it. It is operated in connection with a fleet of steamers. The Great Northern, unlike the other transcontinental lines, has been built without Federal assistance. Except in so far as the old lines of the system within the State are concerned, it has been built wholly by private capital without a subsidy in money or in land. A daily passenger service was established in October on its new branch between Sioux Falls and Yankton.

The total mileage of railroad construction within the State for the year was 86.46. Nearly 4,000,000 acres of land in Minnesota are still owned by railroad companies.

**Disastrous Fires.**—In June the new towns of Virginia and Mountain Iron, on the Duluth, Mesaba and Northern road, were virtually put out of existence by fire. Afterward Mesaba and Biwabik, on the Duluth and Iron Range, were visited by serious fires, and Tower likewise had an experience with the flames, the destruction being due in all cases to the fierce forest fires raging on the iron ranges. Over 2,000 people were shelterless and without food, every house and provision depot having been burned. On Aug. 13 a fire consumed \$2,000,000 worth of property in Minneapolis, burning more than 200 houses and making 1,500 people homeless.

**Reciprocity Convention.**—An International Reciprocity Convention met at St. Paul, June 5. Its object was to take measures toward securing the adoption of a system of commercial reciprocity between Canada and the United States. A permanent organization was made. Resolutions were passed favoring reciprocity in trade, improvement of the Great Lakes to tide water, so as to admit the passage of ocean steamers and open competition between the railways of both countries; and providing for a committee of 10, 5 from the United States and 5 from Canada, to lay matters before their respective governments with a view to securing the enactment of necessary laws to secure the ends sought.

**The World's Fair Exhibit.**—The \$150,000 appropriated by the legislatures allowed the State to make a fine exhibit at the fair. The State days were June 1 and Oct. 13. Besides its own fine building, the State had exhibits in all

the general buildings. The forestry and mining displays were particularly fine. More than 200 awards were received for cereals, with only a little more than 300 samples shown, 40 for mining exhibits, and 66 for flour. Fifty premiums were received for draught horses, 48 for cattle, and 21 for poultry.

**Decision.**—In July the Supreme Court rendered a decision that has a wide bearing on labor and capital alike. The Northwestern Lumbermen's Association has a rule providing that no members shall sell goods at any place at prices lower than the retail dealers. The Bohn Manufacturing Company, one of its members, was accused of violating the rule, and was notified by the secretary that a circular warning them of the fact would be sent to all the members. The Bohn Company secured an injunction restraining the secretary on the ground that such a boycott would seriously injure their business. The lower court's order was reversed by the Supreme Court on the ground that the Bohn Company, being a member of the association, should have conformed to its rules. The Supreme Court holds that any one, unless under contract obligation, or unless his employment charges him with some public duty, has a right to refuse to work for or deal with any man or class of men he sees fit, and this right, which one man may exercise singly, any number of men may exercise jointly.

**Legislative Session.**—The Legislature met on Jan. 3, and adjourned on April 19. The Senate had 25 Republicans, 16 Democrats, and 13 Populists; the House, 71 Republicans, 36 Democrats, 2 Populists, and 5 Democrat-Populists.

Cushman K. Davis was elected to succeed himself in the United States Senate, having 87 of the 168 votes cast. Daniel W. Lawler, the Democratic candidate, had 49, and Sidney M. Owen, the People's party candidate, 23. Other votes were scattering.

A proposed amendment to the Constitution was voted favorably upon. It will authorize the levy and collection of a tax on inheritances, devises, bequests, legacies, and gifts.

An important act was that providing for building a new Capitol at St. Paul. The cost is not to exceed \$2,000,000, and the money is to be raised by a tax of two tenths of a mill a year for ten years. The tax will not be levied for two years to come.

The State University was placed on a more independent footing by an act providing for a slight increase in its annual maintenance fund by means of a tax of 0.15 of a mill. When the product of this tax shall exceed \$125,000 a year the excess is to be covered into the State treasury. It was provided that the question of free textbooks may be submitted to the voters of any school district.

In the interest of the farmers of the State laws were passed making new provisions in regard to inspection of wheat and to grain elevators. It has been charged that for years the farmers have been robbed and defrauded at the country elevators and exposed to the rapacity of middlemen. The new law extends the benefit of State inspection of wheat to all sellers. All elevators are to be treated as public elevators and to be under the supervision and subject to the inspection and regulations of the State Warehouse Commission.

Another act in the same interest was one giving to farmers the right to erect independent elevators on the railroad right of way. Still another act requires the railroad company to provide side-track facilities at these elevators.

For the aid of farmers whose crops were destroyed by hail or other storms in 1892, \$75,000 was appropriated for seed grain, as a loan to be repaid from the proceeds of future crops.

Provision was made for the purchase of a site and erection of a State elevator at Duluth, of a capacity of 2,500,000 bushels, to be managed and operated by the State Warehouse Commission.

In the interest of labor provision was made for safeguards to all dangerous machinery, placing all manufacturing and other establishments employing large numbers of people under the inspection of the Bureau of Labor.

A bill was passed to regulate the selling of railroad tickets and to check ticket-scalping.

Measures relating to cities and villages provided that no liquor license should be issued to any one not an actual resident of the State; that any county, town, incorporated city, or village may vote bonds in aid of improved canals or water ways, but not in excess of a total indebtedness equal to 5 per cent. of the taxable value of the property within the territory voting upon the proposition; that all villages incorporated by special acts previous to the general act of 1885 shall have the power to vote on the issue of license for the sale of intoxicating liquors.

A bill was passed for the purchase of land and erection of buildings for the soldiers' home.

Amendments to laws and statutes increased the number of vestrymen of Protestant Episcopal churches to 9; provided for graduating the amount of capital stock necessary to establish banks according to population; and increased the punishment for pools and trusts, providing that in addition to the punishment by fine there shall also be imprisonment in the Penitentiary of from one to ten years.

**The State Elevator.**—The act providing for a State elevator at Duluth, as described under the head "Legislative Session," was brought to test in the courts as to its constitutionality. Action was brought to enjoin the Board of Railway and Warehouse Commissioners from carrying out the provisions of the act, on the ground that it was in conflict with the Constitution. The lower court decided in favor of the act, but the Supreme Court reversed the decision.

**MISSISSIPPI**, a Southern State, admitted to the Union Dec. 10, 1817; area, 46,810 square miles. The population, according to each decennial census since admission, was 75,448 in 1820; 136,621 in 1830; 375,651 in 1840; 606,526 in 1850; 791,305 in 1860; 827,922 in 1870; 1,131,597 in 1880; and 1,239,600 in 1890. Capital, Jackson.

**Government.**—The following were the State officers during the year: Governor, John M. Stone, Democrat; Lieutenant-Governor, M. M. Evans; Secretary of State, George M. Govan; Treasurer, J. J. Evans; Auditor, W. W. Stone; Attorney-General, T. Marshall Miller, who resigned in January, and was succeeded by Frank Johnston, appointed by the Governor on Jan. 21; Superintendent of Public Instruction, J. R. Preston; Railroad Commissioners, J. F. Sessions,



Walter McLaurin, and J. H. Askew; Chief Justice of the Supreme Court, Thomas H. Woods; Associate Justices, J. A. P. Campbell and Timothy E. Cooper.

**Finances.**—For the fiscal year 1892 the disbursements exceeded the receipts by \$179,955.10, and for 1893 the excess of disbursements was \$248,545.92. Of the disbursements for 1893 \$674,195.32 were on account of the common schools. This sum added to the poll tax retained in the counties, amounting to \$245,823.58, makes a total contribution for the support of common schools of \$920,018.90.

The total assessment of real estate for 1893 was \$113,409,358, and of personal estate \$48,764,536. The State tax rate was 5 mills.

**Education.**—The following figures are taken from the latest report of the Superintendent of Public Education, covering the years 1892 and 1893: Number of educable children, 516,183; enrolled in public schools, 334,923; average daily attendance, 194,993; public schools taught, 5,986; teachers in public schools, 7,497; separate school districts, 58; total revenues for public schools, \$1,392,927. The statistics for 1892-'93 show that 73 whites in every 100 of school age were enrolled in the public schools, while fewer than 60 in every 100 negroes were enrolled. The enrollment of both races was 64.8 per cent. of all the educable children.

At the Agricultural and Mechanical College there was an attendance of 310 pupils for the session of 1891-'92, and of 262 for the session of 1892-'93. For the session beginning in 1893 there had been enrolled 242 pupils up to the close of the year. The attendance at the Industrial Institute and College for Girls for the session of 1892-'93 was 287, and for the present session up to the close of the year 273. The State University contained 158 students at the close of the year. These institutions are doing good work for higher education.

**Charities.**—At the end of the fiscal year 1893 there were 632 patients in the State Lunatic Asylum at Jackson, of whom 154 were white males, 196 white females, 136 colored males, and 146 colored females. The main asylum building, which was burned in February, 1892, has been rebuilt and furnished with modern improvements. In the East Mississippi Asylum, at Meridian, there were 240 white patients at the close of the year. All colored patients have been transferred from this institution to the asylum at Jackson. There were 80 pupils at the Institute for the Deaf and Dumb at the close of the year.

**Railroads.**—There are 2,466.5 miles of railroad in the State. The valuation of railroad property for the year was \$24,022,479, on which a State tax of \$120,110.50 was assessed.

**Penitentiary.**—On Dec. 23, 1893, there were 791 prisoners in the State Penitentiary, of whom 100 were white and 691 colored. This is an increase of 238 in two years. During 1892, 266 convicts were received, and during 1893, 401. There were 72 deaths and 72 escapes during these years. The net earnings of the institution for 1892 were \$24,010, and for 1893, \$29,961. All except 125 of the convicts have been leased to planters in the Mississippi delta, at \$8 per month for negroes and \$7 for white men; but under the new State Constitution all such leases

are prohibited after Dec. 31, 1894, when the State must undertake the direct control and employment of its prisoners.

**Banks.**—There are 63 State banks, with a total capital of \$3,260,925, doing business in the State. They have individual deposits subject to check amounting to \$4,399,590.96, and time deposits of \$551,401.88. These several banks hold in State, county, levee, and city bonds \$498,968.86, and are real-estate holders to the amount of \$494,556.64.

**Confederate Pensions.**—Under the provision of section 272 of the State Constitution the Legislature of 1892 passed an act authorizing \$50 to be paid annually out of the State treasury to all persons entitled to receive pensions under the laws of this State, but it was further provided that not more than \$64,200 per annum should be expended for that purpose. In consequence of a very large increase in the number, only \$32.25 was paid to each pensioner for 1892, and the amount for 1893 will be considerably less.

**MISSOURI**, a Western State, admitted to the Union, Aug. 10, 1821; area, 69,415 square miles. The population, according to each decennial census since admission, was 140,455 in 1830; 383,702 in 1840; 682,044 in 1850; 1,182,012 in 1860; 1,721,295 in 1870; 2,168,380 in 1880; and 2,679,184 in 1890. Capital, Jefferson City.

**Government.**—The following were the State officers during the year: Governor, William J. Stone; Lieutenant-Governor, John B. O'Meara; Secretary of State, Alexander A. Lesueur; State Auditor, J. M. Seibert; State Treasurer, Lon V. Stephens; Adjutant-General, Joseph A. Wickham; Superintendent of Education, Lloyd E. Wolfe; Attorney-General, R. F. Walker; Railway Commissioner, James Cowgill; all Democrats; Chief Justice of the Supreme Court, Francis M. Black; Associate Justices, Thomas A. Sherwood, Theodore Brace, Shepard Barclay, James B. Gantt, Gavin D. Burgess, George B. Macfarlane; all Democrats.

**Finances.**—The State debt is less than \$7,000,000. The mortgage indebtedness on the farms and homes averages, according to a United States bulletin, \$80 to the head of population, and bears a ratio of 16.15 per cent. to the assessed valuation. The number of bank failures from January to September was 24; 3 resumed before Sept. 1. The aggregate liabilities reported were \$8,200,000.

**Products.**—Missouri grows 219,000,000 bushels of corn, 36,000,000 of oats, 20,000,000 of wheat, and 13,000,000 pounds of tobacco. The lead product has exceeded 100,000,000 pounds in a single year, and the zinc has equaled 12,500 tons a year. It is first of the States in the number of mules owned, third in hogs and corn, sixth in iron and horses, seventh in oats, ninth in sheep.

**Coal.**—By the report of the recently finished review of the coal fields of the country by the Geological Survey it appears that Missouri has 26,700 square miles of coal fields. No other Western State exceeds this supply save Illinois, which has 36,800 square miles. The Missouri product reached 2,733,949 tons in 1892, and the value of it was \$3,369,659. Three feet is near the average thickness of the coal beds of the

State, and beds 18 inches are profitably mined on a large scale. All Missouri coals are bituminous, with the exception of the cannels, which are found in local and small deposits.

**Lumber.**—From a statistical report of the Southern Lumber Manufacturers' Association, covering stocks on hand Aug. 20, 1893, and sales from Jan. 1 to July 1, it appears that of the 94 mills reported from 8 States only 6 are in Missouri. They have a total daily capacity of 430,000 feet; the stocks amounted to 30,150,000 feet, and the shipments to 64,590,575 feet.

A newspaper article published in April says that St. Louis is developing a large trade in the export of hard woods from the Southern forests. The trade is entirely new, and of most remarkable growth. Southern hard woods have been a feature of the lumber market for three or four years, but the export trade has been almost entirely confined to quartered and plain white oak, ash, walnut, and gum from New York and Boston.

The effect of the foreign trade has so far mainly been to cause a spreading out of territory in which lumber is bought. In addition to all this export and outside trade, there is a wonderful increase in home consumption. It was marked last year, but it is estimated to be fully 15 per cent. this year over last.

**Government Lands.**—The report of the General Land Commissioner shows that, of the vacant Government lands yet unappropriated, Missouri has 808,799 acres, all of which has been surveyed. More than one fourth of this is in the Ironton district, southeast of the center of the State. Taney, Camden, Stone, and Ozark counties, which have, in the order named, the largest number of acres of those reported by Counties, are lacking in railroad facilities. They are hilly and well supplied with timber, and have rich bottom lands along the streams.

A dispatch in November says a large number of home seekers have been victimized by the sale to them of lands in southwestern Missouri to which fraudulent titles were given. The source of title is from Don Joseph Valliere or Von de Carondelet, who are certified to have secured from the Spanish Government, in 1793, the grant of a large tract described as in the White river district, extending from the rivers Norte Grande and Cibulus to the sources of said rivers, 10 leagues in depth. In reality all the land not entered belongs to the United States Government. An investigation to trace the deeds to their source is in progress.

**Storm and Flood.**—A rise in the river in April and May flooded villages, carried away small buildings, and wrecked larger ones by undermining. A very large dock warehouse at East St. Louis gave way before the rush of the water, and about one fourth of it fell in a heap, the roof sinking and settling upon the wreck. Thousands of boxes and barrels of goods were thrown into the water, and 1 laborer was crushed to death under the *débris*.

In June a tornado passed over parts of Kansas and Missouri, doing great damage in both States, though Missouri suffered less than Kansas. Orchards were torn up by the roots, grain laid low, and buildings unroofed, overturned, or carried away. Many persons were injured, and 3 were killed in Gentry County.

**Labor Interests.**—A special jury in a St. Louis court decided that an employer damages the business character of his employee by summarily dismissing him without cause, as it creates a suspicion of incompetency that makes it more difficult for him to secure another job, in a case against the Glendale Quarry Company, which must therefore pay its former superintendent \$2,984.25 for damages and salary after his discharge. He had been employed a year by a verbal contract, but one day in August the company informed him that he was not needed any longer. No cause was assigned, but it transpired that it was to make room for a relative of one of the stockholders. The special jury was impaneled at the request of the quarry company.

There was a strike in the autumn at the coal mines at Bevier, in consequence of the announcement that the usual increase of wages for the winter months would not be granted. The summer price had been 50 cents a ton, the winter price 60 cents. The miners also demanded a return to the plan of payment twice a month. They were joined in the strike by the miners of Huntsville and Ardmore.

**Train Robbers.**—A train on the Kansas City, St. Joseph, and Council Bluffs line was held up at Amazonia by 6 masked men Sept. 25. A hint of their intention, however, had been given in some way to the police, and a decoy train loaded with armed officers was sent in advance of the regular express train. The decoy train was just rounding a hill in a cut about a mile north of St. Joseph when the robbers flagged it. They boarded the baggage car, and the officers opened fire on them, killing 2 outright and capturing 3. Though the robbers used their revolvers freely, none of the officers were injured.

**Powers of the Mayor.**—The Supreme Court rendered a decision in December in a suit to restrain the Mayor of St. Louis from proceeding with the trial of the Commissioner of Public Buildings for alleged derelictions of official duty. The court affirmed the constitutionality of the provision of the city charter under which the trial was proceeding when interrupted by an application for a writ of prohibition.

**Sale of Vagrants.**—Under an old law, which is found in the revised statutes of 1889, several vagrant negroes have been sold recently in the State as chattels. In the case of a negro arrested for vagrancy at Mexico, in March, the constable was ordered by the justice to hire out or sell him for six months to the highest bidder, at public auction, at the door of the courthouse. The sale was stopped by *habeas corpus* proceedings brought to test the validity of the law. It was disputed by the negro's counsel on two grounds: That the statutory provisions found in the chapter named were repealed by implication and by the enactment of other legislation; and that, if not thus repealed, they were unconstitutional. In the decision rendered by the Supreme Court, Judge Sherwood said the Constitution of the State declares that there can not be in the State either slavery or involuntary servitude, except in punishment of crime, whereof the party shall have been duly convicted. The petitioner was guilty of no crime.



and these proceedings, if allowed to continue and reach their anticipated and ultimate developments, would result in his imprisonment and his being subjected to involuntary servitude and to punishment.

**The Guarantee Investment Company.**—This company, which has been doing business in the State for two years, was stopped in its operations in July by the closing of the money-order and registry offices of the post-office department against it, and in October nine of its officers were indicted by the Federal Grand Jury in Chicago. Beginning in Nevada, Mo., in 1891, with a capital of \$2,000, it soon had offices in St. Louis and Chicago, had placed 50,000 bonds of the denomination of \$1,000, and was in the receipt of \$60,000 a month from its subscribers. It had taken in over \$500,000 on initiation fees, and about as much more on account of payment of monthly installments, and had paid out \$206,000 for the redemption of bonds. It was gaining recruits at the rate of 3,500 a month, each applicant paying in \$10 as a "starter." The Government holds that the business is plainly of the nature of a lottery.

**Legislative.**—The Legislature was made up of 28 Democrats and 6 Republicans in the Senate, and 92 Democrats and 48 Republicans in the House. The session began on Jan. 4, and ended on March 23. Francis M. Coekrell was re-elected to the United States Senate by a vote of 109 to 49 for Chauncey I. Filley, the Republican candidate. Among the important acts passed were several amendments to the criminal laws.

The old law prohibiting the sale of liquor to Indians is extended to include "habitual drunkards."

Several measures in reference to elections were important; among these the Corrupt Practices act attracted general notice. It is the most radical law that has yet been enacted upon the subject, and some of its provisions are in advance of any views of reform that have been presented in this relation. It provides that every person who offers a bribe or otherwise illegally attempts to influence a voter's conduct shall be deemed guilty of a felony, and shall be punished by a fine of \$500 and imprisonment in the Penitentiary for not less than two or more than five years.

But this law is principally remarkable in the matter of expenditures for election purposes. Full publication of all campaign disbursements, both by candidates and by committees, is required, under oath, and no certificate of election can be issued to any successful candidate until he has made this return. It is provided that no candidate for Congress or for any public office in the State or in any county, district, or municipality shall expend more than \$100 where the number of voters is 5,000 or fewer, \$2 for each 100 voters over 5,000 and under 25,000, \$1 for each 100 voters over 25,000 and under 50,000, and 50 cents for each 100 voters over 50,000. The person receiving the next highest number of votes to that cast for his successful competitor can, at any time during his term of office, by affidavit to the Attorney-General, cause an action to be brought for violation of this section, and upon proper proof the guilty person will be deprived of office.

Other acts affecting elections make false personation of a voter at the polls a felony, with a penalty of five years.

An important law creates the Southeast Missouri Land Commission, one member each from Cape Girardeau, Ballinger, Scott, Mississippi, Stoddard, New Madrid, Pemiscot, Dunklin, Butler, and Wayne to be appointed by the Governor, who shall have made a topographical survey of the swamp lands, with proposed canals and other schemes for the reclamation of the lands.

Inspection of grain is provided for by a law declaring all private grain warehouses of 50,000 bushels or over to be public warehouses, and they are to come under the inspection of the State Railroad and Warehouse Commissioners.

An act to prevent abridgment of the legal rights of workmen by their employers provides for the fine and imprisonment of any employer or agent who forces an employee, under threat of discharge, to withdraw from any lawful organization or union of which he may be a member.

Elaborate laws go into effect for the protection of trade-marks, labels, etc., of manufacturers within the State.

An important law was one creating the office of excise commissioner, who will be appointed by the Governor. It takes the licensing power out of the hands of the collector of St. Louis.

A joint and concurrent resolution was adopted asking for an appropriation for the improvement of St. François river; and one submitting to the qualified voters of the State an amendment to the Constitution providing for increased tax levy for roads.

**MONTANA**, a Western State, admitted to the Union Nov. 8, 1889; area, 146,080 square miles; population, according to the census of 1890, 132,159. Capital, Helena.

**Government.**—The following were the State officers during the year: Governor, John E. Rickards, Republican; Lieutenant-Governor, Alexander C. Botkin; Secretary of State, Louis Rotwitt; Treasurer, Frederiek W. Wright; Auditor, Andrew B. Cook; Attorney-General, Henri J. Haskell; Superintendent of Public Instruction, Eugene A. Steere; Chief Justice of the Supreme Court, William Y. Pemberton; Associate Justices, W. H. De Witt and E. N. Harwood.

**Valuations.**—The valuation of real property in the State for 1893 was \$71,805,939; of personal property, \$52,642,613; and of railroad property, \$9,953,355. The number of range horses in the State was 179,839, and their value \$4,446,407; number of cows (common), 22,833, value \$501,835; stock cattle, 753,268, value \$13,770,704; sheep, 2,252,527, value \$5,974,316; hogs, 9,914, value \$58,984.

The railroads were assessed per mile as follows: Northern Pacific, \$2,835; Great Northern, its Pacific extension and Nelhart branch, \$4,000; Montana Central, Montana Union, and Oregon Short Line, \$5,000. Northern Pacific branch lines were assessed at \$4,000 per mile.

**Legislative Session.**—The regular business session of the Legislature began on Jan. 2, and adjourned on March 2. As neither Republicans nor Democrats controlled a majority of the Lower House, there was some difficulty and delay in effecting an organization of that body. The

situation was further complicated by reason of a dispute over the seat of the member from Choteau County, which arose out of the action of the county canvassing board in throwing out the returns from Box Elder precinct. By this action the board gave the election to the Democratic candidate, Hamilton; but, on application to the Supreme Court, an order was obtained directing the board to reconvene and count the rejected ballots, as a result of which the Republicans obtained a majority of the votes cast, and a certificate of election was issued to Leech, the Republican candidate. Both Leech and Hamilton presented their certificates to the House at the opening session demanding admission, whereupon the matter was referred to a committee, and both contestants were thereby prevented from taking part in the organization. With this seat vacant, there remained 26 Democrats, 25 Republicans, and 3 Populists entitled to act in the choice of a presiding officer. A temporary organization was effected on the first day by the Republicans voting with the Populists for Thomas Matthews, Populist, as temporary Speaker. Before permanent officers were chosen an agreement was reached between the Democrats and the Populists by which Matthews should remain permanent presiding officer, and some minor offices were to be given to the Democrats. This arrangement was carried out on Jan. 3, the second day of the session. On Jan. 10, by a vote of 27 to 26, the Republican contestant, Leech, was admitted to his seat as Representative from Choteau County, the Populists voting with the Republicans. The choice of a successor to United States Senator Wilbur F. Sanders devolved upon this Legislature. On the first joint ballot, taken on Jan. 11, before a Democratic caucus had been held, the vote stood: Sanders, Republican, 33; William A. Clark, Democrat, 15; Samuel T. Hauser, Democrat, 11; W. W. Dixon, Democrat, 8; Martin Maginnis, Democrat, 1; Samuel Mulville, Populist, 2. On Jan. 13 the Democratic caucus nominated William A. Clark on the first ballot, but there were 8 absentees, followers of Marcus Daly, who refused to recognize the caucus or be bound by its action. Their candidate was W. W. Dixon. On the second joint ballot, on Jan. 13, after the Democratic caucus had adjourned, the vote stood: Sanders, 32; Clark, 25; Dixon, 8; Mulville, 3. The Populists abandoned Mulville after a few ballots and gave their support to Dixon. One ballot was taken each day without substantial change in the standing of the candidates until Feb. 10. On that day the Republicans, following the decision of a caucus held on the preceding day, transferred their votes from Sanders to Lee Mantle, and the latter received their support till the end of the session. Strenuous efforts were made to heal the breach in the Democratic ranks, but the supporters of Dixon were obdurate, and, although the Democrats had a clear majority on joint ballot, they found themselves unable to elect a Senator. On the forty-third ballot, taken on March 1, the vote was: Mantle, 30; Clark, 24; Dixon, 11; scattering, 2. On the forty-fourth and final ballot, taken on March 2, the last day of the session, 6 Republicans and 2 anti-Clark Democrats came over to the support of Clark, giving him 32 votes to 25 for Mantle and 11 for Dixon. Soon after

the close of the session Gov. Rickards appointed the Republican candidate, Lee Mantle, to the vacancy. But in the United States Senate, on Aug. 28, a resolution was adopted, by a vote of 32 to 29, declaring Mantle not entitled to the seat, and indirectly deciding that the Governor had no authority under the Constitution to fill a vacancy when the Legislature has failed to do its duty. As Gov. Rickards refused to call an extra session, the State was represented by only one Senator during the year.

Among the laws enacted was one designed to carry into effect sections 41 to 44 of the State Constitution, by which penalties are provided for bribery and attempted bribery of members of the Legislature and other public officers, and for solicitation of bribery between fellow-members of the Legislature. An "antiscalper" law requires every person selling transportation tickets in the State to obtain from each company he represents a certificate of his authority to sell, and to present such certificate to the Secretary of State and obtain from him a license to act as ticket agent in the State. All persons who sell tickets contrary to these provisions are made liable to fine and imprisonment. The same act requires railroad companies to redeem unused tickets purchased by patrons. The introduction of hired peace officers from other States was prohibited, and a penalty was imposed on all persons who, without due authority, attempt to exercise the duties of peace officers.

A State board of charities and reform was created. There was also established a State bureau of agriculture, labor, and industry, to be conducted by a commissioner appointed by the Governor. A comprehensive fish and game law was enacted.

The following State institutions were established, and provision was made for their government: An agricultural college at Bozeman, a university at Missoula, a school of mines at Butte City, a normal school at Dillon, a deaf and dumb school at Boulder City, a reform school at Miles City, a home for orphans, foundlings, and destitute children at Twin Bridges, and a second prison at Billings. Some of these institutions received grants of such public lands as were held by the State from the Federal Government in trust for such institutions, but no appropriation of public money immediately available was made, except to the three institutions last mentioned. For the reform school \$25,000 were appropriated; for the home at Twin Bridges, \$15,500; and for the Billings State Prison, \$72,000.

The following new counties were created: Flathead County, out of a portion of Missoula, county seat Kalispel; Valley County, out of a portion of Dawson, county seat Glasgow; Teton County, out of a portion of Choteau, county seat Choteau; Ravalli County, out of a portion of Missoula, county seat Stevensville; Granite County, out of portions of Deer Lodge and Missoula, county seat Philipsburg.

The sum of \$20,000 was appropriated for bounties on stock-destroying animals. The tax rate for 1893 and 1894 was fixed at 2½ mills for State purposes. Resolutions were adopted favoring the election of United States Senators by direct vote of the people.



Other acts of the session were as follow :

Establishing a great seal for the State.

To provide for the sale of timber from lands belonging to the State.

Authorizing the State Board of Education to select lands from the school lands and other public lands for the uses and purposes of the educational institutions of the State.

Regulating the branding of stock driven into or through the State.

To punish persons driving horses, mules, or cattle from their usual and customary range.

Placing the Montana Historical Society under State control.

Providing for the incorporation of accident-insurance companies doing business on the assessment plan.

Authorizing counties and cities to make contracts for the abatement of injurious and unhealthful smoke and fumes, and to issue bonds for that purpose.

Permitting the purchase, consolidation, lease, sale, and aiding of one railroad by or with another.

Defining the conditions on which foreign corporations may do business in the State.

**State Lands.**—For the fiscal year 1893 there were 170,438.69 acres selected on account of State institutions from the public domain. The total selections of land for these institutions have amounted to 353,689.35 acres. Of this amount the State relinquished 1,382.94 acres, leaving the net selections 352,297.41 acres.

**Silver Conference.**—A convention of representatives from the mining districts of the State, called by the mine owners, met at Helena on July 6, at which a permanent organization was formed, to be known as the Montana Free Coinage Association. Delegates to attend the sessions of the Bimetallic League at Chicago, and to represent the silver interests of the State at the extra session of Congress, were also chosen. Resolutions were adopted, including these :

We declare it to be our deliberate conviction that, in view of the unrequited labors of prospectors, the work expended upon the development of unprofitable mines, the losses on unproductive plants, and all the factors that enter into the ultimate cost of the silver product of the West, every ounce of silver taken from the earth and prepared for the mint represents its full coinage value at a ratio to gold of sixteen to one.

That the commerce of the world calls for the use of silver and gold as money, not only for the purpose of affording the necessary volume of currency, but equally that each may correct the occasional aberration in the value of the other.

That as the history of the depreciation of silver is a history of adverse legislation, without which its parity to gold would have been maintained without doubt or difficulty, we demand that Congress shall be the first to retrace its steps and repeal the measures it has enacted to the detriment of that metal.

That we appeal to the laboring classes of the Union, without regard to section, to give their support to the policy of free coinage.

## N

### NATIONAL ACADEMY OF SCIENCES.

Officers : President, Othniel C. Marsh ; Vice-President, Francis A. Walker ; Foreign Secretary, Wolcott Gibbs ; Home Secretary, Asaph Hall ; Treasurer, John S. Billings. Two meetings were held during 1893. The first or stated meeting was held in Washington, D. C., on April 18-20, when the following papers were read :

"Helen Kellar," by Alexander G. Bell ; "Peptonization in Gastric Digestion," by Russell H. Chittenden ; "On the Systematic Relations of the Ophidia," by Edward D. Cope ; "The Classification of the Gastropodous Mollusks," by Theodore Gill ; "Intermediate Orbits," by George W. Hill ; "On the Nature of Certain Solutions, and on a New Means of Investigating them," by Matthew C. Lea ; "The Relations of Allied Branches of Biological Research to the Study of the Development of the Individual, and the Evolution of Groups," "The Endosiphonoidea (Endoceras, etc.), considered as a New Order of Cephalopods," "A New Type of Fossil Cephalopods," and "Results of Recent Researches upon Fossil Cephalopods of the Carboniferous," by Alpheus Hyatt ; "On a Potentiality of Internal Work in the Wind" and "On a Bolograph of the Infra-red Solar Spectrum," by Samuel P. Langley ; "The Relations between the Statistics of Immigration and the Census Returns of the Foreign-Born Population of the United States" and "Statistical Data for the Study of the Assimilation of Races and Nationalities in the United States," by Richmond Mayo-Smith ; "Fundamental Standards of Length and Mass," "Telegraphic Gravity Determinations," and "Comparison of Latitude Determinations at Wai-kiki," by Thomas C. Mendenhall ; and "Monograph of the Bombycine Moths of America, North of Mexico: Part I.—Notodontidae," by Alpheus S. Packard ; also a "Biographical Memoir of General Montgomery C. Meigs," by Henry L. Abbott ; and a "Memoir of Julius E. Hilgard," by Eugene W. Hilgard.

The following paper was read by a non-member :

"A One-Volt Standard Cell," by Henry S. Carhart, introduced by Thomas C. Mendenhall.

No new members were elected at this session, owing to the impossibility of agreeing upon candidates, but three foreign associates were chosen : François Felix Tissandier, of Paris, whose specialty is astronomy ; Karl Ludwig, of Leipzig, whose specialty is physiology ; and Karl Ram-melsberg, of Berlin, whose specialty is chemistry. At this session also the third presentation of the Henry Draper medal was made to Henry C. Vogel, of Potsdam, Germany, for his researches in astronomical physics.

The scientific session was held in Albany, N. Y., on Nov. 7-9, when the following papers were read :

"Additional Researches on the Motion of the Earth's Pole," by Seth C. Chandler ; "Certain Histological Relations between the Subalpine Plants of the White Hills and of the Labrador Coast," by George L. Goodale ; "Double Stars," by Asaph Hall ; "The Palæontology of the State of New York—the Present Condition of the Work," and "The Geological Map of the State of New York," by James Hall ; "On a New Form of Telescopic Objective, as applied to the Twelve-Inch Equatorial of the Dudley Observatory," by Charles S. Hastings ; "A New Process of Printing in Color," by Edward S. Morse ; and "American Palæozoic Cockroaches," by Samuel H. Scudder ; also a "Biographical Memoir of Amos H. Worthen," by Charles A. White ; and a "Biographical Memoir of William P. Trowbridge," by Cyrus B. Comstock.

The following papers were read by non-members :

"On Reaction—Times and the Velocity of the Nervous Impulse," by J. McKeen Cattell and Charles S. Dolley, introduced by George F. Barker; "Latitude Determinations at the Sayre Observatory," by Charles L. Doolittle, introduced by Lewis Boss; "Insect Voices," by Joseph A. Lintner, and "Edible and Poisonous Fungi," by Charles H. Peek, introduced by James Hall; and "On the Structure and Development of Trilobites," by Charles E. Beecher, introduced by A. Hyatt.

At this meeting the annual report of the President of the Academy was considered before presenting it to Congress, and for this purpose a special stated session was held on Nov. 8. The new Dudley Observatory was inspected by the members on Nov. 8, and its opening made simultaneous with the meeting of the Academy. Its director, Lewis Boss, is a member of the Academy. Its original opening, in 1856, was likewise celebrated by an unusual gathering of scientists in Albany, advantage of which was then taken to hold the meeting of the American Association for the Advancement of Science there.

**NEBRASKA**, a Western State, admitted to the Union March 1, 1867; area, 77,510 square miles. The population, according to each decennial census since admission, was 122,993 in 1870; 452,402 in 1880; and 1,058,910 in 1890. Capital, Lincoln.

**Government.**—The following were the State officers during the year: Governor, Lorenzo Crounse, Republican; Lieutenant-Governor, Thomas J. Majors; Secretary of State, John C. Allen; Auditor of Public Accounts, Eugene Moore; Treasurer, Joseph S. Bartley; Attorney-General, George H. Hastings; Superintendent of Public Instruction, Alexander K. Goudy; Commissioner of Public Lands and Buildings, A. R. Humphrey; Chief Justice of the Supreme Court, Samuel Maxwell; Associates, T. L. Norval, A. M. Post; Commissioners of Supreme Court, Robert Ryan, John M. Ragan, Frank Irvine.

**Valuations.**—For 1893 the assessed valuation of property in the State was \$194,733,124.73, against \$186,432,376.71 for 1892. Included in this assessment were 15,289,859 acres of improved land, valued at \$60,299,544; 13,041,457 acres of unimproved land, valued at \$27,051,620; 176,425 improved town and city lots, valued at \$30,888,037; 355,751 unimproved town and city lots, valued at \$9,833,807; 694,232 horses, valued at \$8,455,447; 1,447,664 cattle, valued at \$6,057,325; 45,520 mules, valued at \$658,275; 159,347 sheep, valued at \$128,842; 1,283,265 hogs, valued at \$1,707,183; railroad sleeping- and dining-cars, \$28,668,822; telegraphs, \$192,051.

**Legislative Session.**—The regular biennial session of the Legislature began on Jan. 3 and continued through April 8. Politically, each House was divided as follows: Senate—Republicans 14, Independents 14, Democrats 5; House—Republicans 48, Independents 40, Democrats 12. An organization of the House was effected at the opening session by a combination between the Independents and Democrats; Representative Gaffin, Independent, was elected permanent presiding officer, and the minor officers were divided. The Senate on the second day secured a Republican as temporary clerk by the refusal of the Independents to vote; and on the fourth day Senator Correll, Republican, was elected president *pro tem* by Republican and Democratic

votes. After a delay of several days and numerous attempts to elect a permanent clerk, an agreement was reached between the Independents and Democrats, by which the former obtained the clerkship and the other Senate offices were divided between the two parties. The choice of a successor to United States Senator A. S. Paddock devolved upon this Legislature. As provided by law, the first ballot was taken in each House separately on Jan. 17. At this time none of the three parties had attempted to make a caucus nomination, and the votes were scattered among more than 30 of the 43 avowed candidates. In the House, Paddock, Republican, received 28 votes; Lieut.-Gov. Majors, Republican, 4; John M. Thurston, Republican, 3; John H. Power, Independent, 22; William A. McKeighan, Independent, 4; the remaining votes being divided among 27 other candidates. In the Senate Paddock had 5 votes, Majors 3, Thurston 1, Powers 8, scattering 15. On Jan. 18, on the first joint ballot, Paddock received 32 votes, Powers 27, Majors 7, McKeighan 6, scattering 59. A caucus of the Independents was held on Jan. 19, at which John H. Powers was made the party candidate, and on the following day he received 54 votes, the full party strength. But as he was not fortunate in winning Democratic support, he was superseded as a candidate on Feb. 1 by W. L. Greene, who proved no more successful in this regard. On Feb. 2 the full Republican strength was united for the first time in the support of John M. Thurston, who had been selected as the party candidate. The vote on this day stood as follows: Thurston 61, Greene 56, James E. Boyd 3, scattering 10. A few days later the name of Greene was dropped by the Independents, and Judge William V. Allen became their candidate. On the joint ballot on Feb. 6 he received 65 votes to 61 for Thurston, 3 for Boyd, and 2 for J. S. Morton. On the final ballot, taken on Feb. 7, he secured the entire Democratic and Independent support and was elected by a vote of 70 to 59 for Senator Paddock, to whose support the Republicans returned on this ballot.

The most important legislative result of the session was the passage of a voluminous act, known as the Newberry law, establishing the maximum freight rates chargeable by railroads. Several hundred commodities are mentioned in the act and classified for the purpose of fixing the rate. Extended tables of charges for different distances and for car-load or less than car-load lots are included in the act. It is further provided that, when any railroad shall in a proper action show by competent testimony that the schedule of rates prescribed by the act is unjust and unreasonable, the court may issue an order directing the State Board of Transportation to permit such railroad to raise its rates to any sum in the discretion of the board, provided that in no case shall the rate so raised be fixed at a higher sum than that charged by such railroad on Jan. 1, 1893. The State Board of Transportation is empowered to reduce the rates established by the act whenever the majority of the board shall deem it just and reasonable. The law was to take effect on Aug. 1, 1893.

In order to relieve the pressure of business before the State Supreme Court, the justices thereof were authorized to appoint 3 commissioners, no



2 being of the same political party, who shall hold office for three years, and should assist the court in the performance of its duties. It was made unlawful for any person, association, or corporation to bring into the State any person or persons or association of persons for the purpose of discharging the duties devolving upon police officers, sheriffs, or constables in the protection of private property, and such officers were prohibited from appointing nonresidents as deputies.

All companies, firms, or individuals issuing rebate vouchers or certificates or making promises, verbal or written, to allow a reduction of price charged upon the condition of sale, were required to deposit, in such institutions as the State Auditor should designate, sums of money equal to such rebate vouchers or certificates issued or promises made. All such vouchers, certificates, and written promises shall be transferable by endorsement and shall be a legal lien upon such deposits.

A further sum of \$35,000 was appropriated for the benefit of the State exhibit at the World's Columbian Exposition, and \$10,000 was set apart to be used by the Governor in securing attorneys to aid in prosecuting criminal proceedings against officials or employees who may have defrauded the State, and in conducting civil actions against such persons and their bondsmen.

Congress was memorialized to call a convention of the several States for the purpose of proposing a constitutional amendment, securing the election of United States Senators by direct vote of the people, and the legislatures of sister States were requested to co-operate in this movement.

Other acts of the session were as follow:

To provide for the appointment of police matrons in cities.

Declaring all persons entitled to full and equal enjoyment of the accommodations, facilities, and privileges of inns, restaurants, public conveyances, barber shops, theaters, and other places of amusement.

To provide for the parole of prisoners, to place the power therefor in the Governor.

To provide for ditching and draining wet or swamp land, and to protect them by levees.

To promote the development of water power for manufacturing and other industrial purposes.

To prohibit lumber dealers, coal dealers, and other persons or companies from entering into any contract to pool or fix the price at which lumber or coal shall be sold.

Providing for a recount, on or before May 1, 1893, of the votes cast for constitutional amendments in the November election. [The result was not changed by this recount, both amendments failing to secure a majority of the votes cast.]

**Education.**—For the year 1892-'93 the enrollment of students at the State University was as follows: Graduate students, 21; academic and industrial college, 532; college of law, 53; school of art and music, 141; special students, 82; preparatory course, 343; total in all departments, 1,086. This institution is one of the most successful of its class in the United States.

**Penitentiary.**—On Oct. 26 the State suffered a loss of nearly \$100,000 by the burning of one of the large workshops on the Penitentiary grounds. There was no insurance, and no funds of the State are now available for rebuilding.

**Militia.**—The National Guard of the State consists of 1,087 men, organized into two regiments of infantry, 1 troop of cavalry, and 1 battery.

**Settlement of the Sand Hills.**—The tide of immigration that between 1880 and 1890 poured into the vacant lands of Nebraska has materially diminished. Reports of land officers in the various districts where nearly 10,000,000 acres of Government lands lie vacant indicate that for several years past the bulk of the business of the land officers has been in the line of perfecting titles. By far the greater portion of the government lands suitable for cropping without irrigation is now gone. Most of the valleys and draws in what has been the "semiarid" region of the State are occupied by farmers and small stock raisers. The remainder, which is estimated approximately at 10,000,000 acres, lies chiefly in the northwestern part of the State, occupying an area 180 miles by 100.

From the time of Prof. Aughey's first report on the geology of Nebraska this section has been known as the "sand-hill country." The greater portion lies north of the Platte and west of the ninety-ninth parallel, continuing northward into South Dakota.

**Impeachment of State Officers.**—Investigations into the conduct of State institutions made this year by legislative committees developed the existence of various abuses and frauds in the furnishing of supplies to the State, and in March the Lower House selected a committee to examine the evidence taken at these investigations. A majority of this committee, toward the end of March, reported a recommendation that measures be taken to impeach the members of the State Board of Public Lands and Buildings. Articles of impeachment were accordingly drawn and submitted to the joint Assembly early in April. Charges were made in these articles against Secretary of State Allen, Ex-Treasurer J. E. Hill, Ex-Auditor Benton, Ex-Attorney-General Leese, Attorney-General Hastings, and Commissioner A. R. Humphrey. Several of the charges related to the construction of a new cell house at the State Penitentiary, wherein one W. H. Dorgan, agent of the board, was alleged to have defrauded the State through the failure of the board to perform its proper duties. Charges were also made that the board had fraudulently audited and paid the extravagant bills contracted by this agent. Another article charged the board with failure to exercise proper care in auditing the accounts and expenses of the insane asylum, whereby large sums were lost to the State. There were other allegations of minor importance. The Legislature adopted the report of the committee, and a few days later the State Supreme Court convened as a court of impeachment to try the charges. The trial of the case was postponed till May 1; the taking of testimony and arguments of counsel occupied several weeks, and a decision was not rendered till June 5. Although the defendants Hastings, Allen, and Humphrey were then acquitted of misdemeanors sufficiently grave to justify their removal from office, the court found that the action of the Board of Public Lands and Buildings in selecting Dorgan as its agent was highly censurable and wanting in an

intelligent regard for the interests of the public. The defendants Benton, Leese, and Hill were discharged on the ground that the Legislature had no legal authority to impeach ex-officials.

**Maximum Freight Rates.**—By the terms of the Newberry law, enacted this year, its provisions were to take effect on Aug. 1. On July 28, the Chicago, Burlington and Quincy road filed a bill in the Federal court at Omaha against the State Board of Transportation, asking that the latter be restrained from putting the rates into effect, on the ground that the law was unconstitutional. On the following day certain stockholders of the Chicago and Northwestern, the Chicago, Burlington and Quincy, the Union Pacific, and the Missouri Pacific companies began suits against the State board and the respective officials of these roads, asking for a similar injunction. Other railroads affected by the law brought similar suits. Answers were filed by the defendants in these suits on or before Sept. 4, and testimony was taken in October and November. No decision had been reached at the close of the year, and the temporary injunctions issued upon the filing of the respective bills, restraining the enforcement of the law, had not been modified up to that time.

**The State Depository Law.**—Late in January announcement was made of the failure of the Capital National Bank of Lincoln, one of the most important banking institutions of the State. This news was soon followed by other developments showing that very little, if anything, would be saved from the wreck, on account of the financial irregularities of some of the bank officials. The institution had been designated, in accordance with the act of 1891, as a depository for State funds, its bond to the State having been approved by the Governor, Attorney-General, and Secretary of State; and at the time of the failure it contained deposits of State funds amounting to about \$236,000. Only a few days before the failure the retiring State Treasurer, J. E. Hill, had turned over to his successor the funds in his hands, including certificates of deposit on this institution amounting to \$236,364.60. As it was during the term of Treasurer Hill that the depository law had been passed and the deposits made, a movement was begun to recover from him and his bondsmen the amount of the loss suffered by the State. A suit on his bond was brought by the State in the district court of Douglas County, where some of the defendants resided. The ex-Treasurer filed objections to the jurisdiction, and his objections were sustained. In another case, decided by the same court on the same day, a view of the law was taken which would seem to relieve the ex-Treasurer and his bondsmen from liability. This was the case of *Hopkins vs. Scott*, wherein it was decided that the State depository law of 1891 was constitutional and valid.

In May the president of the defunct bank, C. W. Mosher, was indicted in the Federal court at Omaha for official irregularities and was convicted and sentenced to imprisonment.

**Political.**—A justice of the Supreme Court and 3 regents of the State University were chosen by popular election this year. The first nominating State convention was held by the Prohibitionists, at Lincoln, on Aug. 23, and re-

sulted in the selection of Mrs. Ada M. Bittenbender for the judicial officer, and of A. E. Ricker, Mrs. C. H. Walker, and J. P. Heald for regents.

On Sept. 5 the Populist State Convention met at Lincoln, and nominated Silas A. Holcomb for justice and E. L. Heath, A. A. Monroe, and C. L. Brainard for regents.

The Democratic State Convention, held at Lincoln on Oct. 4, nominated Frank Irvine for justice, and M. M. Doolittle, J. M. Pyle, and Charles A. Klonan for regents.

On Oct. 5 the Republicans met in State convention at Lincoln, and nominated Thomas O. C. Harrison for justice, and H. D. Estabrook, C. D. Weston, and C. W. Kaley for regents. In the election the Republican ticket was successful. For justice of the Supreme Court, Harrison received 72,632 votes; Holcomb, 65,666; Irvine, 37,545; and Bittenbender, 6,357.

**NETHERLANDS**, a constitutional monarchy in western Europe. The legislative power is vested in the States General, consisting of 2 Houses. The First Chamber is composed of 50 members elected for nine years by the provincial states from among the highest taxpayers or high public functionaries in office or retired. The Second Chamber has 100 members, who are elected for four years by direct popular suffrage. The number of electors under the Constitution of Nov. 30, 1887, is about 250,000, or 1 in 15 of the population. The sovereign has power to dissolve either or both of the chambers, and in case of a dissolution is bound to order new elections within forty days and call a session within sixty days. All legislation must be initiated in the Second Chamber. The throne is hereditary in the male line in the house of Orange-Nassau in the order of primogeniture, but is transmissible to female heirs on the extinction of the male stem. This contingency occurred on the death, Nov. 23, 1890, of King Willem III, who was succeeded by his infant daughter, Willemina, born Aug. 31, 1880, whose mother, Queen Emma, born Aug. 2, 1858, was appointed Regent. The ministry, constituted Aug. 20, 1891, is composed as follows: President of the Council and Minister of Foreign Affairs, G. van Tienhoven; Minister of the Interior, J. P. Tak van Portvliet; Minister of Finance, N. G. Pierson; Minister of Justice, H. J. Smidt; Minister of the Colonies, Baron van Dedem; Minister of Marine, J. C. Jansen; Minister of War, A. L. G. Seyffardt; Minister of Public Works and Commerce, C. Lely.

**Finances.**—The budget for 1893 makes the total receipts of the treasury 127,343,890 guilders (1 guilder = 40 cents), of which 25,200,000 guilders are derived from the excise on spirituous liquors, 17,075,000 guilders from other excise duties, 11,614,000 guilders from direct personal taxes, 11,590,000 guilders from land taxes, 20,718,000 guilders from stamps and registration and succession duties, 5,730,000 guilders from the income tax, 4,528,000 guilders from patents, 5,736,250 guilders from customs, 2,330,000 guilders from domains, 7,400,000 guilders from posts, 1,359,000 guilders from telegraphs, 1,400,000 guilders from pilotage dues, 661,500 guilders from the lottery, 230,850 guilders from the guarantee of gold and silver articles, 136,000 guilders from hunting and fishing licenses, 3,945,000 guilders



from railroads, 6,930 guilders from mining royalties, and 7,683,360 guilders from other sources. The total expenditures are estimated at 137,860,022 guilders, of which 37,408,988 guilders are for the public debt, 22,265,552 guilders for war, 15,775,910 guilders for marine, 12,297,699 guilders for the interior, 5,488,669 guilders for justice, 660,506 guilders for the executive, 783,862 guilders for foreign affairs, 804,000 guilders for the Queen's household, 19,129,493 guilders for financial administration, payments to communes, and public worship, 21,825,658 guilders for public works, 1,369,690 guilders for the central administration of the colonies, and 50,000 guilders for unforeseen expenses.

The public debt in 1893 amounted to 1,083,966,950 guilders, not counting 15,000,000 guilders of paper money. Of the funded debt, 378,535,600 guilders pay 3½ per cent. interest, having been converted in 1892 from 4-per-cent. obligations, 610,310,400 guilders pay 2½ per cent., and 89,072,250 guilders pay 3 per cent.

**The Army and Navy.**—The active army is recruited under the law of 1861 both by voluntary enlistment and by conscription. The volunteers, who constitute one third of the army, are engaged for six or eight years. The conscripts are drawn by lot from among the able-bodied young men of the age of twenty. The annual contingent is 10,400. Substitution and the exchange of numbers after the drawing are permitted. Service with the colors lasts only twelve months, after which the men are called out to drill six weeks for six successive years. The peace effective for 1893 was as follows: General staff, 63 officers; administration, 133 officers; 46 battalions of infantry, 1,060 officers and 11,408 men; 16 squadrons of cavalry and 3 *dépôts*, 143 officers and 2,338 men, with 4,115 horses; 21 batteries of field artillery and 6 companies of train, 247 officers and 1,729 men, with 2,349 horses; 40 companies of fortress artillery, 217 officers and 1,695 men; 4 companies of artillery for armored forts, 15 officers and 202 men; 22 companies of engineers, 124 officers and 1,128 men; 3 companies of sanitary troops, 3 officers and 108 men; 12 sections of gendarmerie, 15 officers and 641 men, with 406 horses; 2 companies attached to the recruiting office for the colonies, 13 officers and 62 men; total, 2,033 officers and 19,311 men.

The navy in 1893 consisted of 6 armoredads, 13 monitors, 5 river gunboats, 31 other gunboats, 37 torpedo boats, 6 frigates, 3 corvettes, 6 schooners, 2 paddle-wheel steamers, 3 stationary vessels, 16 school-ships, and 1 transport; in all, 129 vessels, armed with 282 guns over 10 centimetres and 467 of smaller caliber. There were building 3 armorclads, of 3,400 tons each, and 1 deck-protected cruiser, of 4,600 tons.

**Communications.**—The length of railroads in 1890 was 1,839 miles, of which the state owned 986. There are 1,907,170 miles of canals and 3,000 miles of other navigable water. The state telegraph lines in 1891 had a total length of 3,311 miles, with 11,788 miles of wires. The receipts of the post-office were 7,050,784 guilders and the expenses 5,275,676 guilders.

**Commerce.**—The amount of the special commerce for 1892 and the shares of the different countries in the trade may be seen in the following table, which gives the values in guilders:

COUNTRIES.	Imports.	Exports.
Great Britain.....	266,500,000	825,800,000
Germany.....	274,700,000	504,200,000
Belgium.....	184,800,000	160,400,000
France.....	20,900,000	9,000,000
Sweden and Norway.....	16,900,000	10,000,000
Russia.....	38,500,000	3,100,000
Roumania.....	27,000,000	.....
Turkey.....	8,100,000	7,000,000
Italy.....	4,700,000	4,700,000
Spain.....	22,000,000	1,700,000
Netherlands East India.....	177,200,000	62,500,000
British East India.....	41,900,000	600,000
Africa.....	6,800,000	7,400,000
United States.....	148,900,000	23,300,000
Brazil.....	2,900,000	.....
Peru and Bolivia.....	13,600,000	.....
Other countries.....	27,200,000	14,200,000
Total.....	1,282,100,000	1,183,900,000

In these totals are included the precious metals, of which 15,400,000 guilders were imported and 6,200,000 guilders exported. Of the total value of the imports, 362,300,000 guilders represent articles of alimentation, 303,700,000 guilders raw materials, 217,700,000 guilders manufactured articles, and 383,000,000 guilders miscellaneous merchandise. Of the total value of the exports, 343,100,000 guilders represent alimentary substances, 214,300,000 guilders raw materials, 217,200,000 guilders manufactured articles, and 353,100,000 guilders other merchandise. The total value of the special imports for 1891 was 1,356,000,000 guilders. The following were some of the principal articles: Cereals, 230,600,000 guilders; drugs, 222,600,000 guilders; iron and steel, and manufactures thereof, 124,000,000 guilders; textiles, raw and manufactured, 112,200,000 guilders; coal, 45,100,000 guilders; copper, 40,800,000 guilders; rice, 40,700,000 guilders; seeds, 35,600,000 guilders; coffee, 34,600,000 guilders; timber, 28,100,000 guilders. The total value of the domestic exports for 1891 was 1,140,400,000 guilders. Among the large exports the following are worthy of note: Drugs and chemicals, 157,200,000 guilders; grain and flour, 118,400,000 guilders; textiles and textile manufactures, 108,600,000 guilders; iron and steel and manufactures thereof, 83,000,000 guilders; copper manufactures, 24,700,000 guilders; paper, 23,900,000 guilders; skins, 21,800,000 guilders; flax, 18,900,000 guilders.

**Navigation.**—There were entered 8,802 vessels, of 15,824,000 metric tons, with cargoes and 563, of 361,000 metric tons, in ballast in 1891, and cleared, 5,799, of 8,731,000 metric tons, with cargoes and 3,463, of 7,370,000 metric tons, in ballast. The merchant navy consisted in the beginning of 1892 of 143 steamers, of 457,000 metric tons, and 478 sailing ships, of 370,000 metric tons.

**The Dutch East Indies.**—C. Pynacker Hordyck, Governor-General, was succeeded in 1893 by Jonkheer C. A. H. van der Wyck. Java and Madura, forming one colony, are divided into 22 residencies, administered by residents, who have under them assistant residents and *contrôleurs* to direct the various grades of native officials. The culture system, which involves the forced labor of the natives, has been abolished in regard to sugar and other products, but is still retained for the cultivation of coffee on Government lands

in Java and Madura and in Menado and the west coast of Sumatra. The area and population of the various possessions are estimated as follow:

POSSESSIONS.	Sq. kilometres.	Population.
Java and Madura.....	131,733	23,862,820
Sumatra and Riau.....	449,748	3,186,100
Banca.....	12,681	82,900
Billiton.....	4,807	40,100
Dutch Borneo.....	528,900	1,153,300
Celebes.....	120,917	989,000
Menado.....	67,462	586,500
Dutch New Guinea.....	397,204	238,000
Amboine.....	48,580	251,100
Ternate.....	55,792	106,000
Timor.....	44,406	760,000
Bali and Lombok.....	10,831	1,355,900
Total.....	1,873,061	31,614,000

Of the inhabitants of Java and Madura computed for 1891. 23,559,727 were natives, 42,504 Europeans, 243,006 Chinese, 14,047 Arabs, and 3,536 Hindus and others. The population of Batavia, the capital of Java and Netherlands India, was 104,590 in 1891; of Surabaya, 117,986; of Surakarta, 100,291.

The budget of Netherlands India for 1893 makes the total receipts 130,464,898 guilders, of which 29,882,524 guilders come from sales of Government coffee, 5,643,462 guilders from sales of tin, 178,200 guilders from sales of cinchona, 18,567,000 guilders from the opium monopoly, 12,836,000 guilders from customs, 16,157,000 guilders from the land tax, 8,297,000 guilders from the duty on salt, 1,738,000 guilders from posts and telegraphs, 8,388,000 guilders from railroads, and 28,777,712 guilders from other sources. The expenses are estimated at 136,588,058 guilders, 25,489,592 guilders in Holland and 111,098,466 guilders in India, leaving a deficit of 6,123,160 guilders.

The army of the Dutch East Indies, which is recruited by enlistment only, in 1893 numbered 537 officers and 2,544 men in the general staff and auxiliary services, 707 officers and 26,715 men in the infantry, 33 officers and 853 men in the cavalry, 90 officers and 2,707 men in the artillery, and 10 officers and 584 men in the engineers; total, 1,377 officers and 33,403 men. Of the rank and file, 13,593 were Europeans. The naval force consisted in 1893 of 1 protected corvette, 16 screw steamers, 5 paddle steamers, and 1 torpedo boat, carrying altogether 79 large and 77 small cannons. The *personnel* consisted of 627 officers, 557 surgeons, mechanics, etc., and 5,939 seamen, exclusive of 2,921 naval militiamen, 1,204 native sailors, and 55 officers and 2,106 men in the marine infantry.

The total value of the imports in 1891 was 146,925,000 guilders of merchandise and 13,249,000 guilders of specie, of which 5,602,000 guilders of merchandise and 4,000,000 guilders of specie were imported on Government account. The exports of merchandise were 17,148,000 guilders on Government account and 158,572,000 guilders by individuals; in all, 175,896,000 guilders. The specie export was 654,000 guilders. The exports of the principal articles of domestic produce were in 1890 as follow: Sugar, 51,500,000 guilders; coffee, 36,600,000 guilders; tobacco, 32,300,000 guilders; tin, 9,200,000 guilders; gutta-percha, 4,600,000 guilders; pepper,

4,200,000 guilders; indigo, 3,300,000 guilders; rice, 2,900,000 guilders; dammar, 2,600,000 guilders; gambier, 2,600,000 guilders; tea, 2,200,000 guilders; copra, 2,000,000 guilders; skins, 2,000,000 guilders.

The railroads in operation in 1893 had a total length of 1,361 kilometres, of which 1,258 were in Java and 103 in Sumatra. There were 173 kilometres in Java and 180 in Sumatra under construction. The telegraphs belonging to the state had a total length in 1893 of 7,852 kilometres, with 9,095 kilometres of wires, besides 910 kilometres of cables.

**Legislation.**—Two important projects of law that were brought before the States-General by the Government in 1893 were not readily adopted because strong divergent opinions were held on both subjects. One was a measure for a wide extension of the suffrage, and the other a thorough revision of the military law making liability to service equal and nearly universal. The Constitution of 1887 conferred the right of suffrage on all male citizens twenty-three years of age who pay a land tax of 10 guilders or more or a direct personal tax higher than the limit of partial exemption or are occupiers of the class defined in the law. It provided for a further extension of the franchise, and Tak van Portvliet, in his electoral bill, aimed to make suffrage as nearly universal as the Constitution allowed. He proposed to make every man a voter who can make his application in writing and is able to support himself and his family if he has one. This would exclude only those who are unable to read and write and recipients of public or private charity. The division of opinion on the bill had no relation to the old party lines. The Radicals alone were solid in its support. The Liberals and the Conservatives were split into discordant factions, and the most uncompromising opponents of the reform were the members of the Liberal party, who feared the Social Democrats would not only become powerful in the Chamber, but would soon secure the same franchise for communal electors and make changes in public taxation and expenditure that would divert the resources of those who have for the benefit of those who have not. Even a section of the Socialists condemned the Government bill because it stopped short of universal suffrage. Among the Catholic Clericals and the Antirevolutionary or Protestant party many were hostile to the bill, and almost as many approved its principle. In the First Chamber during the discussion of the budget the ministry was implored not to make a Cabinet question of the electoral bill, for in case of a dissolution the parties would be thrown into confusion. Van Tienhoven, considered one of the moderate men in the Cabinet, declared that the ministers were agreed and collectively responsible.

The project for the reorganization of the service in the army and navy was intended to do away with the system of substitution, making personal military service obligatory in the standing army, the militia, and the Landsturm. The proposed period of service is nine years, of which three are spent in the active army, three in the sedentary service, and three in the reserve. The maximum annual contingent for the army and navy together is fixed at 11,500 men. Recruits



are not allowed, as heretofore, to find paid substitutes.

**The War in Acheen.**—The Kingdom of Acheen, or Atjeh, in the extreme north of Sumatra, having an area of 53,100 square kilometres and a population estimated at 444,600, rebelled against the Dutch rule in 1873, and the inhabitants, who are a fighting race, given to piracy and encouraged in smuggling by foreign traders, have been at open war with the Government ever since. The country was made a governorship in 1878. The authorities, though the expenses of the hostilities have been the cause of the chronic deficit in the budget, and though the losses of men, chiefly from beri-beri and other diseases, have been very great, have been reluctant to develop the military power necessary to crush the rebels, who would fight till they were exterminated, and have latterly contented themselves with occupying strategic points and blockading the coast. In 1893 the blockade was partially relaxed. The rebels, who are well armed with weapons smuggled in by merchants of Singapore, continue to attack the Dutch outposts and the tramways and industrial works established in the country, to cut telegraph lines, and raid cattle farms. In March, 1893, an engagement took place on the Tamiang river, in which the Dutch killed 63 men and captured 8 forts, 7 cannons, and a quantity of rifles, losing 6 killed and 45 wounded.

**NEVADA**, a Pacific coast State, admitted to the Union Oct. 31, 1864; area, 110,700 square miles. The population, according to each decennial census, was 42,491 in 1870; 62,266 in 1880; 45,761 in 1890. Capital, Carson City.

**Government.**—The following were the State officers during the year: Governor, Roswell K. Colcord; Republican; Lieutenant-Governor, Joseph Poujade; Secretary of State, Olin H. Grey; Comptroller, R. L. Horton; Treasurer, John F. Egan; Attorney-General, J. D. Torreyson; Superintendent of Public Instruction, Orvis Ring; Surveyor-General, John E. Jones; Justices of the Supreme Court, R. R. Bigelow, M. A. Murphy, C. H. Belknap; Clerk, J. Josephs; Regents of the University, E. T. George, J. W. Haines.

**Legislative Session.**—The sixteenth session of the State Legislature began on Jan. 16 and ended on March 6. On Jan. 24 Hon. William M. Stewart was re-elected United States Senator for the full term of six years, receiving a unanimous vote in each House. An act was passed at this session making all debts, bonds, or other money obligations payable in standard silver or gold coins, or other legal money authorized by Congress, anything in the contract or obligation to the contrary notwithstanding. Provision was made for obtaining the sense of the people on the question whether United States Senators should be elected by direct popular vote. Public officers were required to purchase all supplies for the State or counties of resident merchants and business men, provided such supplies can be obtained at an advance of not more than 10 per cent. over San Francisco prices, freight added. The counties were authorized to aid the Utah and Nevada Air-Line Railroad by issuing bonds to the railroad company to an amount equal to \$3,000 for every mile of road within their respective limits. An annual tax levy of

90 cents on each \$100 was authorized for the following purposes: Sixty-five cents for the general fund, 7 cents for the interest fund, 9.5 cents for the State interest and sinking fund, 3.5 cents for the Indigent Insane Asylum interest and sinking fund, and 5 cents for the general school fund. In order to prevent a deficiency in the general fund, authority was given for borrowing \$92,000 at 4 per cent. interest from the State school fund, and a similar loan of \$20,000 from the University fund. The sum of \$10,000 was appropriated for an exhibit at the Columbian Exposition. The Governor's salary was increased to \$10,000.

Other acts of the session were as follow:

Providing for the management and control of the State Agricultural Society by the State.

Making it lawful for any person to kill any wild unbranded stallion running at large on the Government range lands.

Repealing the act of 1891 consolidating certain State offices, and making the Secretary of State *ex officio* clerk of the Supreme Court and State Librarian, and the Governor's private secretary *ex officio* Adjutant-General.

Licensing the sale of cigarettes.

To prevent dissemination of contagious diseases among sheep.

Extending the sessions of the Legislature from forty to fifty days.

Providing a new law for the protection of game.

Providing a new law for the government of the State militia.

Requiring administrators, trustees, guardians, or managers of estates to render accounts every three months.

To prevent the spreading of contagious diseases, and to establish a State board of health.

Providing a new road law.

Repealing the irrigation law of 1889.

**Constitutional Amendments.**—At the session of 1891 28 proposed amendments to the State Constitution were introduced and passed through both Houses, were entered in their respective journals, and were published in full in the statutes and in the printed proceedings of the Legislature. No other publication of them was made. On Feb. 3, 1893, the next succeeding Legislature, being then in session, requested the Secretary of State to return to each House these proposed amendments for further action according to the Constitution; but the Secretary refused, on the ground that they were not in a condition to be returned, not having been published for three months next preceding the last general election. Thereupon the Attorney-General, at the request of the Legislature, applied to the State Supreme Court for a writ of mandamus to compel the Secretary to return them as requested. A speedy hearing was had, and on Feb. 8 the court announced its decision, granting the writ. The State Constitution provides that, after proposed amendments have been passed in both Houses, they "shall be referred to the Legislature next to be chosen, and shall be published for three months next preceding the time of making such choice," after which the next Legislature, if it approves them, shall make provision for their submission to the people. The question before the court was, whether a publication in the statutes and legislative journals, such as was made in this case, was a publication for three months next preceding the time of making such choice," within the meaning of the State Consti-

tution, and the court held that it was. In compliance with this finding of the court, the Secretary of State at once transmitted the amendments to the Legislature, whereupon 25 out of the 28 were agreed to by a majority in both Houses, and provision was made for their submission to the people at the general election in 1894. These amendments contemplate important changes in the organic law.

**Mining.**—Nevada has produced in gold and silver the total of \$587,381,515. The production of the Comstock lode alone for the three quarters ending Sept. 30, 1892, was \$1,676,763.34, and the total yield of the State for 1892 was \$3,492,416.76. On account of the depressed condition of mining industries many mines are closed. Only such as are thoroughly opened and fully equipped are running at a profit.

**Annexation of Utah.**—During the year this subject was seriously discussed by the people of the State. In a public letter, dated March 23, Senator Stewart says: "Nevada has sufficient agricultural resources, if they were developed, to maintain a State, but the fact that our population has declined in the last ten years discourages immigration and prevents the development of our resources. Utah and Nevada together would present a more tempting field for investment and for residence."

**NEW BRUNSWICK**, an eastern province of the Dominion of Canada; area, 27,322 square miles; population in 1891, 321,294. Capital, Fredericton.

**Government.**—On Sept. 22, 1893, Lieut.-Gov. Sir S. L. Tilley was succeeded by Hon. John Boyd. In less than three months Mr. Boyd died, Dec. 4, 1893; and on Dec. 22 the Hon. John James Fraser, Judge of the Supreme Court of New Brunswick, received the appointment. The Provincial Cabinet consists of Hon. A. G. Blair, Attorney-General and Premier; Hon. James Mitchell, Provincial Secretary and Receiver-General; Hon. H. R. Emmerson, Chief Commissioner of Public Works; Hon. Lemuel J. Tweedie, Surveyor-General; Hon. A. S. White, Solicitor-General; Hon. Charles H. La Billois, and Hon. H. A. Connell, without office.

**Legislative Session.**—The Legislature was convened on March 9, 1893, and the session closed on April 15. Two matters of more than ordinary public interest engrossed the attention of the Legislature a considerable portion of the session—the Bathurst schools and the leases of the lumber lands of the province. In respect of the first, there had been a growing difficulty between the Roman Catholic majority and the Protestant minority of the residents of the town and village of Bathurst, in the northern section of the province, over the administration of the school law by the board of school trustees. The Protestants declared that the nonsectarian features of the law were disregarded, and that their children were submitted to the influence of the teaching of Roman Catholic doctrines; and it was also charged that the provincial Board of Education, by certain regulations favoring the Roman Catholic body, and by not using its powers to prevent infractions of the law, was largely responsible. Numerously signed petitions from all sections of the province poured into the Legislature, praying that such orders

and regulations should be made as would carry out the purposes of the school law, and thus relieve the Protestants of Bathurst from the grievance complained of. After a long and spirited debate, the Government carried a resolution to the effect that one of the judges of the Supreme or county courts should be appointed to hold an investigation at Bathurst, and make a thorough inquiry into all the matters of complaint, taking evidence on oath, and report to the Board of Education, such report to be submitted to the Legislature at its next session. Judge Fraser (since appointed Governor) was commissioned to hold the investigation, which he did during the summer, but his report has not yet been made public.

The other matter referred to—the leasing of the Crown lumber lands—came before the session in anticipation of the lapsing in July of the ten-year leases under which the lands were held, and also, through the report of a lumber commission appointed in 1890 to inquire into all branches of the lumber industry, with a view to suggesting the best policy for preserving and utilizing the timber lands. It was determined to sell the leases at public auction to the highest bidder with an upset price of \$8 a square mile, subject to a yearly renewal at \$4 a square mile for a term of twenty-four years, and the payment of stumpage dues. Under these conditions 5,692 square miles were leased at an average price of \$15.60 a square mile.

The Legislature passed 84 laws, the most important being the following:

The Expropriation act, which enlarges the powers of the Chief Commissioner of Public Works in the maintenance and repairs of the public roads and bridges.

The Provincial Lunatic Asylum and its management throwing the cost of maintenance of pauper lunatics that are not dangerously insane upon the municipalities.

Relating to registry of bills of sale.  
Protection of certain birds and animals.  
Establishment of a boys' industrial home.  
Admission of women to school boards.  
Study of the effects of alcoholic drinks in public schools.

Proceedings in equity court.  
Rights of the Crown, as represented by the Government of the province, in certain public lands and property.

Respecting the use of tobacco by minors.  
Development of mines.  
Incorporation of the Farmers' and Dairymen's Association of New Brunswick.

**Finances.**—The current revenue account for 1893 shows the receipts from all sources to be \$792,163.68; the payments, \$754,382.97. The balance against the province in 1892 of \$84,218.80 was reduced to \$46,438.09 at the close of 1893. The receipts obtained from Dominion subsidies were \$483,569.68; Crown lands, \$209,018.75; taxes of incorporated companies, \$21,827.82; succession duties, \$3,500; equity-court deposits, \$26,786.19; proceeds of bonds, \$34,500; other sources, \$12,961.24. The expenditure was distributed as follows: Administration of justice, \$17,456.99; encouragement of agriculture, \$21,799.34; expenses of Government and Legislature, \$85,172.63; education, \$182,072.32; interest on public debt, \$113,385.70; care of the insane, \$45,000; public health and hospitals, \$5,732.10;



maintenance and repairs of public roads and bridges, \$259,971.10; equity-court deposits, \$8,167.10; miscellaneous, \$15,625.69. The gross debt of the province was \$2,752,296.58; net debt, \$2,183,563.42. The gross debt is represented by bonds bearing 6 per cent., \$768,000; bearing 4½ per cent., \$280,000; bearing 4 per cent, \$1,579,000.

**Education.**—The Chief Superintendent of Education, in his annual report, shows the number of schools in operation in 1893 to be 1,624, an increase of 29 over 1892; and the number of pupils in attendance, 69,470, an increase of 561 over 1892. The number of teachers is shown to be 1,702, being about 30 in excess of 1892. The whole cost of education is \$421,383.60—borne by the Government, \$148,444.77; provided by direct taxation, \$272,938.83.

**NEWFOUNDLAND**, a British colony comprising an island of that name and the coast of Labrador; area of the island, 40,200 square miles. Capital, St. John's. The census of 1891 gave the population as 202,040, of whom 4,106 are resident on Labrador. The same census gave the number of sailing vessels engaged in the fisheries, from 20 to 60 tons, as being 1,410; of sailing vessels, from 60 tons upward, 271; boats, 4 to 30 quintals, 19,312; boats, 30 quintals and upward, 1,140; nets and seines, 32,995; cod traps, 2,541; population engaged in the fisheries, 53,502.

Sir Robert Piusent, D. C. L., one of the judges of the Supreme Court, died in April, 1893, and has been succeeded by Sir James Winter.

A general election took place on Nov. 6, 1893. The Government, of which Sir William White-way is Premier, were sustained, his supporters numbering 24 and the Opposition 12.

**Legislation.**—The following were the more important acts passed in the session of 1893:

Making provision for the appointment of a council of higher education, for holding of examinations and the awarding of prizes and diplomas and scholarships. This council is to consist of 23 members; the superintendents of education and head masters of colleges are members *ex officio*.

Constituting a department of fisheries. It appoints a commissioner of fisheries having direction of the department and the administration of all laws relating to sea and inland fisheries. A fisheries board is appointed by the Governor in Council, of which the commissioner is president, and such board is to elect an executive committee, of which the commissioner is one, at its annual meeting. This board is to make inquiries into all matters relating to the fisheries, and to make rules and regulations for the fisheries of the colony.

To regulate the practice of medicine and surgery, providing for the appointment of a medical board, two from the St. John's Medical Society, two from the Conception Bay Medical Society, and three by the Governor in Council. The secretary shall keep a list of all licensed practitioners in Newfoundland, no man being permitted to practice medicine without a license from the board.

To regulate the practice of dentistry and dental surgery.

Providing for the granting of licenses to foreign fishing vessels for purchase of bait, ice, seines, lines, and supplies for fishery and for the shipping of crews. If any vessel is found to have purchased bait, ice, or outfit, or shipped a crew without license, such vessel shall be forfeited. Foreign vessels may enter any port in the colony to obtain license, application

for such license to be made to the customs office, the fee being \$1.50 a ton.

To provide for the establishment and maintenance of a fire department.

Three acts relating to the construction of the Northern and Western Railway provide for the transference by the Government of the contract for the Hall's Bay Railway from Messrs. Reid & Middleton to R. G. Reid, and for changing the form of debentures accordingly; the issue of debentures under this contract not to exceed £937,500.

The revenue and road acts, and others relating to matters of minor importance, such as that to prevent the killing of seals on Sunday, and the act authorizing the raising of a loan of \$100,000 at 4 per cent., for the construction of branch lines of railway.

**Fisheries.**—The number of vessels engaged in the Banks cod fishery was 100; their tonnage 6,270 tons: the number of men employed was 1,392; the codfish caught, 90,467 quintals; average catch per man, 65 quintals; average catch per schooner, 905 quintals. Cod fishing is also carried on around the shores of the island and on the Atlantic coast of Labrador. In 1892 (the latest date for which returns are available), the export of dried codfish, according to the customs list of exports, was 795,549 quintals, 183,000 pounds of boneless codfish, and 1,145 quintals of green codfish. Owing to the destruction of documents in the great fire of July 8, 1892, these returns are imperfect, and there are no returns of exports direct from Labrador. In fact, only the exports of half the year are represented in these returns. The export of cod oil was 2,707 tuns, and of cod-liver oil 1,536 gallons. The export of seal oil was 5,301 tuns, value \$397,575. The export of herrings in 1892 was 64,448 barrels. The export of lobsters was 32,506 cases, value \$260,048. Export of salmon was 1,951 tierces, value \$36,525. Total value of the Newfoundland fisheries in 1892, \$4,564,340.

In 1893, at the Dildo Hatchery, Trinity Bay, there were collected during the season 309,000,000 cod ova; and of these, 201,435,000 were hatched and the young fry planted in a good condition in the bay. Thus 65 per cent. of the ova collected were hatched, being an increase of 15 per cent. compared with the yield of 1891. In four years the total number of ova hatched and planted at Dildo Hatchery was as follows: 1890, 17,000,000; 1891, 39,650,000; 1892, 165,254,000; 1893, 201,435,000; total, 423,439,000.

The number of stations at which floating incubators for lobsters were operated in 1893 was 23. The number of lobsters from which ova were obtained was 26,036, which yielded a collection of 602,244,000, out of which 86 per cent. were hatched and planted. Adding to this 1,005,000 hatched at Dildo, the total is 518,258,000 hatched and planted in 1893. The total number of lobsters hatched during the last four years has been 1,909,656,000.

Twenty-two steam vessels were engaged in the seal fishery in 1893, having a tonnage of 6,934 tons; the crews numbered 4,962. The number of seals taken was 129,061; average catch per steamer, 5,870. In 1892 the number of seals taken was 348,624, being an average of 17,431 seals per steamer. The seal fishery of 1893 was one of the poorest on record.

**Finances.**—In 1892 the value of the imports was \$5,012,877; of exports, \$5,651,116; the rev-

enue for the same year amounted to \$1,883,790; the public expenditure was \$1,668,120; the public debt was \$6,393,367; the interest on the public debt, funded and floating, was \$257,908; the expenditure on the relief of the poor was \$205,666; on steam communication (subsidies), ocean and coastal, \$141,365; on education, \$137,076.

**Close Time.**—The close time for willow grouse or partridge is from Jan. 12 till Sept. 15; for caribou or deer, from Feb. 15 till Sept. 15; for otters and beavers, April 1 to Oct. 2; for salmon, from Sept. 10 to April 30. The license to kill deer, for nonresidents of the colony is \$100, not more than 5 stags and 3 doe to be killed in one season.

**Mining.**—The export of minerals in 1892 were as follow: Copper in ingots, 899 tons, value \$213,288; copper regulus, 5,744 tons, value \$342,720; green ore (copper), 20,000 tons, value \$134,000; iron pyrites, 35,176 tons, value \$316,584.

**Railways.**—The Northern and Western Newfoundland Railway, in course of construction, is to run from Placentia Junction to the Exploits valley, thence westward to Bay of Islands, then south *via* St. George's Bay to Port-au-Basques. It is now completed and operated to the Exploits river, a distance of 200 miles. It will be completed by the close of 1895, or early in 1896. The total distance is over 500 miles. It will open up the fertile lands, forests, and mining regions, as well as the coal fields of Grand lake and Bay St. George.

**St. John's.**—More than half the city of St. John's was destroyed by fire in July, 1892. At the close of 1893 more than 1,300 dwellings were erected. Most of the larger public buildings and stores will be rebuilt in another year or two. The Cathedral (Church of England) and the Presbyterian and Methodist churches, which perished in the flames, are in course of reconstruction. The new portion of the city will be a great improvement on the old. A new fire brigade, having an equipment embracing all the modern improvements, has been organized.

**NEW HAMPSHIRE**, a New England State, one of the original thirteen, ratified the Constitution June 21, 1788; area, 9,305 square miles. The population, according to each decennial census, was 141,885 in 1790; 183,858 in 1800; 214,460 in 1810; 244,022 in 1820; 269,328 in 1830; 284,574 in 1840; 317,976 in 1850; 326,073 in 1860; 318,300 in 1870; 346,991 in 1880; and 376,530 in 1890. Capital, Concord.

**Government.**—The following were the State officers during the year: Governor, John B. Smith; Secretary of State, Ezra S. Stearns; Treasurer, Solon A. Carter; Adjutant-General, Augustus D. Ayling; Attorney-General, Edwin J. Eastman—all Republicans; Commissioner of Insurance, John C. Linehan; Commissioners of Banking, Messrs. Lyford, Baker, and Heard; Mr. Heard resigned, having been appointed receiver of a bank, and was succeeded by Mr. Hatch; Commissioner of Labor, John W. Bourlet; Railroad Commissioners, Henry W. Pultney, Benjamin W. Prescott, Thomas Cogswell; Cattle Commissioners, Irving A. Watson, N. J. Bachelder. The Superintendent of Public Instruction, James W. Patterson, died during the year. Chief Justice of the Supreme Court,

Charles Doe; Associate Justices, William M. Chase, Isaac N. Blodgett, and Lewis W. Clark, Democrats, and Isaac W. Smith, Alonzo P. Carpenter, and R. M. Wallace, Republicans. Judge William H. H. Allen resigned March 16. Ira Colby was nominated to succeed him, and on his declination Robert M. Wallace, who was appointed. Judge Allen died before the close of the year.

**Finances.**—The Treasurer's report for the fiscal year ending May 31, 1893, gives the following statements: Cash on hand June 1, 1892, \$345,219.11; total receipts during the year, \$1,718,461.74; total disbursements, \$1,956,307.82; cash on hand June 1, 1893, \$107,373.03. The debt June 1, 1892, amounted to \$2,859,033.86, and the assets to \$707,129.97, so that the net indebtedness at that date was \$2,151,903.89; the liabilities June 1, 1893, amounted to \$2,600,861.77, and the assets to \$469,999.17, making the net indebtedness \$2,131,762.60, the debt having been reduced during the year by \$20,141.29.

Of the sources of revenue the State tax yielded \$500,000; the State's share of the railroad tax, \$128,809.85; the insurance tax, \$16,585.64; the telegraph tax, \$2,891.92; the telephone tax, \$2,088.28; escheated estates, \$5,486.30; charter fees, \$4,592.50; fees (insurance department), \$5,687.40; peddlers' license fees, \$2,025; interest on deposits, \$3,354.43; income of the Benjamin Thompson trust fund, \$18,010.85.

Of the expenditures, \$81,986.10 was for the Legislature; \$62,574.54 for salaries; \$31,958.67 for State printing; \$30,000 for the National Guard; \$13,567.90 for the Commissioners of Lunacy; and \$14,512.32 for the Australian ballot. The removal of the Agricultural College cost \$75,000; improvements of White mountain roads, \$6,180.79; the exhibit at Chicago, \$16,359.83; the State Library building, \$52,263.50; the commission for revising laws, \$2,000; legislative resolves, \$16,456.13; the Soldiers' Home (net expenses), \$8,866.13; and the publication of military records, \$2,061.87.

The amount paid on account of interest, or credited to the several trust funds, was \$155,892.63; the total interest receipts were \$21,365.28. State bonds amounting to \$277,400 and State notes (temporary loan) amounting to \$100,000 have been paid. The total of trust funds is \$593,311.34. The sum of \$78,426.88, derived from the nonresident savings-bank tax, was divided among the towns for school money, \$1.28 to each pupil.

**Mortgage Indebtedness.**—From a tabulated statement in a census bulletin it appears that the incumbrance of debt resting on real estate amounts in New Hampshire to an average of \$50 to the head of population. The amount of debt is 11.68 per cent. of the assessed value of real property. About one third of the families live on farms, and 78 out of every hundred of the farms are free from incumbrance.

**Charities.**—The State Insane Asylum had 368 patients at the end of 1893. During the year 166 were admitted and 154 discharged. The asylum has received by legacy \$15,000.

A terrible catastrophe occurred at Dover on the night of Feb. 9. The insane asylum of the Strafford County almshouse took fire shortly after ten o'clock, and only 4 of the inmates



were rescued, 41 being burned to death. As soon as the watchman discovered the fire the locks of the cells were broken; but so great was the confusion and bewilderment of the inmates that they only hindered one another in the attempt to escape.

A bill to establish a State asylum for the indigent insane, so as to remove them from county control, was introduced into the Legislature, but it failed.

The report of the Centennial Home for the Aged shows the presence of 19 inmates at the end of the year.

The Orphans' Home, in Franklin, has now a farm of 205 acres. A new nursery building was dedicated in October. It is of brick, 40 by 56 feet, and three stories high, with an annex 16 by 20 feet, two stories high.

**Cattle.**—The State Board of Cattle Commissioners reported that during the year the herds in 221 stables were inspected, and 115 cattle from them were condemned and killed. A post-mortem examination was made in every instance, and without a single exception it verified the diagnosis and revealed the existence of tuberculosis.

**Education.**—The Agricultural College received a bequest of \$400,000 from Benjamin Thompson, of Durham, on condition that the college should be moved from Hanover to his farm in Durham, Strafford County. The gift was accepted, and the State appropriated \$100,000 for new buildings, and at the session of 1893 an additional \$35,000. The work of building has been in progress for two years, and the new college was dedicated Aug. 30. There are 5 buildings. On the same day Rev. Dr. Charles S. Murkland was inaugurated president.

Much dissatisfaction has been felt with the work of the college heretofore, in that it seemed to fit its students for anything else rather than for farming. After nearly twenty-five years of existence it has graduated 143 students, only 30 of whom, according to the catalogue, are in any way connected with agriculture. The location of the college beside Dartmouth at Hanover was believed to be in part responsible, and its removal was proposed long before the bequest with that condition was made. Consequently the inaugural address of the new president was looked for with interest, as it was expected that the intended character of the policy to be pursued in future would be outlined. Hence the friends of agricultural education were greatly disappointed when they understood from the address that the course in agriculture was intended to be one of five courses of equal importance. The State Board of Agriculture sent a letter to the president and trustees protesting against such a course and such instruction as would tend to lead away from the farm rather than to it, and the State Grange, at its meeting in December, adopted resolutions condemnatory of the policy.

Dartmouth College inaugurated a new president at the commencement, in June, Rev. Dr. William J. Tucker, D. D., from Andover Theological Seminary. Sixty-eight students were graduated. At the opening of the collegiate year, in September, the entering class numbered about 125.

The graduating class of the normal school in Plymouth numbered 19.

**Banks and Insurance Companies.**—The savings banks and trust companies paid a tax this year amounting to \$770,242.80. This is all divided among the towns and cities, the tax on resident depositors going directly to the towns where they live, and the tax on the nonresident depositors and those whose residence is unknown constituting the literary fund. Five banks failed during the financial depression of this year, before Sept. 1.

The twenty-fourth annual report of the Insurance Commissioner gives the following information: The number of companies organized under the laws of New Hampshire and authorized to transact business in the State on Dec. 31, 1892, was 38. The number of domestic companies transacting business in 1892 was the same as that reported for 1891. The aggregate of business transacted by all authorized domestic and foreign companies, 83 in number, for the year ending Dec. 31, 1892, is as follows: Risks written, \$84,222,246.18; premiums received, \$1,026,593.27; losses paid, \$595,665.70.

Of the fraternal beneficiary associations, the aggregate membership of the 21 reporting was 621,000, a net gain over the membership of 1891 of 15,460. The death roll for the year was 7,743.

The Bank of the Commonwealth, Manchester, failed July 24, Dr. Joseph C. Moore, its president, being its largest debtor. Involved with its failure were those of the Derryfield Savings Bank and the People's Fire Insurance Company, to which Dr. Moore was also heavily in debt. Charles F. Morrill, cashier of the Commonwealth Bank and treasurer of the People's Insurance Company, disappeared when the failures were made public. The president's indebtedness to the Bank of the Commonwealth was stated to be \$100,000, and to the Derryfield Bank \$25,000. On the day of the failure he made transfers of his property. The receiver was directed to begin insolvency proceedings, and did so, but they were afterward discontinued by order of the Comptroller of the Currency. The court, however, decided that the proceedings should not be dismissed by this withdrawal, but that public notice of the motion to dismiss should be given in order that other creditors might come in and prosecute if they should choose. The last \$5,000 of the money appropriated for the World's Fair exhibit was placed in the bank July 12. It was not credited to the World's Fair Commission, but, as it appears, to the Halifax Hosiery Mills, of which company the president of the bank was also president, which owed the bank about \$31,000. July 12 was the date for the bank to return a sworn report to the Comptroller of the Currency. A certificate of the indebtedness was returned to the commission after the failure.

The President of the National Granite State Bank of Exeter, which went into the hands of a receiver Sept. 23, was arrested in November on a charge of embezzling \$30,000.

**Railroads.**—The report of the Railroad Commission for the year ending June 30, 1893, reviews the development during the decade of the five great systems that now include practically all the railways of the State. During that

period what were originally more than 50 separate and independent roads have passed by sale, lease, and consolidation into the control of five corporations, the Boston and Maine, Concord and Montreal, Fitchburg, Maine Central, and Grand Trunk, whose lines measure 3,165 miles, of which 1,165 miles are in New Hampshire. There are also two narrow-gauge roads, 17 miles long, and 5 logging roads, nearly 50 miles long. In the opinion of the board, nothing but good has so far resulted from the consolidation of the roads.

The most important railroad referee's decision ever recorded in the State was given in the Supreme Court in January. It was a finding in the case of the Manchester and Lawrence Railroad *vs.* the Concord Railroad Corporation, many times on trial since Feb. 18, 1888. The plaintiffs asked for a settlement by the defendants when they were in close business relations. The decision orders the defendants to pay the Manchester and Lawrence road \$399,078.07, with interest from July 1, 1888.

**Legislative Session.**—After a session of twelve weeks the Legislature adjourned April 1. There were on joint ballot 225 Republicans and 157 Democrats. On a bill to establish a police commission in the city of Manchester, which came up Feb. 22 for third reading in the House, the minority refused to vote. When the roll was called, the Speaker directed the clerk to record the members as present and declining to vote, thus "counting a quorum." The bill was declared to have passed, 160 voting in favor, 9 against, and 60 declining to vote.

An act was passed constituting a forestry commission, to consist of the Governor, *ex officio*, and four other members—2 Republicans and 2 Democrats—who shall be appointed by the Governor with advice of the council, and be classified in such manner that the office of one shall become vacant each year. The provisions of the act include the following:

It shall be the duty of the forestry commission to investigate the extent and character of the original and secondary forests of the State, together with the amounts and varieties of the wood and timber growing therein; to ascertain, as near as the means at their command will allow, the annual removals of wood and timber thereupon and the disposition made of the same, by home consumption and manufacture, as well as by exportation in the log; the different methods of lumbering pursued and the effects thereof upon the timber supply, water power, scenery, and climate of the State; the approximate amount of revenue annually received from the forests of the State; the damages done to them from time to time by forest fires; and any other important facts relating to forest interests which may come to their knowledge.

The Governor was directed to appoint a commissioner of labor, to serve three years, at an annual salary of \$1,500, who, with his clerks, shall constitute a bureau of labor.

A highway bill was passed of which the following are the principal provisions: "Each town shall annually raise and appropriate for repair of highways and bridges a sum not less than one fourth of 1 per cent. of the valuation of the polls and ratable estates on which other taxes are assessed by the town; each town shall elect highway agents, not to exceed 3, to have charge of the construction and repair of highways and bridges."

Another act in relation to highways gives power to the railroad commissioners to require the proprietors of a railroad to raise any railroad bridge or any overhead highway bridge, and in case of a highway bridge to change the approaches thereto so as to make them as nearly level as practicable.

Still another highway act relates to damages for injuries caused by defective roads, and provides for repairs and constructions on notice of necessity for them by 3 citizens or taxpayers in the State.

A bill was passed making it unlawful "for any building and loan association not organized under the laws of this State to transact any business in this State unless such association shall possess assets of at least \$500,000, and shall first obtain a license from the bank commissioners." A penalty of \$100 to \$500 fine, or ten days' to six months' imprisonment, or both, was prescribed as punishment of any person selling or attempting to sell stock of any association not thus authorized. The cities of Somersworth, Laconia, and Franklin were established.

Acts were passed exempting towns from opening and repairing highways to summer cottages; repealing the law for taxation of dogs; providing for the immediate completion of the revised record of New Hampshire soldiers and sailors in the War of the Rebellion; for the appointment of a commission to revise and amend the militia laws of the State; giving the State Board of Health authority to establish quarantine, and appropriating \$10,000 to be used if necessary for an epidemic fund; granting to owners of cattle killed by order of the cattle commissioners half the value of the animals upon a basis of health, providing they shall have been owned in the State at least three months before the disease was detected; changing the bounty on bears from \$10 to \$5; imposing a fine of \$50 for the first and \$100 or ninety days' imprisonment for the second offense, on any one found guilty of selling or causing to be sold adulterated butter, oleomargarine, or imitation cheese; providing for appointment of inspectors of buildings by cities and towns; forbidding guarantee savings banks from changing their rate of interest without having mailed to every depositor a notice of the proposed change three months in advance; providing for the appointment of 2 appraisers to visit the unincorporated lands of the State and appraise them.

In reference to Dartmouth College, \$7,500 was ordered paid to the trustees for the use of the college, and by a further section of the act the State "relinquishes to the trustees of Dartmouth College any rights which the State may have in Culver Hall, at Hanover, and waives the payment by said trustees of the \$15,000 appropriated by the State July 9, 1869, in aid of the erection and furnishing of said Culver Hall."

A resolution was passed extending thanks to Hon. William E. Chandler for his gift to the State of the statue of John Parker Hale for the Capitol grounds.

A joint resolution was passed making provision for submitting to voters at the election in November, 1894, the question of the expediency of calling a convention for revising the Constitution.



The sum of \$10,000 was appropriated for the purpose of procuring marble statues of Daniel Webster and Gen. John Stark, and placing them in the National Statuary Hall in Washington.

The sum of \$75,000 was appropriated for completing and furnishing the State Library building, and putting in order the grounds about it.

The Governor was authorized to appoint 3 commissioners—to serve without charge—to be called “commissioners for the promotion of uniformity of legislation in the United States.” It shall be the duty of said board to examine the subjects of marriage and divorce, insolvency, descent, and disposition of property, and other subjects, with a view to securing uniformity in the laws of the different States upon such subjects; and to meet and act with other similar boards of commissioners appointed from other States for the above purpose.

**NEW JERSEY**, a Middle Atlantic State, one of the original thirteen, ratified the Constitution Dec. 18, 1787. Area, 7,815 square miles; population in 1890, 1,444,933. Capital, Trenton.

**Government.**—The following were the State officers during the year: Governor, George T. Werts, Democrat; Secretary of State, Henry C. Kelsey; Treasurer, George R. Gray; Attorney-General, John P. Stockton; Adjutant-General, William S. Stryker; Superintendent of Public Instruction, Addison B. Poland; Commissioner of Banking and Insurance, George S. Duryee; Comptroller, William C. Heppenheimer; Chief Justice of the Supreme Court, Mercer Beasley; Associate Justices, Bennett Van Syckel, Jonathan Dixon, David A. Depue, Alfred Reed, William J. Magie, Charles G. Garrison, Job H. Lippincott, Leon Abbett. Judge Edward W. Scudder died in February. Chancellor, Alexander T. McGill; Vice-Chancellors, Abraham V. Van Fleet, John T. Bird, Henry C. Pitney, and R. S. Green.

**Legislative Session.**—After sitting nine weeks, the Legislature adjourned March 11. The passage of three bills, known as the race-track bills, excited great indignation. The first provided “that the boards of freeholders of any county, board of aldermen, common council, township committee, or other body having general charge of the affairs of any city, township, or municipal division of the State, in which there is a race track, shall have power to license, for not more than five years, any such race track; provided, that no race course shall be licensed in cities having over 100,000 inhabitants.” It also made it “necessary for the association having this racing to file with the Secretary of State a certified copy of a resolution passed by a three-fourth vote of the county board of freeholders of the county in which the race course is situated, that the maintenance of such race course is a public necessity.” The second bill provided “that betting, and the practice of betting commonly known as bookmaking, upon horse races, within the inclosed grounds of any incorporated association or body in this State, or the keeping of a place or places within such grounds to which persons may resort for such betting, shall not constitute any misdemeanor or criminal offense when such association or incorporated body is not indictable for the carrying on of said races therein.” The third provided that “habitual bookmaking shall not constitute a disorderly house, maintaining a

nuisance, or a conspiracy, or any criminal offense, but shall be deemed a misdemeanor, punishable by a fine of \$20.”

These three bills were referred to the Committee on Municipal Corporations, from which they were promptly taken and passed by the House. The Senate passed them, and sent them to the Governor, who vetoed them, and on Feb. 25 they were again passed over his veto and became laws. Petitions asking for their repeal were immediately circulated, mass meetings were held, sermons were delivered throughout the State, citizens' leagues to effect their repeal were formed, and on Feb. 27 three bills repealing the race-track laws were introduced in the House. These, too, were referred to the Committee on Municipal Corporations, with whom, in spite of rigorous and repeated efforts to bring them up for passage, they remained until the end of the session.

The bill curtailing the power of the Republican Mayor of Jersey City took from the mayors of first-class cities the power to appoint the corporation counsel and attorney, and vested it in the Board of Finance, and also gave the board power to reject or confirm other appointments. This bill was passed over the Governor's veto on the last day of the session.

A very important bill was one designed to enable street or horse railway companies to use electric or chemical motors or grip cables as a propelling power, instead of horses; and also to erect poles and string wires without the consent of, or compensatory damages to, those in front of whose property the poles may be erected. It provides that consent need be obtained only from the township committee or municipal authority. This bill received the Governor's signature.

A bill aimed at the tracks on which winter racing had been practiced was rushed through both Houses, under suspension of the rules, on the last day of the session. This law forbids racing during the months of December, January, and February, under a penalty of \$1,000 to \$10,000 fine, or from six months to two years' imprisonment, or both.

Among other bills that became laws were the following:

Authorizing and regulating the construction of street railways upon turnpikes.

Authorizing the issuing of \$1,000,000 additional bonds for Hudson County Boulevard.

Making the printing, publishing, and sale of newspapers, the sale and delivery of milk, etc., on Sunday lawful.

Amending the election law by providing that Common Pleas Court shall sit before spring election to revise registry of election, as in the autumn.

Providing for the compulsory levying of a tax of three fifths of one mill on each dollar of taxable property for park maintenance.

Making it illegal to manufacture clothing in tenement houses.

Providing for the erection of a free public library in cities of the second class by issuing bonds to the extent of \$50,000.

Authorizing divorce where either party has been sentenced to State prison.

Fixing the rate of interest on arrearages of taxes at 7 per cent.

Exempting from taxation fraternal and beneficial organizations, and allowing all such orders to do business in this State upon compliance with the requirements to report regularly to the Commissioner of Banking and Insurance.

**Finances.**—From the Treasurer's report for the year ending Oct. 31, 1893, the following statements are gathered: State fund securities on hand, Nov. 1, 1892, \$1,660,882.96; riparian leases added to fund during the year, \$91,747.03; receipts during the year, \$1,962,319.80; disbursements during the year, \$1,857,982.83; balance, Oct. 31, 1893, \$724,038.12, this being the largest balance ever shown in the history of the State. Amount of fund Oct. 31, 1893, \$1,856,966.96. The amount of the school fund Nov. 1, 1893, was \$3,752,429.85; loss on sale of real estate, \$6,115; interest advanced on loans, \$67.60; investments during the year, \$130,000; income, \$169,661.40; disbursements, \$222,287.43; balance Oct. 31, 1893, \$255,210. The receipts from the State school tax of 1892 were \$2,151,700, all of which was expended, as was \$6,942, the amount received for the Agriculture College fund, and \$19,000, the amount of the United States appropriation to agricultural colleges. The amount of war debt has been diminished by \$96,300, and was on Jan. 1, 1894, \$837,400.

The report of the Comptroller for the fiscal year shows that the railroads and canals having their termini in the State were taxed, for the year ending Oct. 31, 1893, on a valuation of \$214,072,322, the tax levy being \$1,070,361.62. The tax received from miscellaneous corporations other than railroads amounted to \$535,612.26. The total amount therefore was \$536,612.26, being an increase over the previous year of \$70,734.69. Insurance companies incorporated in New Jersey are assessed 1 per cent. on their surplus, and 0.35 of 1 per cent. on the gross amount of the premiums received. There are 4 such life-insurance companies in the State, whose united tax is nearly \$100,000. The net receipts from the collateral inheritance tax were \$41,068.20; from official fees, \$42,751.37; from fees paid upon and subsequent to filing certificates of incorporation, \$121,161.55; from judicial fees, \$19,114.18; from riparian lands, \$16,352.39; from interest and dividends, \$18,870; and from other sources, \$938.33.

The report of the Board of Taxation shows the total assessed valuation of property in the State subject to taxation for 1893-'94 to be as follows: Valuation of real and personal property, \$765,824,674; valuation of railroads and canal property (subject to review), \$222,468,389; total, \$988,293,463.

The school tax is levied at the rate of \$5 for each child of lawful school age. The number of such children, as shown by the school census of 1892, was 405,222. There are also two minor sources from which money is received for school purposes. One is the \$100,000 annually set aside from the interest on investments made through the sale of riparian rights; the other is the special fund created by the distribution among the different States of a national surplus fund. The amount allotted to New Jersey was divided among the counties for school purposes, the interest only to be used. The amount received as interest from this fund during the year was \$31,829.35.

**Trust Companies.**—The resources of New Jersey trust companies at the close of business, June 30, 1893, as exhibited by reports to the

Department of Banking and Insurance, were \$13,903,190.71.

**National Banks.**—The statement of the National Banks for New Jersey shows that on July 12 their resources were \$84,513,224.56, the loans and discounts amounting to \$51,422,127.09. Individual deposits were \$49,250,358.25, and the amount due to other national banks was \$3,771,541.64.

**Education.**—There are 1,688 buildings in this State used for public schools, an increase of 19 over last year. During the year \$748,418.78 was spent on new buildings. There are 4,644 teachers, and the total enrollment in the schools is 243,254. The number of children attending no school was 89,692, and of these 80 per cent. are under eight and over fourteen years of age. The lawful school age is between five and eighteen. The number attending private schools is 47,157.

The Agricultural Experiment station received \$19,867.50, balance of special appropriation for the State Laboratory, and also \$9,246.51 of the annual appropriation of \$11,000, leaving a balance to the credit of this account of \$2,541.51. To the credit of the State Board of Agriculture \$7,867.62 was paid during the year.

The School for Deaf Mutes receives \$275 a year for each pupil, and every deaf person between the ages of five and twenty-one who is a resident of the State is eligible for admission. An annual sum of \$5,000 is appropriated for repairs which this year was increased by an addition of \$15,000 for the construction of a shop for industrial pursuits. There are 120 pupils enrolled. For the cost of maintenance of pupils during the year the State paid \$27,264.

The State maintains at Vineland a training school for feeble-minded children and a home for feeble-minded women. To these two institutions, and to the institutions of other States, \$81,783.83 was paid during the year for the care and support of the 329 wards of the State who are feeble minded or blind.

**Home for Disabled Soldiers.**—Of the 461 inmates of the home at the beginning of the year, 273 were drawing pensions from the National Government. The average age is sixty-two. An appropriation of \$3,000 for the purchase of a cemetery plot was made by the last Legislature. The United States Government paid to the home during the year \$28,313.15; the State paid \$20,330.44.

**State Hospitals.**—Under this name the insane asylums of the State will be known in future. The Board of Managers reports that the property under their care is worth \$3,513,690. This year the "dual system" was established at Trenton, which had before been in operation at Morris Plains.

The State this year paid to county lunatic asylums for support of patients \$120,700.58, and to the State hospitals for the insane \$125,173.75. The number of county patients in the State Hospital at Trenton, by the last quarterly report, was 810; at Morris Plains, 839; insane convicts at Trenton, 18; at Morris Plains, 44; patients in county asylums, 1,127.

**State Prison.**—For this institution the net amount disbursed was as follows: For maintenance of convicts, \$77,659.67; for salaries, \$82,511.68; for repairs, \$8,501.49; payment to dis-



charged convicts, \$1,153.50; total, \$169,826.34. This amount shows a decrease from 1892 of \$1,970.11. The amount received from the proceeds of convict labor was \$63,311.73, which was earned in the manufacture of mats and matting, of hosiery, shirts, shoes, trousers, brushes, and blocks. The woman convicts are chiefly employed in making clothing for the prisoners. The parole law is highly commended.

**Reform School.**—On account of the special appropriation for the erection and furnishing of a new family building, \$4,224.35 was this year paid to this institution in addition to the disbursement for the maintenance of pupils and expenses of trustees, which was \$54,996.79. The sum of \$40 per quarter is now allowed for each boy maintained, instead of \$37.50 as last year. The number of boys cared for during the year was 509, number remaining Oct. 31, 1893, 373, of whom 319 were white and 54 colored.

**Industrial School for Girls.**—The payments to this institution were \$15,977.55, an increase over the ordinary expenses of the preceding year of \$2,412.66. The number of girls under instruction during the year was 113; number remaining Oct. 31, 99.

**Agriculture.**—During the year most farm crops in the State were below the average yield. The late spring, protracted drought, and devastating storms contributed to this result. The average yield per acre for 1893 was: Corn, 26.4 bushels, the lowest by 10 bushels for years; wheat, 14.5 bushels; oats, 23.9 bushels; buckwheat, 13.4 bushels; white potatoes, 73 bushels; sweet potatoes, 97 bushels. There has been a reduction in the acreage of cereals during the last decade amounting to 172,018 acres, or 22.24 per cent. The products of the dairy are increasing rapidly. In Camden alone 1,530,000 gallons of milk were delivered during the past year. Farms devoted to the nursery business number 145, with a total acreage of 5,465 acres. The seed farms are 34, comprising 6,272 acres. Florists' establishments number 366, of which 8 are owned and managed by women. The total square feet of glass is 3,703,554; total value of establishments, \$3,666,518.46; total value of tools and implements, \$155,107.14.

**World's Fair.**—By several acts, \$130,000 was appropriated to further the work of the New Jersey Board of Commissioners to the World's Columbian Exposition, and to enable the State Board of Agriculture, the State Board of Education, and the Geological Survey to make a suitable exhibit in their respective departments, and to maintain a proper building for the use of the citizens of the State. The New Jersey Building, a reproduction of the Washington Headquarters at Morristown, was the first State building completed; it was formally dedicated May 1, 1893, the day of the opening of the exposition.

**Marriage and Divorce.**—The vital statistics of the State for 1893 give the number of marriages as 17,178. Of these, 4,570 were celebrated in Camden, and most of them were between persons who crossed the Delaware from Pennsylvania to escape the provisions of the laws of that State. Persons who do not wish to come in conflict with the marriage laws of the State of New York also come to New Jersey to be mar-

ried; 1,401 marriages were celebrated in Jersey City, 613 in Hoboken, and 1,956 in Newark. The number of divorces granted in the State has increased greatly. The number of cases docketed in the Court of Chancery is about 1,500.

**Trenton Battle Monument.**—A monument, rising 150 feet above the street level and marking the site of the battle of Trenton, was dedicated Oct. 19. On the base of the column are 4 tablets: One, crossing the Delaware, is the gift of Pennsylvania; opening of the battle is presented by New York; a third, surrender of the Hessians, is given by Connecticut; and the inscription tablet is given by the Society of the Cincinnati in the State of New Jersey, who, in 1843, first agitated the subject of the erection of a memorial. A statue of Washington, 13 feet high, crowns the monument, and on each side of the door of entrance is placed a bronze statue of types of the Continental soldiery. On the right is a life-size statue of a Philadelphia city trooper who took part in the fight. His name was Blair McClenachan, and he was a member of the Sons of St. Patrick. The figure on the left is the gift of Massachusetts. It is modeled from a painting on ivory of John Russell, a private soldier of the splendid Marblehead Regiment, made up of fishermen. He was one of the soldiers who ferried Washington across the Delaware, and after the war he became captain of a sloop.

**Judicial Decisions.**—The Republican Committee of Essex County applied to the Supreme Court for writs of mandamus to compel the city and county clerks to issue general tickets for the election of members of Assembly from the county at large instead of by Assembly districts. It was stated that this was directed by the general election law of 1876, and that the system of election by districts, which had been employed for forty years, was unconstitutional. The court held that members of the House of Assembly must be chosen by elections at which all the people of the county may vote for or against all the members to which the county is entitled.

The Lumberville Delaware Bridge Company case was brought up as a test case to set aside the taxes levied by the State board under the act of April 18, 1884, against the 13 bridges that span Delaware river, as well as to determine the constitutionality of the act, under the Federal as well as the State Constitution. The Supreme Court held that the Federal Constitution will not invalidate a State tax imposed upon domestic corporations generally, because it incidentally affects one that, under State authority, is engaging in interstate commerce.

The Court of Errors and Appeals decided against the Merchants' Insurance Company of Newark in 4 suits brought by the city of Newark to recover tax due on several millions of horse-railroad bonds. This compels the payment of tax amounting to many thousands of dollars.

Suit was brought in the Supreme Court to have the race-track law providing for the granting of licenses declared unconstitutional, and the other two race-track bills with it, as they were part of the whole scheme. Arguments were heard in June, but the decision of the court was not announced until after the November elections. The court held that the laws were unconstitutional.

**NEW MEXICO**, a Territory of the United States, organized Sept. 9, 1850; area, 122,580 square miles. The population, according to each decennial census, was 61,547 in 1850; 93,516 in 1860; 91,874 in 1870; 119,565 in 1880; and 153,593 in 1890. Capital, Santa Fé.

**Government.**—The following were the Territorial officers during the year: Governor, William T. Thornton, Democrat; Secretary of State, Lorion Miller; Auditor, Demetrio Perez; Treasurer, Rufus J. Palen; Solicitor-General, Edward L. Bartlett; Adjutant-General, W. S. Fletcher; Superintendent of Public Instruction, Amado Chavez; Secretary of the Bureau of Immigration, Max Frost; Chief Justice, Thomas Smith; Associate Justices, William D. Lee, Albert B. Fall, Edward P. Seeds, Alfred A. Freeman.

**Finances.**—The Auditor reports that during the forty-third fiscal year warrants were issued as follow: Penitentiary, \$34,106.08; Capitol current expense, \$4,668.92; salary fund, \$301.66; court fund, \$72,606.13; miscellaneous, \$28,572.81; Territorial institutions, \$21,860.68; compensation of assessors, \$9,315.40; transportation of convicts, \$2,820.60; interest on warrants, \$6,570.45; school fund (proceeds of licenses to insurance agents), \$419.50; pay of officers and employees of thirtieth Legislative Assembly, \$17,728.80; special appropriations, \$5,686.05; license fund, \$329.75. Warrants were also issued against the balance of funds of forty-second fiscal year to the amount of \$20,898.45; against the deficit funds of 1889 and 1890 to the amount of \$4,098.04, and against general funds, in settlement of accounts prior to March 3, 1889, to the amount of \$31.50; total, \$259,899.61.

The Territorial indebtedness Aug. 29, 1893, was: Capitol-building bonds, \$200,000; Penitentiary-building bonds, \$109,000; current-expense bonds, \$150,000; on all these bonds the rate of interest is 7 per cent. Provisional indebtedness fund, \$150,000; Capitol contingent bonds, \$50,000; insane-asylum bonds, \$25,000; refunding bonds, \$95,000; on foregoing bonds interest is at the rate of 6 per cent. Casual deficit bonds, \$75,200, on which the interest is at the rate of 5 per cent.; and outstanding warrants, \$7,512.27. Total indebtedness, \$911,712.27. The Treasurer reports a cash balance of \$121,000 on June 30, 1893. The rate of taxation for all purposes is 0.01405 on the dollar, a trifle less than a cent and a half.

The assessed valuation on real estate, live stock, and other personal property amounts to \$41,602,198.41.

**Banks.**—Ten national banks in the Territory show an average reserve of 24.61 per cent.; loans and discounts, \$1,774,729.90; United States bonds to secure circulation, \$265,000; total resources, \$3,342,208.69; individual depositors, \$1,563,088.30. The amount deposited in savings banks June 1, 1892 was \$149,449 by 900 depositors, an average of \$166.05 each.

**Education.**—The revenue for the public schools is derived from a tax of 3 mills on the dollar of all taxable property, from a poll tax of \$1 on each voter, from the proceeds of certain fines, and from licenses. This revenue is apportioned to each county, and the share of each county is apportioned to the districts. The amount this year collected was \$275,747.58; the

balance on hand from last year was \$73,432.25; balance on hand Oct. 1, 1893, \$92,019.21. The number of school districts in the Territory is 582; teachers employed during 1893, 547, of whom 368 were men and 179 women; pupils enrolled, 21,690; average daily attendance, 14,160. The number of public schools is 519. All the text-books used are English, except a Spanish-and-English primer.

An act of the last Legislature provided for the holding of 5 normal institutes during vacation of each year. These were held at Las Lunas, beginning May 29; at Mora, beginning June 1; at Fernandez de Taos, beginning June 21; at Chama, beginning July 10; and at Roswell, beginning July 10. Each institute continues in session eight weeks, and tuition is free.

The School of Mines, at Socorro, opened for business Sept. 5, 1893. The session is to be of eight months' duration, and besides a preparatory department, courses in general chemistry, assaying, and metallurgy are provided. Tuition is free, but a matriculation fee of \$10 is charged. The building, which cost \$42,940.53, is T-shaped 135 feet long by 32 feet deep, with a central assay wing 54 feet long by 42 feet wide. It is of gray trachyte, in broken ashlar, trimmed with red sandstone.

The New Mexico Military Institute (formerly the Goss Military Institute), at Roswell, was made a Territorial institution by an act of the last Legislature. Military instruction is a prominent feature of this institution, and by act of Congress an army officer may be assigned as military instructor. Ample buildings have been provided. Last year there were 47 students.

An agricultural experiment station, with an appropriation of \$5,000, was established in San Juan County by an act of the last Legislature, and others at Taos and Rio Arriba. The Deaf, Dumb, and Blind Institute, at Santa Fé, was opened in September. There are 225 deaf and 300 blind persons in the Territory, and about 40 per cent. of them are of school age.

The United States Indian School, at Santa Fé, by direction of the Secretary of the Interior, has been changed into a normal training school for preparing Indians to take the place of white teachers in their own schools. The children who were in attendance have been distributed to other educational institutions.

**Penitentiary.**—The Penitentiary at Santa Fé has accommodations for 250 prisoners, and an additional building is in process of construction, in which United States prisoners will be confined. The labor of the convicts is employed wherever it is practicable. They are making the brick of which the new wall around the prison is being constructed, at the rate of 8,000 a day. A tile and drainage pipe manufacture has also been established. There remained in prison, July 1, 1893, Territorial prisoners, 130, all of whom were males. Of the United States prisoners, 16 were confined at the beginning of the year, 31 were received during the year, and 16 remained July 1, of whom 25 were males and 6 females.

**Insane Asylum.**—The Territorial Insane Asylum, at Las Vegas, was opened May 1, 1893. The present capacity is 55. The counties will be allowed one patient to every 3,000 of population. The cost of maintaining the patients is shown to



be \$24.90 a month each, or 83 cents a day. This includes every expense. The average number of patients treated was 35.

**Court of Private Land Claims.**—Under the act establishing this court, all claims for land grants not filed for settlement in the office of this tribunal prior to March 4, 1893, are forever barred, and the lands revert to the Government, becoming part of the public domain. The following is a summary made, Aug. 31, 1893, of all the claims presented, showing the acreage claimed in the cases disposed of, and also the acreage for which they have been approved: Cases filed, 262; grants confirmed, 23; grants rejected, 7; appealed to Supreme Court by claimants, 4; by United States, 4. Number of claims determined, 715; estimated number of acres claimed, 1,558,875; estimated number of acres confirmed, 815,839. By an amendment of this act the time for filing claims to small holdings was extended to Dec. 1, 1894.

**Land Survey.**—The last Congress appropriated \$20,000 to survey private land grants after their confirmation, and \$15,000 for the survey of public lands. During the year ending June 30, 1893, 2,343 miles of Government lines were surveyed and established; 376 plats were made, and 95 mineral locations surveyed; and 2,000 claims for survey of small farms were filed in the office of the Surveyor-General.

**Minerals.**—The capital invested in coal mining, Aug. 31, 1893, was \$3,574,863.38. Amount of coal produced during preceding year, 639,356 tons. Number of miners employed inside mines, 690; outside, 194; laborers inside mines, 159; total, 1,043. Carbonate and sulphate of soda, gypsum, alum, kaolin, and fire clays and graphite exist in large deposits. The total of precious metals produced in 1892 was \$1,850,000, of which 50.41 per cent. was gold. The annual production of precious stones, especially turquoises, is rapidly increasing.

**Agriculture.**—The crop report of the statistician of the Department of Agriculture shows that in New Mexico, in 1893, the average bushel yield of wheat was 16.8; of oats, 29.2; of barley, 21.6; of buckwheat, 95. The average condition of corn, Oct. 1, was 28; of Irish potatoes, 90; of sweet potatoes, 95; of sorghum, 95. New Mexico produced 515,000 bushels of wheat, 585,000 bushels of corn, and 225,000 bushels of oats.

Experiments on a large scale are being made with cana-agria (*Rumex hymenospales*), a sour dock, which grows wild throughout New Mexico, from which tannin is extracted. Under irrigation it matures in one year; without, in two years. The market value per ton, green, is \$6, or dried and sliced, \$65. It takes 3 tons of green to make 1 ton of dry, in which state it contains about 30 per cent. of real tannic acid.

**Irrigation.**—Gov. Thornton's report rehearses the need of the Territory for the establishment of irrigation reservoirs and canals and the steps that are being taken to supply it. He says the Pecos valley has the best and most extensive system of irrigation on this continent; 1,200 miles of canals have been completed, and the capacity of the storage reservoirs, to save the flood and storm waters, aggregates over 15,000,000,000 cubic feet; the canals cover 500,000 acres, nearly all in New Mexico. The farmers use

only an acre-foot of water per annum, or 42,260 cubic feet. This is about the lightest duty of water known on strictly farming lands. Sixty thousand acres of land have been disposed of to *bona fide* farmers, and 20,000 are now under cultivation. During last winter more than 250,000 fruit trees and vines were set out, and great numbers of shade trees.

In Grant County two important enterprises to save the underflow of Mimbres river are well under way. In San Juan County there is abundance of water. The arable area is only about 450,000 acres, and there is water for 2,000,000 acres. The irrigation works on the Maxwell grant are completed and colonization goes on steadily. Work is being done for reclaiming the Jornada del Muerto and the Armendaris land grants. Another irrigation enterprise is the reclamation of 30,000 acres on one of the Baca floats and on the Pablo Montoya grants by utilizing the waters of Canadian river. In Santa Fé County important works are in process of construction. One reservoir has been built to supply Santa Fé with water for domestic purposes and to irrigate about 2,000 acres of garden and fruit soil; another to cover 15,000 acres of splendid level mesa is to be built in the Arroya Honda, a natural storage basin.

An irrigation congress met in November at Deming, New Mexico, to consider, among other subjects, the devising of means to stop the unlawful diversion and use of the head waters of the Rio Grande, which diversion and use has caused a water famine in the Rio Grande valley south of Albuquerque.

**Railroads.**—The Pecos Valley Railroad has been completed, 97 miles, from Pecos City, Texas, to Eddy, New Mexico; it will run from Eddy to Roswell, 80 miles, with only three tangents, and thence to a junction with the Santa Fé route, thus completing the shortest inter-oceanic route in the United States.

**Legislative Session.**—The Legislature was in session eight weeks, adjourning on Feb. 23. Educational interests received much consideration, and various irrigation laws were passed. An effort was made to pass a law prohibiting gambling and making it a felony, but a compromise resulted only in doubling the license required from all those who keep gambling tables, requiring \$241 annually for each table. Among other bills passed were the following:

Creating the office of coal-oil inspector.

Providing that publication notice of service of process must be in both the English and Spanish languages where either party is of the Spanish-speaking race.

Providing for the election of boards of education.

Exempting from taxation for six years, from the beginning of their construction, all irrigation ditches, canals, and reservoirs.

Creating Guadalupe County out of a portion of the county of San Miguel.

Taxing sleeping-car companies.

Establishing branch experiment stations in Taos, Rio Arriba, and San Juan.

Facilitating the adjustment of land titles.

Providing for a county court in every county where the county seat has a population of 2,000 or more.

An act and resolution apportioning the \$62,000 returned by the United States to the Territory in repayment of the direct tax levied by the act of Con-

gress Aug. 5, 1861, as follows: For the use of the School of Mines, \$17,500; insane asylums, \$17,500; World's Columbian Commission, \$17,000; San Juan Experimental Station, \$5,000; and Deaf and Dumb Institute, \$5,000.

**NEW YORK**, a Middle State, one of the original thirteen, ratified the Constitution July 26, 1788; area, 49,170 square miles. The population, according to each national decennial census, was 340,120 in 1790; 589,051 in 1800; 959,049 in 1810; 1,372,111 in 1820; 1,918,608 in 1830; 2,428,921 in 1840; 3,097,394 in 1850; 3,880,735 in 1860; 4,382,759 in 1870; 5,082,871 in 1880; and 5,997,853 in 1890. According to a State census taken in 1892, the population was 6,513,344. Capital, Albany.

**Government.**—The following were the State officers during the year: Governor, Roswell P. Flower, Democrat; Lieutenant-Governor, William F. Sheehan; Secretary of State, Frank Rice; Comptroller, Frank Campbell; Treasurer, Elliot Danforth; Attorney-General, Simon W. Rosendale; State Engineer and Surveyor, Martin Schenck; Superintendent of Public Instruction, James F. Crooker; Superintendent of Prisons, Austin Lathrop; Superintendent of Insurance, James F. Pierce; Superintendent of Public Works, Edward Hannan; Commissioner of Statistics of Labor, Charles F. Peck, who was succeeded on Jan. 20 by Thomas J. Dowling; Railroad Commissioners, Michael Rickard, S. A. Beardsley, and Alfred C. Chapin; Chief Judge of the Court of Appeals, Charles Andrews; Associate Judges, Robert Earl, John C. Gray, Rufus W. Peckham, Denis O'Brien, Francis M. Fitch, and Isaac H. Maynard.

**Finances.**—The balance in the treasury on Oct. 1, 1892, was \$3,448,053. The receipts for the fiscal year ended Sept. 30, 1893, were \$17,779,470, while the payments were \$18,034,174, and the balance was \$3,193,349.

The receipts were distributed as follow: From collateral inheritance tax, \$3,071,687, of which \$2,078,278 were paid in from New York County and \$346,216 from Kings; notaries' fees, \$46,221; salt duties, \$34,729; Auburn Prison earnings, \$3,535; Clinton Prison earnings, \$10,773; Sing Sing Prison earnings, \$7,585; sales by commissioners of the Land Office, \$24,334; taxes on corporations, \$1,668,911; taxes on organization of corporations, \$298,241; and pool tax on racing associations under the Ives pool law, \$21,574. The payments of the State Treasurer for the year ended Sept. 30 were: General fund, \$11,232,368; canal fund, \$1,576,137; common-school fund, \$670,727; free-school fund, \$3,911,568; United States deposit fund, \$300,453; college land scrip fund, \$229,800; literature fund, \$111,269; Normal University fund, \$19,000; and military record fund, \$1,848; total, \$18,053,174. The receipts for the last three months of 1893 were \$2,793,715, and the payments \$4,715,289, leaving a balance in the treasury on Jan. 1, 1894, of \$1,271,675.

The tax rate fixed by the Legislature was made up of 0.98 mill for school purposes, 0.33½ mill for the support of the insane, 0.37½ mill for canals, and the remainder, 0.89 mill, for general purposes, making a total direct tax rate of 2.58 mills. For the first time in seventy-five years the State is entirely free from debt. It is esti-

mated that the actual surplus on Sept. 30, 1894, will be \$3,089,177.

The active enforcement of the collection of the amounts under the corporation tax laws and the inheritance tax laws, for the fiscal year ending Sept. 30, 1893, exceeded the amount estimated by Comptroller Campbell in making up the tax rate by nearly \$2,000,000.

**Wealth of the State.**—At the meeting of the State Board of Equalization, which is composed of all the State officers with the exception of Governor, held in September, the assessors reported that during the year they examined and compared the values of about 5,000 parcels of property, in various counties, with assessments thereon. In 1891 the assessed value of real estate was \$3,526,645,815. In 1892 it was \$3,626,645,093, an increase of \$99,999,278. In 1892 the assessment of personal property amounted to \$405,095,684; in 1892, \$411,413,856, an increase of \$6,318,172. The apparent full value of the real estate for 1892 was fixed at \$5,508,133,953.

**Savings Banks and Trust Companies.**—From the annual statements of the New York city savings banks for the year ended Dec. 31, 1893, issued by the State banking department, it appears that the amount deposited in 25 banks was \$86,511,227, while the amount withdrawn was \$104,113,786. The returns of the trust companies in New York and Brooklyn, compared with the figures of 1892, show a gratifying improvement. Two more companies reported for 1893 than there were in operation in 1892. The resources of New York and Brooklyn companies in 1893 were \$21,500,185 greater than in 1892. And of these resources the two new companies contributed \$17,529,674, but though the total profits, amounting to \$7,373,469 in 1892, jumped in 1893 to \$16,216,554, being an increase of \$8,843,085, the new companies furnished but \$640,937 of this increase. The total resources of 28 companies in 1893 were \$346,821,468, compared with \$325,261,283 for 1892. Dividends from these companies declared during 1893 amounted to \$3,370,000, compared with \$1,672,500 in the year previous. Equally favorable is the showing of the profits, for from these companies the profits in 1893 was \$16,216,554, while in 1892 it was \$7,373,469.

**Legislative Session.**—The one hundred and sixteenth regular session of the Legislature began Jan. 3 and ended April 20. The number of new laws was 726. The Senate held over from the previous year, but the Assembly was the first one elected under the new apportionment, which gave a greater representation to the cities and less representation to the country districts. The Senate stood: Democrats, 17; Republicans, 14; Independent Republican, 1. The Assembly stood: Democrats, 74; Republicans, 54.

The act calling a constitutional convention was superseded by a new act making the number of delegates 165 instead of 171, all of them to be elective. Each of the 32 Senate districts was to elect 5 delegates, and the number of delegates at large was fixed at 15. The election was held Nov. 7, the Republicans electing 105 delegates and the Democrats 70. The convention will be held in Albany in May, 1894.

The village of Olean, in Cattaraugus Co., was given a city charter.



The following laws relating to New York city were enacted :

Authorizing the issue of \$150,000 in bonds for the Castle Garden Aquarium; providing for a vice-president in the Park Board; giving the consent of the State for the purchase by the United States of the Bowling Green site for a customhouse; providing that the city shall only use and occupy the surface under and through which the Croton aqueduct runs, which it has acquired in fee; providing for the removal of the City Hall to Central Park, or for its removal by a private person or corporation who shall agree to re-erect and maintain the building so that it shall present the same external appearance as now; providing that any assistant to the corporation counsel may perform any of the duties of the corporation counsel when so empowered by the corporation counsel; extending for one year, from Nov. 1, the term of office of the New York City Board of Electrical Control, and providing that the terms of the present members of the board shall expire on Nov. 1; providing for indexing and reindexing records in the New York County Clerk's office, and in the Register's and Comptroller's offices; providing for an additional bureau in the law department, to be known as the Bureau of Street Openings; providing for the addition of the 42d Street reservoir site to Bryant Park; authorizing the issue of \$500,000 in bonds for improving the sanitary condition of the common-school buildings; giving copyists and art students free admission to the Metropolitan Museum of Art on the two pay days in each week; ceding to the United States lands near Forts Hamilton and Wadsworth for harbor defense; providing for a driveway along Harlem river; appropriating \$250,000 for a soldiers' and sailors' memorial arch, the location not being defined in the bill; allowing the construction of railroads on bridges over the East river.

A law was passed prohibiting the selling of pools in pool rooms. The general excise law of 1892 was amended in several respects. It is now provided that licenses shall be granted only to those actually in the business; that licenses may be revoked if the premises are used for unlawful purposes; that revoked licenses can be restored only by order of the court; that no saloon shall be within 200 feet of the "principal," instead of the "nearest," door of a church; that hotel licenses shall be \$500, instead of \$250; and that, in New York city, from \$10 to \$30 may be charged for a transfer of license.

A pharmacist can no longer hold both a drug-gist's and a storekeeper's license.

The banking law was amended in these respects: Requiring a minimum capital of \$25,000 in places of fewer than 1,500 population, \$50,000 between that population and 30,000, and \$100,000 in all other places; authorizing savings banks to invest in the stocks or bonds of Boston, Worcester, St. Louis, Cleveland, Detroit, Providence, and New Haven.

The stock corporation law was amended so that the sale of franchises and property and the purchase of stock in another corporation must be genuine transactions; also so that a two-thirds vote may increase or diminish the capital stock. Hereafter a majority vote may establish a quorum in societies and clubs.

A special committee of the Senate made an investigation into the combinations to advance the price of coal; and a bill was passed to prevent monopolies in articles of general necessity.

A law was passed allowing the Mayor of Brooklyn to appoint an inspector of coal to protect purchasers in regard to weight.

Other laws were as follow: Allowing the uncontested portions of a will to stand; forbidding the removal or altering of books to defraud creditors; enabling persons qualified to take real estate by descent to devise the same without regard to residence or citizenship; forbidding misrepresentation of the circulation of a newspaper.

The city of Syracuse was authorized to have electrical subways. Laws were passed authorizing a village to contract with electric-light companies to an amount not exceeding  $2\frac{1}{2}$  mills for every dollar of taxable property within the village. Laws were passed for protection of the water supply in Brooklyn and New York city; and under the law for the latter many sources of contamination in Putnam and Westchester Counties have been removed. The laws relative to public health were codified.

The statutory revision commission presented 16 bills, of which only 6 became laws. The 6 were: The public buildings law, the agricultural law (in two parts), the public health law, the military code, the amendments to the code of civil procedure as to surrogates, and the miscellaneous amendments to the penal code. The village law was amended so that any woman over twenty-one years of age who is a resident is eligible to the office of village clerk. The treasurer of each county and the comptroller of the city of New York shall retain 5 per cent. on the first \$50,000 paid under the direct inheritance tax law, 3 per cent. on the next \$50,000, and 1 per cent. on all additional sums; but in Erie and Monroe Counties the fees shall belong to the counties. An unexpended balance of about one half of the original appropriation of \$8,000 was reappropriated to continue the publication of the colonial statutes.

The revised statutes were amended in several important respects. Police justices in Brooklyn are allowed to solemnize marriages. The surviving parent is given larger powers of guardianship. Marriages are forbidden between uncles and nieces and between nephews and aunts. The miscellaneous amendments to the penal code, chapter 692, refer more particularly to the election law, the communication with prisoners, the evasion of civil rights, the setting fire to forest lands, the discharging of firearms, the meddling with steam pipes, the sending of messenger boys to disreputable places, the misconduct of veterinary surgeons, the using of false marks in manufacturing, the trespassing on Indian lands, and the unauthorized wearing of the badge of the Loyal Legion.

All the laws relating to the National Guard were recast into the military code, which became a law. The city of Brooklyn was authorized to issue \$100,000 in bonds to erect a soldiers' and sailors' monument. The sum of \$213,747 was appropriated for the expenses of the railroad strike in Buffalo in August, 1892. Appropriations for new armories or for repairing old armories were made as follow: Glens Falls, \$32,000; Amsterdam, \$25,000; Albany, \$22,000; Hornellsville, \$25,000; Niagara Falls, \$30,000; the city of Brooklyn was allowed to expend an additional \$200,000 on the Fourteenth Regiment Armory.

A new law requires two exits from all mines;

and another compels the equipment of freight cars with automatic couplers.

A codification of all the agricultural laws was passed. The supply bill gave \$15,000 for the maintenance of farmers' institutes, under the direction of the State Agricultural Society; \$4,500 for the State Weather Bureau; and \$50,000 to Cornell University for dairy husbandry. Hereafter no State money shall be expended for any substitute for butter. The keeper of a hotel or restaurant is forbidden to furnish imitation butter or cheese to his employees. A charter was given to the Beet Sugar Co-operative Community.

The Legislature of 1892 appropriated \$3,000 toward procuring an accurate topographical map of the State, and this year an appropriation of \$30,000 for the same purpose was made. The work is a joint one between the United States and New York State. Nine surveying parties are at work at various parts of the State—at Niagara Falls, at Oswego, at Watertown, in Franklin County, in the Mohawk valley, and along the route of the Champlain Canal. These parties are working under the scheme of co-operation between the State and the National Government. The State pays the expenses of the engineers, and the United States pays their salaries.

A law was enacted which, in its first stages, affected only Young Men's Christian Associations and Catholic Unions, but afterward it was made general. This provided that the real property of a corporation organized exclusively for the moral and mental improvement of men and women, or for religious, charitable, missionary, hospital, educational, patriotic, historical, or cemetery purposes, and used exclusively for such purposes, shall be exempt from taxation; if a portion only of a building is used for such purposes, then that portion alone shall be exempt. Church property is exempt, although the title may be in the name of a bishop. A law was passed to prevent a repetition of the Tilden will case, providing that no gift, grant, bequest, or devise to religious, educational, charitable, or benevolent uses, which shall in other respects be valid under the laws of this State, shall be deemed invalid by reason of the indefiniteness or uncertainty of the persons designated as the beneficiaries thereunder in the instrument creating the same.

The sum of \$100,000 was given for a new normal school in Jamaica.

All attempts to replace the paster ballot with the blanket ballot failed, as did also a bill requiring all voters in the rural districts to register in person.

The usual large appropriation for the improvement of the canals was not made. The sum of \$6,000 was appropriated for improving the westerly channel of the Hudson at Coxsack; \$6,000 for improving the easterly channel at Stuyvesant; and \$4,000 for repairing the dikes at Mull's Light, Pitoway Island, and Greenbush. The appropriation for continuing work on the Capitol was \$700,000.

The Legislature held memorial exercises for James G. Blaine, George William Curtis, Francis Kernan, ex-Speaker James W. Husted, and Senator Edward P. Hagan.

**Apportionment.**—The State apportionment, based on the national census of 1890, after con-

siderable legal agitation, was adjusted in compliance with decisions by the Court of Appeals.

**The World's Fair.**—During March the Legislature appropriated a second \$300,000 for the expenses of the State exhibit at Chicago, and in consequence New York had a building which was said to be the finest single piece of architecture at the fair. Efforts were made to save the building, and it was given to the women of Chicago, but they were unable to accept it. It had served its purpose and was destroyed. Among the exhibits of the Woman's Board at the fair was the collection of a library of books written by women. From this State went a collection of about 2,500 volumes written by New York women. The claim was made for it that it was absolutely complete. On its return, this collection was given a permanent home in the State library.

**Education.**—The number of children attending the common schools during 1893 was 1,083,223, an increase of 10,135 over the previous year. The number of school age was 1,892,388, showing that 809,160 children—nearly half the children of school age—were educated in private or parochial schools, or were not in school at all. The total amount expended for public schools during the year was \$21,901,678.72, an increase of \$767,162.98 over the amount expended in the previous year. The larger part of this sum was raised by local taxation.

**Lunacy.**—The gradual transfer of the care of the insane to the State commission, as provided for by the law enacted in 1890, has been successfully accomplished, but not without considerable difficulty. On Oct. 1, 1893, 8 great hospitals, costing \$10,426,127, containing about 9,000 insane patients, became a State charge, and for their support the Legislature appropriated \$1,343,000 for the year beginning with that date.

**Crime.**—According to the report submitted with the Governor's message, the number of convicts in the three State prisons on Sept. 30, 1893, was 3,491, being 104 less than on the same date of the previous year, and the lowest since 1889. Of this number 1,306 were employed in productive industries on Sept. 30, 1893, compared with 2,162 in 1892. This falling off could not but affect the prison receipts from industries. At the same time the employment of convict labor in building shops at Clinton and Auburn prisons has saved the State about \$46,000. The average cost of care and maintenance for the fiscal year was \$137.04 for each convict.

**National Guard.**—The supervision of the State militia is chiefly under the charge of the adjutant-general on the Governor's staff. The present incumbent is Maj.-Gen. Josiah Porter. According to his annual report there are about 650,000 men in the State subject to military duty. The State Guard comprises 11 regiments, 3 battalions, 44 separate companies, 5 batteries of light artillery, 1 troop of cavalry, and 3 signal corps. During the year the 69th Regiment was reduced to a battalion of 5 companies, the 8th Regiment to a battalion of 4 companies, and the 35th Separate Company, Ogdensburg, and the 45th Separate Company, Cortland, were disbanded. The General Government has adopted a new magazine small arm for the army.

The strength of the guard at the time of the



general muster was as follows: Cavalry, 107; infantry, 12,034; artillery, 392; signal corps, 88; naval militia, 428; total, 13,045. With but few exceptions, the percentage of attendance at the annual muster and inspection was good. None of the regiments had 100 per cent. present, but a number of separate organizations did. So did 4 companies (F, G, H, and I) of the 7th Regiment, each of which had 103 men on its roll. The largest companies are the 19th, of Poughkeepsie, and the 21st, of Troy. Each has 104 enlisted men on its roll. In the muster of the 21st every man was present.

**Labor Troubles.**—Matters pertaining to this subject are submitted to a State board of mediation and arbitration, which consists of William Purcell, Gilbert Robertson, and Edward Feeney. They report that during the year the most important strike was that of the Lehigh Valley Railroad during November, of which it is estimated that the cost to the company was over \$600,000, while the men lost \$300,000. The last sum includes \$140,000 paid out of brotherhood treasuries as relief money to strikers.

**Railroads.**—The management of the railroads is under the supervision of 3 commissioners. The present incumbents are Michael Rickard, Samuel A. Beardsley, and Alfred C. Chapin. According to their report, the figures, which are tabulated up to June 30, show that the gross earnings from operations of roads were \$234,354,615; gross expenses, \$157,128,964; net earnings, \$77,225,650. There are 47 street railroads operated by the overhead electrical trolley system, and 3 operated by the cable system.

**Factory Inspection.**—The State Factory Inspector is James Connolly, from whose report it appears that 11,068 factories, workshops, and sweat shops were visited during the year. In these places there were 412,237 persons employed, 138,708 of whom were women and girls. These persons were classified as to ages as follow: Females under twenty-one, 48,954; females under sixteen, 6,660; males under eighteen, 10,986; males under sixteen, 7,204; total children under sixteen, 13,864.

The report shows the number of children under sixteen employed in 1893 to have been a fraction under 34 in each 1,000 persons, against 38 in 1,000 in 1892.

**Banking Department.**—This is under the management of Charles M. Preston. In his report for the year ending Sept 30 he says:

During the very trying period of the last year, with 208 discount banks in operation, there were but 5 suspensions, as follow: The Canal Street Bank, New York city; the Cataract Bank, Niagara Falls; Queen City Bank, Buffalo; the Madison Square Bank, New York city; and the Commercial Bank, Brooklyn, having an aggregate capitalization of \$1,608,000. The Queen City Bank, after having remained closed for about two months, resumed business with a capital of \$300,000. Sixteen new banks, including the Queen City Bank, of Buffalo, which has resumed, and one individual banker have been organized during the last year, with a combined capital of \$2,150,480. The resources and liabilities of the banks on Sept. 19, 1893, were \$251,560,578. The increase of capital amounted to \$200,000 during the year. The net increase in State bank capital during the year was \$703,480.

**Agriculture.**—A department having charge of the interests of the farming population was

established in response to a suggestion made by Gov. Flower last year. The most interesting feature of the first annual report has to do with suppressing the sale of oleomargarine, which was contested by the manufacturers of that article. Armour & Co. brought action in the circuit court of the United States against the commissioner, seeking to enjoin him from enforcing the law. In the mean time the department procured and introduced in Congress an act subjecting oleomargarine and all imitation butter and cheese, upon its entry into the State, to all laws of the State passed as police regulations, whether in original package or not, and irrespective of the interstate commerce law.

During the year 1,155 cheese factories produced 110,448,691 pounds of cheese; 255 butter factories, 14,024,019 pounds of butter; and 213 factories, where both butter and cheese are made, produced 5,473,338 pounds of butter and 20,542,619 pounds of cheese.

The progress desired in vinegar inspection was not accomplished, owing to the contest as to the constitutionality of the law, which was finally determined by the General Term in November in accordance with the views of the department.

**Canals.**—The total tonnage carried on all the canals was 4,331,963, an increase of 49,968 tons over the preceding year. It was distributed as follows: Products of the forest, 1,030,604 tons; products of agriculture, 1,544,146 tons; manufactures, 66,892 tons; merchandise, 216,013 tons; and other articles, 1,474,308 tons; total, 4,331,963 tons. The amount of freight carried by the various canals was as follows: Erie Canal, 3,235,726 tons; Champlain Canal, 848,965 tons; Oswego Canal, 92,634 tons; Black River Canal, 115,877 tons; and Cayuga and Seneca Canal, 38,761 tons; total, 43,321,963 tons.

During the season of canal navigation the number of bushels of grain received at the port of New York was 108,962,706, of which the canals carried 43,076,900, or slightly over 39½ per cent. The cost of superintendence, ordinary repairs, and maintenance of the canals during the fiscal year was \$726,087.47. This is the lowest expenditure for these purposes in seven years. In addition, the Legislature appropriated \$780,000 for improvements. These are now under way and will increase the efficiency of the canals. Experiments authorized by the Legislature as to the feasibility of using electricity as a motive power on canals demonstrated, by experiments that were made on the Erie Canal near Rochester, that by the trolley system the cost of transportation may be lessened at least 25 per cent., and that the increase in speed may be augmented at least 30 per cent.

**Fisheries.**—The commissioners having in charge the care of the fish interests report that they planned during 1893 to hatch at least 100,000,000 fry, and they succeeded in distributing over 80,000,000 of the best varieties of fishes in the waters of the State. The total amount of fry hatched and distributed in the waters of the State was 50 per cent. in excess of the hatching and distribution of any previous year. Eighteen million whitefish were planted in Lake Ontario. The commissioners have devoted much time to the protection and distribution of food fishes.

**Forest Preservation.**—On the recommendation of the Governor, a forest commission was created, having for its objects: 1. The securing of tracts of the Adirondack forests owned by individuals or private associations as part of the State forest preserve; these to be guarded against denudation by a contract between the owners and the State whereby, in consideration of forest protection furnished by the State and exemption from State taxation, the owners and their grantees would refrain from removing the timber, except under conditions imposed by the State. 2. The acquiring by the State of a considerable revenue by granting permission to fell trees above a certain diameter on State lands, and to remove the timber. The commission report that 225,000 acres of Adirondack land have been offered to the State upon the terms of the proposed contract, and that standing spruce timber exceeding 12 inches in diameter has been sold on 17,468 acres of State land, from which it is expected that the first year's cutting will yield to the State a revenue of \$52,400.

**Political.**—The Democratic Convention was held in Saratoga Springs on Oct. 5-6, when a platform was adopted, of which the prominent features were a rehearsal of what the Democratic party had done for New York, telling how

It put New York entirely out of debt. It gave the people the lowest tax rates in a generation. It increased the tax receipts from corporations and inheritances by over \$3,500,000.

It enacted a scheme for the preservation of the Adirondack and Catskill forests.

It established a State department of agriculture.

It maintained an efficient management of the canals, and endeavored to increase their usefulness by the introduction of new motive powers.

It abolished the iniquitous "sweating system" in the manufacture of garments.

The platform further recommended tariff reform and the repeal of the Sherman bill, and closed by praising the administrations of President Cleveland and Gov. Flower. Besides nominating 15 delegates at large to the Constitutional Convention, the following ticket was chosen by acclamation: Judge of the Court of Appeals, Isaac H. Maynard; Secretary of State, Cord Meyer, Jr.; Comptroller, Frank Campbell; State Treasurer, Hugh Duffy; Attorney-General, Simon W. Rosendale; and State Engineer and Surveyor, Martin Schenck.

Almost simultaneously the Republican State Convention was held in Syracuse, over which Frank Brundage presided.

The platform adopted attacks the State organization, Judge Maynard, the last Legislature, and the State government. Its declaration of principles pledges the candidates nominated to nonpartisanship as a State canvassing board, and the Republican Legislature and State department officers, if elected, to the strictest economy. It pledges reforms in the election law, and promises nonpartisan election boards. It further pledges advocacy of such provisions of the Constitution as shall result in establishing home rule in every city and village in the State.

The following ticket was nominated: Judge of the Court of Appeals, Edward T. Bartlett; Secretary of State, John Palmer; Comptroller, James A. Roberts; State Treasurer, Addison B.

Colvin; Attorney-General, Theodore E. Hencock; Engineer and Surveyor, Campbell W. Adams.

Candidates for the various offices were also put in nomination by the Prohibition party, the People's party, and the Socialist party. A short canvass followed, in which the contest practically reduced itself to a fight for and against Isaac H. Maynard, the Democratic candidate for Judge of the Court of Appeals. The election was held on Nov. 7, when the vote given to Bartlett was 579,222, against 473,158 for Maynard. The other Republican State candidates were elected by pluralities from 23,000 to 35,000. Local candidates for State Senators and Assemblymen were also chosen.

As returned by the State Board, the Senate will stand—Republicans 18, Democrats 13, Independent 1; the Assembly—Republicans 74, Democrats 52.

On Jan. 17 the Legislature chose Edward Murphy, Jr., Democrat, as United States Senator, to succeed Frank Hiscock. The ballot was: Edward Murphy, Jr., 90 votes; Frank Hiscock, 64 votes; and Whitelaw Reid, 1 vote.

**Election Troubles.**—Subsequent to the election in November serious charges were made in the public press that the privilege of voting had been denied in the township of Gravesend to those who were politically opposed to John Y. McKane. At the instigation of Mr. McKane, who is the "boss" of that place, reputable citizens were driven from the polls, and thus deprived of their rights. In consequence, James W. Ridgway, District Attorney of Kings County, made request of Gov. Flower that he would suggest the names of one or more capable and honest lawyers whom he could appoint as his assistants, and to whom he could turn over the entire cares and responsibility of collecting the evidence and conducting the prosecutions of all persons who had been guilty of violating the laws in the election troubles in Kings County.

In compliance with this the Governor named George G. Reynolds and Edward M. Shepard, and with their aid McKane was brought to trial.

**NEW YORK CITY. Government.**—The city officials who held office during the year were: Mayor, Thomas F. Gilroy; President of the Board of Aldermen, George B. McClellan; Register, Ferdinand Levy; and Sheriff, John J. Gorman, all of whom are Tammany Democrats, and, with the exception of the sheriff, entered on the duties of their offices on Jan. 1, 1892.

**Finances.**—The condition of the city debt on Dec. 31, 1893, is shown in the table on top of next page.

During the year the cost of permanent improvement amounted to \$11,456,075.69, for which amount bonds were issued. The redemption of other bonds and the revenues of the sinking fund lacked \$2,132,840.19 of that sum, and in consequence the city debt has been increased to that extent. The interest charges on bonds maturing previous to and in the year 1904, bearing interest at 4, 5, 6, and 7 per cent., amount to \$3,429,780.08 annually, and these bonds could be refunded for long-period bonds issued at a rate of interest not exceeding 3 per cent., thereby saving \$1,745,689.63. Legislation should be had authorizing the Comptroller to refund, whenever practicable, the city's higher-rate se-



FUNDED DEBT.	Outstanding Dec. 31, 1892.	Issued during 1892.	Redeemed during 1892.	Outstanding Dec. 31, 1893.
1. Payable from the sinking fund, under ordinances of the Common Council.....	\$4,267,200 00			\$4,267,200 00
2. Payable from the sinking fund, under provisions of chapter 383, section 6, Laws of 1878, and section 176, New York City Consolidation act of 1882.....	9,700,000 00			9,700,000 00
3. Payable from the sinking fund, under provisions of chapter 383, section 8, Laws of 1878, and section 192, New York City Consolidation act of 1882, as amended by chapter 178, Laws of 1889.....	43,848,024 95	\$8,025,427 28	\$14,500 00	51,853,952 23
4. Payable from the sinking fund, under provisions of chapter 79, Laws of 1889.....	9,808,000 00	3,500 00		9,806,500 00
5. Payable from the sinking fund, under provisions of the constitutional amendment adopted Nov. 4, 1884.....	28,250,000 00	1,825,000 00		30,075,000 00
6. Payable from taxation, under provisions of chapter 490, Laws of 1883.....	445,000 00			445,000 00
7. Payable from taxation, under the several statutes authorizing their issue.....	52,494,946 05		114,700 00	52,380,246 05
8. Bonds issued for local improvements after June 9, 1880.....	5,817,802 90	1,602,148 41		7,419,951 31
9. Debt of the annexed territory of Westchester County.....	541,000 00		18,000 00	523,000 00
Total funded debt.....	\$155,161,973 90	\$11,456,075 69	\$147,200 00	\$166,470,849 59
TEMPORARY DEBT.—Revenue Bonds.				
1. Issued under special laws.....	358,483 92	550,024 21	250,084 85	658,478 78
2. Issued in anticipation of taxes of 1892.....	7,600 00		7,600 00	
3. Issued in anticipation of taxes of 1893.....		19,891,621 10	19,794,021 10	7,600 00
Total amount.....	\$155,528,057 82	\$31,807,721 00	\$20,198,855 45	\$167,136,923 37
Total funded debt.....			\$166,470,849 59	
Less amount held by commissioners of the sinking fund as investments.....			62,266,762 64	
Cash.....			3,441,679 44	
Total.....			\$65,708,442 08	
Net funded debt, Dec. 31, 1893.....			\$100,762,407 51	

curities into 3-per-cent. bonds having forty or more years to run. Nearly \$20,000,000 of revenue bonds, the interest on which approximated \$300,000, were issued in 1893 to pay the expenses of the city until the receipts from taxation became available. The financial stringency made it necessary in some cases for the city to pay 6 per cent. interest. During the past fifty years the money borrowed in anticipation of the collection of taxes has cost the city in interest almost \$15,000,000. The tax rate for 1893 was \$1.82 on each \$100 of assessment, which was the lowest rate known in this city for thirty years.

**Board of Estimate and Apportionment.**—This body, consisting of the Mayor, the President of the Board of Aldermen, the Comptroller (Theodore W. Myers), and the President of the Department of Taxes and Assessments (Edward P. Barker), allowed the following amounts for 1894: Mayoralty, \$28,000; Common Council, \$88,000; Finance Department, \$302,200; interest on city debt, \$5,134,199.59; redemption of principal of city debt, \$1,877,000.44; State taxes, \$4,112,266.62; rents, \$141,480; armories and drill rooms—rents, \$27,175; armories—wages, \$59,196; judgments, \$125,000; Law Department, \$206,900; Department of Public Works, \$8,061,960; Department of Public Parks, \$1,177,195; street improvements, \$359,360; Charities and Correction, \$2,295,675; Health Department, \$425,080; Police Department, \$5,139,147.64; Department of Street Cleaning, \$2,367,390; Fire Department, \$2,240,397; Building Department, \$204,700; Tax Department, \$128,220; Board of Education, \$4,634,134.27; College of the City of New York, \$150,000; Normal College, \$125,000; printing, stationery, and blank books, \$272,200; municipal service examining boards, \$25,000; coroners, \$54,700; commissioners of accounts,

\$32,500; sheriff, \$122,932; register, \$130,000; Bureau of Elections, \$374,450; preservation of records, \$45,430; street and park openings, \$100,000; jurors' fees, \$65,000; salaries, city courts, \$383,300; salaries, judiciary, \$1,161,890; miscellaneous, \$134,794.69; libraries, \$40,000; charitable institutions, \$1,312,384.44; total, \$38,664,257.69. Deduct general fund, \$3,600,000; grand total, \$35,064,257.69.

This statement shows that the amount allowed for 1894 is \$38,664,257.69, which is reduced by deducting the general fund made up by receipts from various sources during the year, including the unexpended balance of previous years amounting to \$3,600,000. The total amount to be raised by taxation is \$35,064,257.69, which, as compared with the allowance made for 1892, shows an increase of \$1,620,103 over the amount given last year; but as there was available from the general fund \$3,266,725.13, the absolute increase was \$886,824.14, which is more than made up by an increase of \$567,808.29 in the State tax, \$377,979.34 in the fund for the redemption of the city debt, and \$189,617.50 in the interest fund, all items mandatory upon the board and entirely apart from current expenses. Deducting these items, the budget shows a net decrease for 1894 of \$244,576.99 on current expenses.

**Wealth of the City.**—This department is a county trust, and is cared for by three tax commissioners, including Edward P. Barker, John Whalen, and Joseph Blumenthal, of whom the first named is president. They report the total valuations of real and personal property as assessed for taxation in 1893 at \$1,933,518,528.90, as against \$1,828,264,275 in 1892, showing a total increase of \$105,254,253.90, which is distributed as follows: Real estate, \$57,677,790; banks, \$10,299,703.90; corporations—resident, \$12,559,815;

nonresident, \$3,811,846; personal—resident, \$19,681,406; and nonresident, \$1,223,693.

**Public Works.**—This department is under the charge of a commissioner appointed by the Mayor, independent of the Board of Alderman. He holds office for four years, and receives a salary of \$8,000. The present incumbent is Michael T. Daly, who succeeded Thomas F. Gilroy when the latter became Mayor, on Jan. 1, 1893, and was again appointed to that place on May 1. The headquarters are at 31 Chambers Street. During 1893 the report of the department shows that the average daily water supply received and distributed was 174,000,000 gallons, which was furnished by natural flow except during the summer months, when 12,754,000,000 gallons of water was drawn from the storage reservoirs and lakes. The capacity of the aqueducts is 400,000,000 gallons. The length of water mains laid during the year is 10,630 lineal feet, making 715 miles of water mains in the city. About \$80,000 has been expended on the improvement of the Croton watershed. The contract for the 155th Street viaduct was made July 14, 1890, and the structure was completed and opened to the public on Oct. 2, 1893, the total cost of which to date is \$730,000. Work is in progress under the contract for building a new bridge over the Harlem river at Third Avenue, the cost of which will be \$1,222,000, and it is believed that it will be completed by the close of 1895. The contract for a drawbridge over the United States Ship Canal, to connect the Harlem and Hudson rivers, was made April 13, 1893. Shortly afterward the work was begun, and it is now progressing favorably. The Criminal Court building is completed, except minor interior details. The cost of the building is \$1,500,000, and it is considered the cheapest public building ever erected in this city. The city is lighted by 24,312 gas lamps, 2,436 electric lamps, and 152 naphtha lamps. The annual cost of lighting the city is: Gas, \$495,000; electricity, \$408,000. The area and mileage of new pavements laid during 1893 exceed those of any previous year in the history of the city. To replace worn-out pavements, 336,650 square yards of granite block and 226,359 square yards of asphalt pavement were laid. Of pavements on new streets, 53,415 square yards of granite block and 26,793 square yards of asphalt were laid. The area and mileage of various kinds of pavement in this city are: Improved specification stone blocks, 216.50 miles; old square stone blocks, 66.73 miles; asphalt, 52.26 miles; macadam, 20.80 miles; cobble stone, 0.27 mile; total, 356.56 miles. Asphalt work is done in Paris for \$3.42 a square yard, and the cost of maintenance is reported at a price that in fifteen years would amount to \$4, a total of \$7.42 a square yard. In this city the asphalt pavement is laid at an average cost of \$3.85 a square yard, under contracts guaranteeing that it will be kept in order for fifteen years without additional cost to the city. In extending and improving the sewerage system, about 7 miles of new sewers and culverts, with 67 receiving basins, were built. There are now 456.37 miles of sewers in the city. An experiment was made of treating sewage and drainage by the Wolfe electrozone process, the result of which has been to destroy bacteria and clarify the water or

liquid sewage, so as to render it practically harmless.

**Public Parks.**—This department is under the direction of a board of 4 commissioners, consisting of Abram B. Tappan, President, who receives a salary of \$5,000 a year, and Nathan Straus, Paul Dana, and George C. Clausen, who succeeded Henry G. Winthrop on May 1, 1893. The Secretary of the Board is Charles DeF. Burns, and the headquarters are at 31 Chambers Street. During the year the department has cared for more than 40 parks and plazas in the city, besides 10 parks and parkways north of the Harlem river. All roads and paths have been repaired to the full extent of the appropriation for the year. Rutgers Park has been thrown open to the public, and a large amount of construction work has been accomplished on the addition to the East River Park. The operations in the way of constructing and maintaining roads and bridges have furnished and continue to furnish employment for over 2,000 people. The Castle Garden Aquarium has been visited by specialists from other countries, and the construction so far as it has progressed has been approved. Its cost will be upward of \$250,000, and it is hoped that the aquarium may be opened in May. The obelisk in Central Park has been coated with paraffin, to preserve it from the action of the elements. This has cost \$2,000, and an aluminium cap, gilded, has been placed upon it at a cost of \$150, thus restoring one of its ancient features.

**Building Department.**—This department is under the control of a commissioner, who receives a salary of \$5,000 a year. The present incumbent is Thomas J. Brady, with headquarters at 220 Fourth Avenue.

During the year there were filed in this department plans for the erection of 2,275 houses at an estimated cost of \$54,859,318, and 2,014 plans for alterations at an estimated cost of \$6,804,527. Among the new buildings recently completed or about to be occupied are the Manhattan Life Insurance building, at the corner of Broadway and Exchange Place; the Postal Telegraph building, at the corner of Broadway and Murray Street; the Shoe and Leather Bank, at the corner of Broadway and Chambers Street; the Criminal Courts building, at the corner of Center and Franklin Streets; the Bowery Savings Bank building, at the corner of Bowery and Grand Street; the Bank for Savings, at the corner of 22d Street and Fourth Avenue; the Metropolitan Life Insurance building, at the corner of 23d Street and Madison Avenue; the Hotel Waldorf, at the corner of Fifth Avenue and 33d Street; the Herald building, at the corner of Broadway and 35th Street; the Empire Theater, at the corner of 40th Street and Broadway; the New Netherlands Hotel, at the corner of 59th Street and Fifth Avenue; and, besides numerous magnificent residences—such as that of Cornelius Vanderbilt, at the corner of 57th Street and Fifth Avenue, and that of John Jacob Astor, at the corner of 65th Street and Fifth Avenue—there must be mentioned the Teachers' College, on the Boulevard and Morningside Heights.

**Vital Statistics.**—The Board of Health consists of the President of the Board of Police, the health officer of the port, and two commission-



ers, one of whom must have been for five years a practicing physician. The commissioner who is not a physician is president of the board, and receives a salary of \$5,000, while the other member is paid \$4,000. The *ex-officio* commissioners receive no salary. The officials during 1893 were as follow: President Charles G. Wilson, Dr. Joseph D. Bryant, who resigned, and was succeeded on March 30 by Dr. Cyrus Edson, Health-Officer William T. Jenkins, and President of the Board of Police James J. Martin. The secretary of the board is Emmons Clark, and the headquarters are at 301 Mott Street. The vital statistics were as follow:

ITEMS.	1892.	1893.
Deaths under one year.....	11,896	11,105
Deaths under five years.....	18,684	17,872
Total deaths.....	44,370	44,329
Total reported births.....	49,447	51,516
Total reported marriages.....	16,001	16,144
Total reported stillbirths.....	3,573	3,636
Death rate per 1,000 living.....	24.26	28.46

The principal causes of death were as follow: Pneumonia, 6,476; phthisis, 5,101; diarrhoeal diseases, 3,314—under five years, 2,901; Bright's disease and nephritis, 2,561; heart disease, 2,376; diphtheria, 1,962; bronchitis, 1,569; croup, 585; scarlet fever, 551; whooping cough, 540; cerebro-spinal meningitis, 467; measles, 387; typhoid fever, 380; influenza, 220; typhus fever, 201; malarial fever, 133; and smallpox, 100. Besides the foregoing, there were 43 fatal sun-strokes, 47 homicides, 313 suicides, and 1,565 fatal accidents.

**Police.**—This department is controlled by a board of 4 commissioners appointed by the Mayor for a term of six years, who receive a salary of \$5,000 each. The board during 1893 consisted of James J. Martin, president, John McClave, John C. Sheehan, and Charles F. McLean. The superintendent of police is Thomas F. Byrnes, and the headquarters are at 300 Mulberry Street. The force on Jan. 1, 1894, consisted of a superintendent, 4 inspectors, 37 captains, 163 sergeants, 28 detectives, 179 roundsmen, 3,296 patrolmen, 82 doormen, 15 surgeons, 20 matrons, 13 persons in telegraph office, a chief of the Bureau of Elections, and 29 clerks—a total of 3,930. During the year 53 members of the force died, 96 were retired, and 16 were dismissed.

**Fires.**—This department is under the control of a board of 3 commissioners, as follow: John J. Scannell, president, Anthony Eickhoff, and S. Howland Robbins, who was succeeded on May 1 by Henry Winthrop Gray, each of whom receives a salary of \$5,000 a year. The chief of the department is Hugh Bonner, and the headquarters are at 157 East 67th Street. The force on Jan. 1, 1894, included 1,056 officers and men, 58 engine companies (including 3 fireboats), 22 hook and ladder companies, 93 steam fire engines (including 24 spare ones), 3 fireboats, 4 water towers (including 1 spare one), 34 hook and ladder trucks (including 11 spare ones), and 405 horses. During the year there were 4,132 fires, of which 3,681 were confined to the point of starting, 233 were confined to the building, and 49 extended to other buildings. Of the total number, 169 were not in buildings. It is

estimated that the losses by fire in 1893 amounted to \$5,630,937, the insurance on the buildings and other property burned or damaged being \$80,447,194. The average loss at the fires for the year was \$1,362.42. There were 4,454 alarms sent out. The underground telegraph system has 386 alarm boxes, 53 apparatus houses, and 5 fire-department buildings. Thirty schoolhouses and 4 hospitals are now connected by telegraph through subways and subsidiary ducts by means of 86 miles of cable, having 799½ miles of conductors. Telegraph poles to the number of 259 and 132½ miles of wire were taken down during the year. There was received for licenses, permits, and penalties, \$48,153.80.

**Electrical Subways.**—This department is under the control of a board of 4 commissioners, consisting of the Mayor, Jacob Hess, Theodore Moss, and Walton Storm. The office is at 1266 Broadway. During the year 100½ miles of telegraph and telephone subway and 49½ of light and power subways were laid. There are now in the city 874 miles of the former and 820 miles of the latter. There are 32,600 miles of wire in the telegraph and telephone subways, and 1,300 in the light and power subways. The city has now 6,790 arc lamps and 268,000 incandescent lights. There are nearly 10,000 telephones operated through the subways. The board has removed 1,407 poles and 960 miles of wire without expense to the city. The total number of poles removed since the board came into existence is 17,272, and the total miles of wire 23,320.

**Docks.**—This department is under the control of 3 commissioners, each of whom receives a salary of \$5,000 a year. In the early part of 1893 the commissioners were Edwin A. Post, president, James Matthews, and J. Sergeant Cram; but subsequent to May 1 the board became J. Sergeant Cram, president, Andrew J. White, and James J. Phelan. Office, Pier A, North river. The work of 1893 included preparation of a plan for improvement of the North river front from Charles Street to West 23d Street, adapted to the requirements of the conditions and commerce of this port. This plan proposes accommodations for docking the largest existing vessels at a minimum expense, and an increase of wharfage room of more than 3 miles. The expenditures of the Dock Department amounted to \$2,595,801.93, of which \$783,478.12 were for acquired property, \$1,557,350.96 for construction, and \$254,972.85 for maintenance and repairs of the whole water front. The gross revenue was \$1,786,196.13, an increase of more than \$100,000 over any previous year. Applications for the rental of 10 of the new piers are in hand, for 2 of which \$60,000 a year each is offered, and the improvement will tend to enhance the commercial supremacy of the city. In carrying it out, no additional appropriation will be asked for.

**Street Cleaning.**—This department is managed by a single commissioner, who receives a salary of \$6,000 a year. At the beginning of 1893 Thomas S. Brennan held the place of commissioner, but later he gave way to William S. Andrews. Office, Room 187, Stewart Building. During the year more than 109,852.12 miles of streets have been swept, and 1,564,088 cart loads

of material, including ashes, garbage, and street sweepings, have been collected. Of this amount, 1,491,021 loads have been sent to sea, and the remainder has been used for filling in lots. The amount of snow and ice removed was 86,155 cart loads. The department has swept 382.76 miles of paved streets daily, and removed the ashes and garbage from 594.44 miles of street. It has seized and removed 1,042 vehicles, of which 697 were redeemed at a cost of \$1,282. There was collected \$85,269.68 for the privilege of trimming scows and sorting out the bones and other material worth saving, and \$1,676.87 from auction sales of old material. The total expenditures to Dec. 1 were \$2,054,152.83, out of \$2,367,390 allowed by the Board of Estimate and Apportionment.

**Monuments.**—During the year an unusual number of monuments were added to those that already adorn the highways of the metropolis. Among these, the first in point of time was the unveiling of a bronze tablet by the veterans of the Seventh Regiment, on the southeast corner of Fulton and Nassau Streets. This event took place on the evening of April 19, which was the sixty-ninth anniversary of the organization of the regiment, and the thirty-second anniversary of the regiment's departure for Washington at the outbreak of the civil war in 1861. The tablet is of bronze, 5 feet high and 2½ feet wide. It bears the inscription: "On this site, the old Shakespeare Tavern, was organized the Seventh Regiment, National Guard, State of New York, Aug. 25, 1824. This tablet was erected by the Veterans of the Seventh Regiment, 1893." A monogram of the initial of the organization and the number 7, with a representation of the old tavern, all in bas-relief, combine to make a fine piece of art. Encircling the monogram are the words, "Pro patria et gloria."

A monument to the memory of John James Audubon, the distinguished ornithologist, was raised over his remains in Trinity Cemetery on April 26. A popular subscription of \$10,000 was collected by a committee appointed by the New York Academy of Sciences, in co-operation with committees named by other scientific organizations. The memorial is in the form of a cross of North river blue stone, at the base of which is a likeness of Audubon carved in stone, and his name beneath. The pedestal is of granite. On the evening of the same day a memorial meeting was held in the American Museum of Natural History, when a eulogy on Audubon was delivered by Daniel G. Elliot, a former president of the American Ornithologists' Union.

On April 27, in accordance with a special act of the State Legislature passed in 1891, a monument erected by the Commonwealth to the memory of John Ericsson was transferred to the city. The statue, which represents a heroic figure of the great inventor, is 8 feet 3 inches high, stands on a well-proportioned pedestal of granite 8 feet 9 inches high, and cost \$10,000. On each of the four faces of the pedestal there are bronze panels 27 by 12 inches, presenting in low relief views of the engagement between the "Monitor" and the "Merrimac," the first screw steamship, the "Princeton," and various other inventions of Ericsson. Both the statue and the

panels are by J. Scott Hartley. The monument stands just north of the Whitehall boat basin, and about fifty feet west of the United States Barge Office, facing the Battery. The formal ceremonies included the presentation of the monument by the State represented by Ashley W. Cole, and its acceptance by Paul Dana, President of the Park Commissioners, followed by an oration on the life-work of Ericsson by his biographer, Col. William C. Church.

On Evacuation Day, Nov. 25, the Sons of the Revolution continued their work of commemorating important events in the War of Independence by unveiling five tablets, as follow:

At Broadway and 43d Street, with the inscription, "Near this spot, Sept. 15, 1776, the day before the battle of Harlem, Gen. George Washington and Gen. Israel Putnam met and consulted during the movement of the American army."

At Golden Hill, John Street, with the inscription, "Here, Jan. 18, 1770, the fight took place between the Sons of Liberty and the British Regulars (Sixteenth Foot). First blood shed in the War of the Revolution."

At southeast corner Washington and Laight Streets, with the inscription, "To commemorate the landing of Gen. George Washington at the foot of Laight Street, North river, accompanied by the troop of Philadelphia City Horse, on Sunday, July 23, 1775, on his way to take command of the American army at Cambridge, Mass."

At No. 1 Broadway, with the inscription, "Here stood the house (Kennedy) once occupied by Gen. George Washington and Gen. George Clinton as headquarters during the Revolutionary War. In the Bowling Green, opposite, the leaden statue of George III, King of England, was destroyed by the people, July 9, 1776, and later made into bullets for the American army."

At 153d Street and Eleventh Avenue, Battle of Harlem Heights, with the inscription, "In Memory of Col. Thomas Knowlton and Major Andrew Leitch, of the American Army, killed near this spot, Sept. 16, 1776, at the Battle of Harlem."

Subsequently, on the same day, a bronze heroic statue of Nathan Hale, by Frederiek MacMonnies, was unveiled at the southwest corner of City Hall Park. It was presented to the city by President Tallmadge on behalf of the Sons of the Revolution, and accepted by Mayor Gilroy. Suitable addresses followed by Gen. Oliver O. Howard and Edward E. Hale, a descendant of the hero.

A bronze statue of Roscoe Conkling, by John Q. A. Ward, was unveiled on Dec. 3 at the southeast corner of Madison Square, without any ceremony. The site of the monument is the spot where Mr. Conkling was overcome by the blizzard, March 12, 1888, and contracted the illness that ended his life.

The formal presentation of a bust erected by the Hancock Memorial Committee, aided by the W. S. Hancock Post, No. 259 G. A. R., in Hancock Square, at the intersection of Manhattan and St. Nicholas Avenues, took place in the Governor's Room, City Hall, on Dec. 30. The presentation speech was made by Gen. Horace Porter, and on behalf of the city and the Park Commissioners the gift was accepted by Mayor Gil-



roy. The memorial consists of a bronze bust 4½ feet high, supported by a granite pedestal 10 feet high. The bust, pedestal, and pediment are together 16 feet high. The bust was made from a plaster cast taken from life by Wilson McDonald in the year when Gen. Hancock was a candidate for President. The original bronze is now in the Metropolitan Art Museum.

**The Grant Monument.**—At the annual meeting of the Grant Monument Association, held on Feb. 28, it was reported that during the past year the State Legislature had authorized an increase of the number of trustees to 100, and the by-laws had been so amended as to provide that all officers and members should serve without compensation. A total amount of \$399,320 had been received from 17,118 subscribers. Adding to the above receipts the balance turned over by the previous boards, gives a total amount of \$506,857, while the disbursements during the year have been only \$30,798, leaving a balance of \$475,058, which is mainly deposited with four prominent trust companies of this city, which allow interest at the rate of 3 per cent. per annum. The amount now on hand will substantially complete the monument save for a small additional amount for a sarcophagus and the decoration for the interior of the crypt. The completion of the work will be pushed with all haste consistent with economy and good workmanship, and it is expected that the monument will be finished by the fall of 1895. A very interesting feature decided upon during the year is the roll of living veterans of the war, made up of the signatures of the individuals, which will rest in a specially provided niche in the crypt. The parchment pages of this roll of honor are being rapidly perfected.

**The Columbus Celebration.**—In honor of the discovery of the New World by Christopher Columbus in 1492, the United States, in accordance with an act of Congress passed on April 25, 1890, extended an invitation to the great nations of the world to join in an international naval display to be held in New York harbor, beginning April 26. This event was originally intended to have inaugurated the celebrations which were to have culminated in the opening of the World's Fair in Chicago in 1892, but the postponement of that event for one year resulted in a similar postponement of the naval celebration. The rendezvous of the review fleet was held in Hampton Roads on April 24, and there, under the command of Rear-Admiral Gherardi, the senior officer in the United States navy, was gathered the finest fleet of American war vessels ever seen together, with representatives from the leading foreign nations, including the Spanish caravels. These strange craft, built in Carraca by the Spanish Government, are models, as near as could be ascertained, of the original vessels with which Columbus made his voyage. Also, they bear the names of the original fleet—the "Santa Maria," the "Pinta," and the "Nina." They crossed the Atlantic in safety, reaching Hampton Roads in due time, whence they were conveyed to New York, where they arrived on April 24.

On the morning of April 25 the caravels were towed to their places in the Hudson river, opposite 92d Street, where they formed the head of the line. As they passed Forts Wadsworth and

Hamilton, and then old Castle William, they received recognition by salutes from the cannon of these fortresses, which were acknowledged in like method from their tiny swivel guns. At noon, on the picturesque heights of the Navesink Highlands, where the twin lighthouses stand, a new flagstaff, 135 feet high, had been erected, and at the appointed time the Paul Jones flag, that once floated over the "Bon Homme Richard," was raised. Appropriate addresses by John Winfield Scott and Albert Shaw followed. Soon the fleet came in sight, led by the flagship "Philadelphia," and, as the vessels one by one passed the venerable ensign, loud-mouthed cannon from friend and stranger greeted the Stars and Stripes. As the great vessels swung into their anchorage just below the Narrows the forts took up the sounds, and answering cannon acknowledged the salutes fired in honor of the United States. Then a committee, consisting of George B. McClellan, President of the Board of Aldermen, J. W. Miller, Commandant of the State Naval Reserve, and Howard Carroll, representing the Columbian Entertainment Committee, visited each vessel and formally bade them welcome in the name of the municipality.

*Wednesday.*—On the morning of April 26 the ceremonies began with the unveiling, at 10 A. M., of the monument raised to the memory of Captain Ericsson, followed at the conclusion of the addresses by a salute of 21 guns fired by the monitor "Miantonomoh," stationed off Governor's Island. Meanwhile the combined fleets had slowly got into position, and, forming in double column off Norton's Point, began their advance into the harbor and up the Hudson river. The port column, composed of the American fleet, was led by the "Philadelphia," which was Admiral Gherardi's flagship. It was divided into two squadrons. The first, commanded by Admiral Benham, was headed by his flagship, the "Newark," while the second, commanded by Admiral Walker, was headed by his flagship, the "Chicago." The starboard column was headed by the British cruiser, the "Blake," commanded by Sir John Hopkins, a vice-admiral in the English navy. The advance continued until the "Philadelphia" and the "Blake" reached their anchorage off 88th Street. As the columns proceeded up the bay a distance of 600 yards was maintained until they passed the Battery, when the distance was decreased to 400 yards, while the vessels kept 300 yards of clear water between them until they reached the buoys by which their respective anchorages were designated.

The following is the order in which the ships of the Columbian review fleet were ranged: West column—"Philadelphia," "Newark," "Atlanta," "San Francisco," "Bancroft," "Bennington," "Baltimore," "Chicago," "Yorktown," "Charleston," "Vesuvius," "Concord"; "Nuevo de Julio" (Argentine); "Van Speijk" (Holland); "Kaiserin Augusta," "Sceadler" (German); "Miantonomoh." East column—"Blake," "Australia," "Magicienne," "Tartar" (British); "Dimitri Donskoi," "General Admiral," "Rynda" (Russian); "Aréthuse," "Hussard," "Jean Bart" (French); "Etna," "Giovanni Bausan" (Italian); "Infanta Isabel," "Reina Regente," "Neuva España" (Spanish); "Aquideban," "Tiradentes," "Republica" (Brazil).

*Thursday.*—In accordance with a bill passed by the Legislature and signed by the Governor, this day was observed as a legal holiday throughout the State. It was the day of the celebration toward which all previous events were but preliminary. The fleets of the world were to be reviewed by the President of the United States, for which purpose he came from Washington attended by his Cabinet to thus honor the nations that had sent their representatives. Orders had been issued that at 8 A. M. each vessel was to hoist colors and dress ship. The review was announced to begin at 10.30 A. M., but the weather was unfortunate, and, owing to a belief that it would clear, a postponement until 1 P. M. was obtained early in the forenoon. Promptly at the postponed time Mr. Cleveland and his party reached the "Dolphin," the reviewing boat, and as the blue presidential flag went to the peak, a gun from the "Miantonomoh" announced to the fleet that the review had begun. The "Dolphin," carrying the President and his party, was followed by the "Blake," on board of which were the diplomatic corps; then came the "Monmouth" with the guests of the city, including many Senators and congressmen, and a number of officers of the army and navy, and finally the "General Meigs" with the Duke of Veragua and his attendants. The reviewing party then entered midway between the two lines of war ships. As they approached, the band on each vessel played the national air of the country to which it belonged, the officers and marine guard on the poop deck saluted, the sailors manned the yards, while the men on the rail, both starboard and port, faced the reviewing ship. As the "Dolphin" passed, a salute of 21 guns was fired by each vessel in honor of the President. When the "Dolphin" passed the big "Blake" and the majestic "Philadelphia," and heard the flagship's music, she steamed up to a point within 300 yards of the "Santa Maria" and came to an anchor. A few minutes later the barges of admirals and gigs of captains put off from every ship in the fleets and headed for the "Dolphin," where for over an hour the President and his Cabinet held a reception to the commanding officers of the fleet. Mr. Cleveland then returned to the city. While the reception was in progress the "Philadelphia" steamed up the Hudson to a point abreast of Gen. Grant's tomb, and fired a salute of 21 guns in honor of the natal day of the hero. An exhibition of search lights and night signals was given by the war vessels, beginning at 8 P. M. The rain of the day had settled into a mist, and the river was dark with fog, but suddenly, at the time appointed, a great beam of light flashed along the line and settled on the "Miantonomoh." Then from every vessel in the fleet there burst strong flashes of light, and it seemed as if the sun had broken out from beneath a cloud, for the darkness had vanished, and it was light as day. Some of the vessels displayed arc lights, some sent out 2 lights, some sent out 4, each apparently playing at cross purposes. Then came the illumination with colored lights, and the outlines of the vessels appeared in red, then green, and finally white light. The admirals, the staff officers, and the captains of the naval vessels were guests of the city at a ball given in Madison Square Garden. The Garden became fairy land. Unique arrange-

ments of flowers, novel effects with miniature electric lamps, brilliant designs with flags and banners, delighted the eye and pleased the fancy. From the keystone of the arch hung an electrically lighted cupid, and revolving electric stars, which changed color at each revolution, were placed on the faces of the base. High above the platform at the Madison Avenue entrance was the emblem, "Greeting of the New World," in white flame. Beneath this stood the Mayor of the municipality to receive his guests. These included the President of the United States, the Governor of the State, the Duke of Veragua, and, besides the foreign officers, representatives of the best-known New York families. From 11 to 1 dancing and banqueting continued, and then the President departed, bringing to a close the greatest of the many great entertainments that have been held in New York city.

*Friday.*—It was early morning when preparations were begun for the continuation of the celebration, and at 9 A. M. the marines and sailors began to land at the piers of the streets below 42d Street for the land parade. Shortly before 11 o'clock a start was made at the corner of Fifth Avenue and 42d Street. At the head of the procession was Roswell P. Flower, Governor of New York and commander in chief of the State forces, with his staff, and escorted by New York's Troop A of the Dragoons. He was followed by the commanding officers of the foreign and United States vessels in carriages. Then came, in 4 battalions, a brigade of sailors and marines from the United States war vessels, forming the first division. A second division included the foreign marines and sailors from the visiting war ships, and finally, under command of Gen. Louis Fitzgerald, the National Guard of the State. It was estimated that there were 12,000 men in line, and the procession moved down Fifth Avenue to Waverly Place, thence to Broadway, past the stand in front of City Hall, where the Mayor reviewed the parade, thence down Park Row to Broadway, ending at the Battery. The President arrived at City Hall, and was to have been among those who reviewed the procession, but his presence was necessary in Chicago to open the World's Fair there, and he left before the head of the line reached City Hall. In the evening a formal banquet, in which 450 persons participated, was given by the Chamber of Commerce to the visiting naval officers.

*The Viking Ship.*—This vessel, 75 feet long, 16 feet beam, drawing 4 feet of water, and carrying 200 yards of canvas, was built in Norway in imitation of the early vessels with which the Norsemen discovered America. It left Bergen, Norway, on April 30, under command of Magnus Anderson, with a crew of 12 men, under orders to proceed to Chicago by way of New London and New York. It reached New London on June 13, and New York four days later, whence after a short stay it proceeded to Chicago by way of the St. Lawrence river and the Great Lakes. While in New York the ship was visited by many persons, and both the captain and crew were made the recipients of numerous courtesies, both public and private.

*Political.*—The election of 1893 was held on Nov. 7, when the following were voted for:

*Democratic.*—Comptroller, Ashbel P. Fitch;



Sheriff, Charles M. Claney; District Attorney, John R. Fellows; Surrogate, John H. V. Arnold; Judge of the Court of Common Pleas, Miles Beach; Justices of the City Court, James M. Fitzsimons and Lewis J. Conlin; and Coroners, Edward T. Fitzpatrick and William H. Dobbs; also for a justice of the district court in each judicial district, for a Senator and 5 district delegates to the Constitutional Convention from each senatorial district, for 30 members of Assembly, 15 delegates at large to the Constitutional Convention, and a commissioner of street improvements.

*Republican.*—Comptroller, Henry C. Robinson; Sheriff, Thomas L. Hamilton; District Attorney, Charles H. Murray; Surrogate, William H. Townley; Judge of the Court of Common Pleas, Mortimer C. Addoms; Justices of the City Court, William M. K. Olcott and John O'Connell; and Coroners, Edgbert P. Fritz and Peter H. McDonald; also for a justice of the district court in each judicial district, for a Senator and 5 district delegates to the Constitutional Convention from each senatorial district, for 30 members of Assembly, 15 delegates at large to the Constitutional Convention, and a commissioner for street improvements.

*Prohibition.*—Comptroller, Frederick C. Albrecht; Sheriff, William Smagg; District Attorney, Atkinson Sharnberg; Surrogate, Thomas D. Stetson; Judge of the Court of Common Pleas, Charles E. Manierre; Justices of the City Court, Alfred L. Manierre and James H. Laird; and Coroners, J. Howard Yarnall and George C. Needham; also for a justice of the district court in each judicial district, for a Senator and 5 district delegates to the Constitutional Convention from each senatorial district, for 30 members of Assembly, 15 delegates at large to the Constitutional Convention, and a commissioner for street improvements.

*Socialist Labor.*—Comptroller, Theodore Birk; Sheriff, Samuel Jacobson; District Attorney, Howard Balkam; Surrogate, Charles Franz; Judge of the Court of Common Pleas, Isaac Bennett; Justices of the City Court, Enoch K. Thomas and Henry Foth; and Coroners, George C. Stiebling and Woldemar Dorfmann; also for a justice of the district court in each judicial district, for a Senator and 5 district delegates to the Constitutional Convention from each senatorial district, for 30 members of Assembly, 15 delegates at large to the Constitutional Convention, and a commissioner for street improvements.

*People's Party.*—Comptroller, H. Alden Spencer; Sheriff, John Haggerty; District Attorney, Thomas J. Sandford; Surrogate, Wilbur Aldrich; Justices of the City Court, Nicholas Aleinikoff and Edward W. Chamberlain; and Coroners, Edward B. Foote, Jr., and Walter C. Moore; also for a Senator and 5 district delegates to the Constitutional Convention from each senatorial district, for 30 members of Assembly, 15 delegates at large to the Constitutional Convention, and a commissioner for street improvements.

Of the foregoing, the Democratic candidates were successful except with the candidates for the 15 delegates at large to the Constitutional Convention and with the nominees for members of the Assembly for the Eleventh, Twenty-third,

and Twenty-seventh Districts in which cases the Republican candidates were elected.

On March 21 a special election was held to fill the vacancy in the Ninth Senatorial District resulting from the death of Edward P. Hagan, and Thomas F. Cunningham (Democrat) was elected, receiving 14,805 votes against 2,054 for Edward L. Montgomery (Republican), 228 for George W. Needham (Prohibition), and 360 for William F. Miller (Populist).

**NICARAGUA**, a republic in Central America. The legislative power is vested in a Senate of 18 members, elected for six years, and a House of Representatives having 21 members, whose term is four years. The President's term is four years also. Dr. Roberto Sacaza was elected President in 1892. The active army has a legal strength of 1,200 men, besides which there is a reserve of 10,000 men and a National Guard or militia force of 5,000 men. Two thirds of the revenue is derived from monopolies of liquors, tobacco, and gunpowder, and the other third from import duties and a tax on cattle.

The area of the republic is 49,500 square miles. The population in 1889 was 282,845, consisting of 136,249 males and 146,596 females, besides 30,000 wild Indians. The chief industries are the raising of cattle, of which there are 400,000 head, and the cultivation of coffee and bananas, and gold mining. The production of coffee in 1891 was 113,000 quintals. The export of coffee in 1890 was valued at \$2,487,646. The total value of the exports was \$3,834,137, of which \$1,169,051 went to the United States, \$863,432 to Germany, \$793,249 to France, and \$461,634 to Great Britain. The total value of imports was \$2,536,820, of which \$995,855 came from Great Britain, \$597,043 from the United States, \$531,277 from France, and \$495,218 from Germany. In 1891 the total imports were \$2,738,500, and the exports \$2,376,500. There are 91 miles of railroads and 1,700 of telegraphs.

**Revolution.**—Exhausted and impoverished by the internecine struggles of former times, Nicaragua has for many years been free from serious revolutionary outbreaks. The Nicaragua Canal enterprise, which seemed to insure the conditions of lasting peace and progress, indirectly contributed to the greatest revolution that has taken place since the dictatorship of Walker, in 1856, for it encouraged the Government to undertake extravagant public works and waste the public funds and incur new debts in a way that produced widespread and profound dissatisfaction. The Constitution provides that when the President dies or absents himself from the country his successor is to be chosen by lot from among 5 Senators appointed by the vote of the Senate at the beginning of the presidential term. Dr. Sacaza, a distinguished surgeon, was chosen in this manner on the death of President Evaristo Carazo, in August, 1889. Sacaza's accession gave much general satisfaction, as he had few enemies, not being a party leader, and the preceding Administration had been weak and unpopular. Soon, however, he antagonized the prominent politicians by calling into his councils men of little weight, thinking that he could rule alone and create a personal following that would insure his election for a regular term. As the time

for election drew near he saw that coercive means were necessary to accomplish his object. In August, 1891, he arrested and exiled some of the most prominent men in the country, including Ex-President Zavala, and in a fight resulting from his arbitrary proceedings José Pasos and other well-known citizens were killed. These acts made him exceedingly unpopular, but he succeeded in being elected by the means commonly used, drafting men opposed to him into the army to deprive them of their votes and releasing those who would vote for him, making wholesale promises of patronage and contracts, buying up or suppressing newspapers, and exiling the leaders of the opposition. After his election the era of extravagance and jobbery was begun. Railroad concessions were granted merely to give employment to partisans. Contracts were awarded to favorites and relatives for all kinds of unnecessary work and supplies, for example, to furnish wood to the national railroad in quantities sufficient to last a score of years. The treasury was soon depleted, and then friends of the President were commissioned to negotiate loans, the largest part of which is said to have gone into their own pockets. Finally the treasury became bankrupt and the Government was unable to pay the railroad and other employees. It obtained \$400,000 from the Bank of Nicaragua, mortgaging the national railroad for the loan and paying exorbitant interest, expunging for the purpose the clause in the bank's charter fixing a legal rate.

The indignation roused by these proceedings at last drove the leaders of the numerous parties to unite for the overthrow of Sacaza. Joaquín Zavala took the lead, having at his back a large section of the Progressist Conservatives. With these were leagued the *Iglesieros* or Clericals and the Liberals under the leadership of Santos Zelaya, both strong in Sacaza's own province. In March the Government seized a large quantity of arms that were secreted in the city of Leon and arrested Ex-Minister Duarte and Col. Anastacio Ortiz. The revolution begun in the city of Grenada, the headquarters of the Progressists, where the barracks were seized by the insurgents on April 28, 1893. Masaya was also seized at the same time. In both places the garrisons surrendered without resistance. This was followed by the occupation of Matagalpa, Rivas, Jinotepe, Chantelos, and San Juan del Sur, and afterward of the forts on the San Juan river and Greytown, the eastern entrance of the Nicaragua Canal. The bishop, supported by the best citizens of Leon and Chinandega, the only departments that Sacaza still held, requested him to resign and let the strife be ended by a presidential election, but he refused decidedly. The whole eastern and southern part of the country had risen against the President, and his troops surrendered everywhere without a blow, while he was confined to the northwestern corner. Senators and Deputies in the capital suspected of sympathizing with the rebellion were thrown into prison unless they sought an asylum in the foreign legations and consulates. Ex-President Cardenas found such an asylum after escaping from prison. The troops that remained loyal out of the army of 10,000 still outnumbered the forces raised by the revolutionists; but Zavala,

having behind him the wealthy men, and being able to draw supplies from the principal parts of the country, soon got his men into better physical and moral condition than the spiritless forced levies on whom Sacaza had to depend. The revolutionists organized a Provisional Government, of which Santiago Morales was President, and Zavala, the real head, while Eduardo Montrel was made commander-in-chief. Sacaza withdrew his troops from Leon and other points to the capital and raised a forced loan of \$600,000 to carry on the war. The revolutionists seized the steamboats of the Nicaragua Canal Company on Lake Nicaragua, which enabled them to concentrate at Grenada, whence they advanced upon the capital. To supplement the rifles and cannon captured in the Government forts by Gen. Gutierrez and Col. Malaver, Gatling guns and other arms and ammunition were obtained in New York and introduced through Greytown and the San Juan river. The armies confronted each other near Masaya, where the revolutionists occupied strong strategic positions. They had about 2,000 men, with 2 Krupp cannon, 5 brass field pieces, and some machine guns. The Government had over 3,000 men with 6 Krupp guns. Several unimportant engagements had been fought in which the rebels were successful. President Sacaza made himself more unpopular by treating prisoners cruelly, while his adversaries uniformly acted with humanity. They were unable to arm more than a quarter of the volunteers who presented themselves, and were able thus to select an army of the best material and hold back a reserve equal to the force that was in the field. On May 19 the Government troops attacked the intrenched position of the revolutionists at Barranca. The battle was fought mainly with artillery, and the Krupp guns of the Government, though commanded by an experienced French officer, were badly served, while the rebel battery, well posted on Coyotepe hill, made terrible havoc, though firing only 60 shots to 240 from the other side. Supported by its batteries, the Government column advanced twice toward the position of the enemy, and was twice broken and forced to turn back by the destructive raking fire of the rebel artillery. The object of the Government was to gain possession of Barranca pass, through which the railroad runs and from which roads lead to various parts of the eastern country. The battle was renewed on May 20. After opening with a cannonade, the Government troops, 1,300 strong, advanced courageously in the face of an artillery fire and attempted to storm the rebel position at Barranca pass, but were repelled with heavy loss. Reforming, a detachment, for a diversion, attacked the enemy on the Tisna road, and later another concentrated attack was delivered against the main position of the revolutionists, which met with no better success. By the middle of the afternoon the victory of the revolutionists was complete and the Government forces retreated in disorder, having lost nearly half their number by battle and desertion. There were 155 killed and 267 wounded, while the revolutionists lost only 12 killed and 8 wounded, most of them officers. The Government had 2,500 troops in the battle



and the revolutionists 1,500, but the latter were protected by covered intrenchments.

Lewis Baker, the United States minister, who had previously tried to mediate, persuaded both parties to agree to an armistice and the appointment of peace commissioners. He presided over the commission, which consisted of 3 officers from each side. It met at Sabana Grande, and after consulting for two days, reached an agreement under which Sacaza, on May 30, resigned the presidency in favor of Senator Salvador Machado, who was to serve until a constituent assembly should have been elected, a new constitution adopted, and under it a regular government constituted. The treaty provided that the Provisional President should appoint only one member of his Cabinet, while the revolutionists were entitled to name three, thus insuring them a controlling voice in the council. The Provisional Government was organized and installed in the public buildings in the capital. Both armies were to be paid off and disbanded. The costs of the war incurred on both sides were to be borne by the Government and made a part of the public debt. Before the revolutionary army was disbanded it was allowed to enter Managua in triumph. While the troops, 3,500 strong, were marching past the police station a shot was fired into their ranks, and without orders the soldiers fired back; the police returned the fire, and the fusillade continued until they were overcome and many police, soldiers, and spectators were killed.

The people of Leon were not satisfied with the outcome of the war, which restored the control of national affairs to their old enemies, the Grenadinos. The more eager and determined among them proceeded secretly to enroll and arm volunteers. No overt act was committed till July 12. Acting-President Machado, Gen. Avilez, the commander-in-chief of the forces, and the Minister of Foreign Affairs in the Provisional Government, who were visiting Leon on that day, endeavoring to gain the good will of the malcontents, were made prisoners and placed in confinement. At the same time the military barracks were seized, which were given up without resistance, and five steamers on Lake Managua were taken, to be used in transporting troops. Col. Ortiz, the leader of the revolt, was the military governor of the province. His army numbered about 10,000 well-armed men, while the Government had rifles for not more than 7,000. The rebels captured the port of Corinto, which the Provisional Government declared closed to prevent the customs revenue from being collected by them, also the town of Chinandega, and fortified themselves at Momolombo, on Lake Managua. Ortiz proclaimed himself Provisional President of Nicaragua. The Cabinet decided to give Zavala and Montrel full charge of the Government and extraordinary powers to organize forces and direct operations against the Leon revolutionists. Gen. Avilez succeeded in escaping from prison and took command of the troops of the Provisional Government. A conference of leading men of the republic, which was called at Managua to aid in reorganizing the Government, on July 17 nominated Joaquin Zavala Provisional President with dictatorial powers. He appointed a Cabinet, in which he

retained Anselmo H. Rivas as Minister of State and Frederico Solarzano as Minister of War, making the latter also Minister of the Interior. Santos Zelaya and fifty prominent men in the Liberal party declared in favor of the rebellion and went to Leon to aid in the revolution. Provisional-President Zavala sent proposals of peace to Leon and issued a manifesto promising complete amnesty and security to all persons engaged in the revolt. He left one place in the Cabinet vacant to be given to a citizen of Leon if the rebels should lay down their arms. There came no reply to the peace proposals of Zavala. On July 22 the revolutionists bombarded the village of Mateare, where the Government troops were encamped, on the south side of Lake Managua, near the capital. The fire was returned and two of the steamers were struck by shells from the Krupp guns. Re-enforcements were sent up to Mateare, and Gen. Avilez went to the front to take command. A severe battle was fought in which 5,000 men were said to have been engaged, including 600 Hondurians under Policarpo Bonilla, who fought with the troops from Leon. During the fight a detachment of the Government troops deserted to the enemy. Gen. Zelaya, whose bold and skillful tactics had helped more than anything else to win the battle of Barranca against Sacaza's superior forces, was the victor. The army of Gen. Avilez was driven from its position after a long and stubborn fight and retired upon Managua. The loss of life was heavy on both sides. On July 25 the revolutionists threw 30 shells from their steamers into Managua, killing 5 persons. The Government forces evacuated the capital, retiring to Grenada. Several engagements took place, in all of which the generals of the Provisional Government were outmanœuvred. On July 31 a treaty of peace was signed on terms satisfactory to the Progressists and Liberals alike, but not to the Conservatives. Under it 1,000 of Zavala's men were disarmed at once, and all the troops on both sides were disbanded within a week. The Leon Junta assumed control of the Government. Martial law, which had been in force since April 28, was revoked. A general amnesty was proclaimed. The war expenses of both parties were made a charge upon the Government. Elections for a constituent assembly were fixed for Aug. 27, and the meeting for Sept. 15. Santos Zelaya was proclaimed Provisional President. The voting was very light and the candidates of the Liberal party were elected without opposition. The Constituent Assembly granted to Gen. Zelaya extraordinary powers in dealing with political disturbers, and also power to levy forced loans.

**NORTH CAROLINA**, a Southern State, one of the original thirteen, ratified the Constitution Nov. 21, 1789; area, 52,250 square miles. The population, according to each decennial census, was 393,751 in 1790; 478,103 in 1800; 555,500 in 1810; 638,829 in 1820; 737,987 in 1830; 753,419 in 1840; 869,039 in 1850; 992,622 in 1860; 1,071,361 in 1870; 1,399,750 in 1880; and 1,617,947 in 1890. Capital, Raleigh.

**Government.**—The following were the State officers during the year: Governor, Elias Carr, Democrat; Lieutenant-Governor, Richard A. Doughton; Secretary of State, Octavius Coke;

Treasurer, Samuel McD. Tate; Auditor, Robert M. Furman; Attorney-General, Frank I. Osborne; Superintendent of Public Instruction, John C. Scarborough; Commissioner of Agriculture, John Robinson; Railroad Commissioners, J. W. Wilson, J. W. Mason, and E. C. Bidingfield; Chief Justice of the Supreme Court, James E. Shepherd; Associate Justices, Walter Clark, Alphonso C. Avery, James C. MacRae, and Armistead Burwell.

**Finances.**—The following statement shows the transactions of the treasury for the fiscal year ending Nov. 30, 1893: Balance, Nov. 30, 1892—educational fund, \$28,568.83; public fund, \$310,400.93; total, \$338,969.76. Receipts—educational fund, \$31,087.19; public fund, \$1,181,066.34; total, \$1,212,153.53. Disbursements—educational fund, \$26,909.77; public fund, \$1,284,024.41; total, \$1,310,934.18. Balance, Nov. 30, 1893, \$240,189.11.

**Valuations.**—The assessed valuation of property in the State for 1893 was as follows: Land, \$114,328,255; town property, \$40,755,459; personal property, \$82,410,049; railroad property, \$23,654,345; Pullman cars, \$82,568; telegraph property, \$193,352; steamboat and canal property, \$293,698; total, \$261,717,726.

**Legislative Session.**—The regular biennial session of the General Assembly met on Jan. 4 and adjourned on March 6. A new revenue law and a new law regulating assessment of property and collection of taxes were enacted. The revenue law fixes the poll tax at \$1.24 on each taxable poll, and provides that the proceeds shall be devoted to education and support of the poor. The *ad valorem* tax is fixed at 22 cents on each \$100 for State purposes, 3½ cents for Confederate pensions, and 16 cents for public schools. License and privilege taxes are imposed on a great variety of occupations and business enterprises. An elaborate law establishing and regulating State banks was adopted, to take effect as soon as Congress shall repeal the tax on State bank notes. The time within which holders of State bonds may comply with the law for readjusting the State debt was extended to Jan. 1, 1895. The laws governing the State Prison were superseded by a new enactment, which provides for a board of directors and a superintendent to be appointed by the Governor, with the advice and consent of the Senate. The superintendent shall, with the consent and approval of the board, appoint all subordinate officials. He shall employ all convicts within the prison wall, or on farms leased or owned by the institution, and shall make contracts on remunerative terms with persons or corporations, in order to employ and support as many of the able-bodied convicts on public works as the interests of the State will permit. He may, with the consent of the Governor and by order of the board of directors, erect additional shops at the prison, and lease and equip farms whenever it becomes necessary to keep the convicts employed.

A salutary law for the protection of accused persons from mob violence provides that "every person who shall conspire to break or enter any jail, or other place of confinement of prisoners charged with crime or under sentence, for the purpose of killing or otherwise injuring any prisoner therein confined, and every person who

engages in such breaking or entering with intent to kill or injure any prisoner, shall be guilty of a felony," and shall be fined not less than \$500, and imprisoned not less than two nor more than fifteen years. It is made the duty of any prosecuting officer in the State who hears of the commission of such a crime to investigate the circumstances and bring criminal proceedings against the guilty persons. The superior court of any county adjoining that in which the offense is committed shall have jurisdiction of the case.

A State board of health was established. The Governor was requested to set apart in the autumn of each year a day to be known as Arbor Day, and to recommend its observance.

The sum of \$35,000 for each of the years 1893 and 1894 was appropriated for the support, completion, and improvement of the School for the Deaf and Dumb, and the sum of \$5,000 for each of these years for completing and furnishing the building for the Agricultural College.

Other acts of the session were as follow:

Making it a misdemeanor for any person to leave any child or children confined in any building and unattended, so as to expose such child or children to danger by fire.

Directing the removal of the Colored Normal School from Warrenton to Franklinton.

Dividing the crime of murder into two degrees.

Authorizing the State Railroad Commission to provide rules and regulations for the handling of baggage.

Authorizing the Railroad Commission to assess steamboat property.

Establishing the words "Esse quam videri" as the State motto.

Repealing the act of 1891 requiring railroads to redeem unused tickets.

To establish a true meridian in the several counties for the correct retracing of surveys.

Amending the insurance law.

Authorizing the acceptance of surety companies as sureties on official bonds.

Authorizing disabled ex-Confederate soldiers to peddle without a license.

Providing a new law for the government of the State militia.

Establishing a naval battalion to be attached to the State militia.

To prevent fraudulent assignments by debtors.

To provide for the revocation of interests limited to persons not in being.

To prohibit the sale of deadly weapons to minors.

**Railroads.**—Since Dec. 31, 1891, 165 miles of new road have been completed and put in operation in the State. Of this total, 114,270 miles were completed in 1892, and 51 miles this year, before the end of the fiscal year. Several roads have heretofore, by reason of the provisions of their charters, enjoyed either partial or entire exemption from taxation, and this fact has been a source of continued dissatisfaction and strife. Recently the Raleigh and Gaston Railroad was induced to surrender its chartered rights to exemption from taxation. Subsequently the Wilmington and Weldon Railroad surrendered its claims to exemption both from taxation and from the regulation of its tariff rates by the railroad commission. Finally the only remaining exempted road, the North Carolina, through the efforts of the Governor, has very lately surrendered its rights without a contest, and will be subject to taxation in 1894.



**James City Dispute.**—On April 24 Gov. Carr issued orders to the Adjutant-General directing that the State militia be dispatched to James City for the purpose of aiding the local authori-



THE NEW SEAL OF NORTH CAROLINA.

ties in enforcing obedience to the courts of law. This place is on Trent river, opposite New Berne, and is inhabited by a large negro population. It was settled in 1863 by negro families, who were removed thither from New Berne by "General" James. They erected rude cabins and made themselves thoroughly at home, believing they had been given the land by the United States Government. Other negroes soon entered the place, and before many days had passed a large settlement had gathered—all believing the Government had given to them the land. But "General" James was no general, and had no authority to give away the land.

The negroes named the village, after their benefactor, James City. They drew up a system of government, and elected aldermen and policemen, and the population increased rapidly.

About ten years ago James A. Bryan undertook to regain the land. James City fought the case through several courts, and finally the Supreme Court decided, beyond all dispute, that the land on which James City is built is the legal property of Mr. Bryan. Thereupon Mr. Bryan endeavored to come to an amicable settlement with his tenants, but without success.

Finally the sheriff and *posse* went from New Berne to James City to evict the negroes, but people gathered from all quarters, and a mob of more than a thousand negroes prevented the officers from acting. As the negroes firmly declared their intention of resisting eviction, there was no course left but to call in the militia. Gov. Carr accompanied the troops, and on April 25 held several conferences with the negroes and Mr. Bryan, which resulted in an amicable adjustment, the negroes agreeing to sign leases for three years, paying rent at 50 cents to one dollar a month.

**The Waldensians.**—In the spring of this year a small colony of these people, from Eu-

rope, settled in Burke County, at a place called by them Waldese.

**State Seal.**—This year the Legislature adopted a State motto, and provided that it should be a part of the State and of the coat of arms. The seal in its new form is presented in the accompanying illustration.

**Industrial.**—There are one or more cotton mills in each of 43 counties, and a total of 140 in the State, besides several in construction. In these mills are nearly 10,000 looms and over 500,000 spindles, consuming last year 165,200 bales of cotton. In addition there are 13 woolen mills, 57 factories that make carriages and buggies, 32 that make wagons, 25 that make furniture, 6 that make hubs and spokes, and 24 that make sash, doors, and blinds. There are 28 canning factories for vegetables and 14 for oysters, 14 cotton-seed oil factories, 54 fertilizing factories, and several that make barrels and crates and baskets and brooms.

The tobacco factories exceed in number and capital those of any State in the Union. There are 110 producing plug tobacco and 9 producing smoking tobacco. Durham alone sold 11,000,000 pounds of tobacco last year, and paid to the Government for stamps \$616,129; Winston paid more, and Asheville sold over 5,000,000 pounds of leaf tobacco.

**NORTH DAKOTA,** a Northwestern State, admitted to the Union Nov. 3, 1889; area, 70,795 square miles; population, according to the census of 1890, 182,719. Capital, Bismarck.

**Government.**—The following were the State officers during the year: Governor, Eli C. D. Shortridge, Independent; Lieutenant-Governor, Elmer D. Wallace; Secretary of State, C. M. Dahl; Treasurer, Knud J. Nomland; Auditor, Arthur W. Porter; Attorney-General, William H. Standish; Commissioner of Agriculture and Labor, Nelson Williams; Commissioner of Insurance, James Cudhie; Superintendent of Public Instruction, Laura J. Eisenhuth; Railroad Commissioners, Peter Cameron, Nils P. Rasmussen, Benjamin B. Stevens; Chief Justice of the Supreme Court, Guy C. H. Corliss; Associate Justices, Alfred Wallin, J. M. Bartholemew.

**Valuations.**—The total assessed valuation of property for 1893 as equalized by the State board was \$90,105,280, of which the valuation of personalty was about \$23,000,000. Included in the assessment were 176,490 horses, 6,738 mules, 280,731 cattle, and 44,902 swine. The tax rate for 1893 was 4 mills on the dollar for State purposes and  $\frac{1}{2}$  mill for interest on the public debt.

**Legislative Session.**—The regular biennial session of the Legislature began on Jan. 3 and ended on March 3. The choice of a successor to United States Senator Lyman R. Casey was one of the duties of the session. On the first joint ballot, Jan. 18, the following vote was cast: For William N. Roach, Democrat, 23; Walter Muir, Independent, 17; J. H. Worst, Republican, 13; Lyman R. Casey, 11; Richard T. Kingman, Republican, 7; W. J. Anderson, Republican, 9; James R. Smith, Republican, 8; scattering, 4. Although the Republicans had a majority in joint convention, they were hopelessly divided, and as a result 61 ballots were taken before a choice was made. Several times during the balloting the Democrats and Independents united



in supporting John D. Benton, Democrat. On Jan. 26, pursuant to a call signed by 37 members, the first Republican caucus was held, which resulted in the nomination of Senator Casey on the third ballot. On the same day 14 Republicans who had not signed the call held their own caucus, but adopted no definite line of action. On the twenty-eighth ballot, Jan. 27, Casey received 37 votes. He continued to receive the full vote of the caucus for several days, but as the remaining Republicans refused to yield to the will of the majority, he released his supporters from their obligations and abandoned the contest. On the condition of his withdrawal, substantially all the Republican members had been induced to come into a new Republican caucus, but the same hopeless differences appeared as before. After holding several sessions, and after 72 ballots had been taken without result, the attempt to make a party nomination was abandoned. Balloting then continued day after day in the joint session of the Legislature without result until Feb. 20, when, on the sixty-first ballot, 10 Republicans deserted their party and united with the Democrats and Independents in electing W. N. Roach, Democrat. The latter received 50 votes on this ballot, Casey 23, John Miller 16, scattering 3.

The legislative results of the session include several measures affecting railroads. One of these fixes the maximum freight rates for transportation of coal between points within the State. Another requires intersecting railroads to construct and maintain tracks for transfer of cars and traffic from one line to the other. For the purpose of constructing a State elevator at Duluth or Superior, \$100,000 was appropriated, to be expended under the direction of a board of commissioners. Only North Dakota wheat shall be handled by this elevator, and the charges for service shall be fixed by the commissioners.

An act establishing courts of conciliation provides for the election biennially in each town or city of 4 commissioners of conciliation. It is also provided that at the time of issuing the summons in any civil action begun before a justice of the peace, the justice shall issue a subpoena summoning 2 of the commissioners of conciliation elected for the town, village, or city where the action is brought, to appear before him. If both parties appear they shall go before the justice and the 2 commissioners summoned, as aforesaid, and state their differences, which statements shall be reduced to writing by the justice and entered on his docket and shall constitute the pleadings in the case. After hearing and considering all the evidence offered, it shall be the duty of the justice and commissioners to the best of their abilities to persuade the parties to agree to an amicable settlement. If the parties are not able to agree to an amicable settlement, the case shall be adjourned for trial by the ordinary method.

The law providing for the disposal of the State school lands was amended and revised, and the Australian ballot law was perfected in matters of detail. The legal rate of interest was fixed at 7 per cent., and any rate greater than 12 per cent. was declared to be usury.

Provision was made for the appointment of a commission to revise and codify the State laws. Cities were authorized to levy an annual poll tax of \$1.50.

For the purpose of constructing a south wing to the State Capitol the sum of \$50,000 was appropriated, to be obtained by the issue of 4 per cent. State bonds. The sum of \$15,000 was appropriated in aid of the State exhibit at the World's Columbian Exposition, and an appropriation of \$55,000 was made for the erection of a dormitory and other buildings at the Agricultural College.

The constitutional amendment prohibiting lotteries, which was passed by the Legislature of 1891, was approved at this session and is now ready for submission to the people. Other acts of the session were as follow:

Providing for the levy of a county tax, of not less than one mill on the dollar, for improving county highways.

Authorizing the refunding of outstanding city bonds and warrants.

Requiring every deputy, clerk, or subordinate to any State, county, or municipal officer to be a resident of the State and a citizen of the United States; or if an alien, to have declared his intention to become naturalized.

To provide for better enforcement of the laws punishing cruelty to animals.

Fixing June 30 as the end of the fiscal year.

Regulating the manner of transferring corporate interests in real estate.

Establishing an experiment station for irrigation.

Providing for the location of the State School of Forestry.

Constituting the superintendent of irrigation and forestry the fish and game commissioner, and providing for stocking and maintaining fish hatcheries, and for the protection of fish in North Dakota streams.

To prevent the spread of contagious diseases among domestic animals.

Revising the law regulating the descent of estates.

To provide for the collection of vital statistics.

Establishing a weather and crop service for the collection and dissemination of crop statistics and meteorological data.

**Railroads.**—On June 30, 1893, the total railroad mileage operated in the State was 2,223 miles, a gain of 99 miles during the year preceding. The number of railroad employees within the State was 3,586. The capacity of the various grain elevators and warehouses operated along the lines of these railroads on June 30, 1893, was as follows: On the Northern Pacific and branches, 5,948,000 bushels; on lines of the Great Northern, 12,081,000 bushels; on lines of the Minneapolis, St. Paul and Sault Ste. Marie, 377,000 bushels; on line of the Chicago, Minneapolis and St. Paul, 579,000 bushels; and on line of the Chicago and Northwestern, 110,000 bushels; making a total elevator and warehouse capacity within the State of 89,511,000 bushels, an increase of 976,000 bushels in 1892-'93.

**Limitations of the Governor's Authority.**—Near the close of the legislative session of this year Gov. Shortridge sent to the Senate the names of certain persons nominated by him as trustees of the Penitentiary and as trustees of the Agricultural College at Fargo. These nominations the Senate refused to confirm, whereupon, after the close of the session, the Governor nominated anew the same persons and issued commissions to them. To these new appointees the acting trustees of these institutions refused to surrender their offices, claiming that their successors could only be qualified by the con-



current action of the Governor and the Senate. This legal point was brought before the State Supreme Court for decision in May, in a case involving the rights of the Penitentiary board. It was then decided that the Governor could appoint only with the concurrence of the Senate, and that the former Penitentiary trustees could hold over until their successors were qualified according to the Constitution. Shortly after this decision the Governor notified the Agricultural College trustees that they were suspended pending an investigation into the affairs of their office. The State examiner was placed in charge, and as a result of the inquiry, the Governor, on Sept. 7, dismissed the board from office, on the alleged ground of misconduct and incompetency, and appointed a new board. The old board questioned the power of the Governor to remove them, and the Supreme Court was again appealed to. In November this court again thwarted the efforts of the Governor by deciding that he had no power to remove the board.

**The Prohibitory Law.**—In May the State Supreme Court rendered a decision in the case of *State vs. Barnes*, upholding the legality of the prohibitory law.

**NORTHWEST TERRITORIES.** The Government of the Northwest Territories—comprising the provinces of Assiniboia, Alberta, Saskatchewan, and Athabasca (see map in "Annual Cyclopædia" for 1891, page 480)—though administered by a lieutenant-governor and a legislative assembly, is more immediately under the control of the Dominion Government than that of the other provinces. The capital is Regina. The Government of this region, with an area of 431,000 square miles and a scattered population of about 110,000, is under the supervision of the Department of the Interior at Ottawa.

The term of Hon. Joseph Royal, appointed Lieutenant-Governor in 1888, expired in July, 1893, and he was succeeded in that office on Nov. 1 by Hon. Charles Herbert Mackintosh, member of Parliament for the city of Ottawa. Lieut.-Gov. Mackintosh has been long identified with journalism in Canada, and since 1874 has been chief editor of the Ottawa "Daily Citizen." He first entered the Parliament of Canada in 1882.

**Legislative Assembly.**—The third session of the second Legislative Assembly opened on Dec. 7 and closed on Dec. 31, 1892. The following were elected as Executive Committee: Messrs. F. W. G. Haultain, J. R. Neff, T. Tweed, and Hillyard Mitchell. The functions of this executive committee are to advise the Lieutenant-Governor in the expenditure of funds.

The legislation of the session comprised 38 ordinances, the most important being those respecting education. In this department important changes were effected, the principal being the substitution of a Council of Public Instruction, composed of the members of the Executive Committee and 4 appointed members, 2 Protestants and 2 Roman Catholics, in place of the former board of education. During 1892 there were 249 schools in operation, with 295 teachers and 6,170 pupils, an increase of 27 schools, 28 teachers, and 718 pupils compared with the returns for the year before. Fifty-three new schools were opened last year.

**Products.**—The raising of live stock is one of the most important industries of the Territories. The grazing lands are principally in the Province of Alberta and in the southern portion of Assiniboia. The numbers of the various kinds of live stock in those districts in 1892 were: Cattle, 139,283; horses, 20,579; sheep, 80,087. The total of live stock in the Territories in 1893 was estimated at 314,949 head. The number of grazing leases in force in the Territories in 1892 was 142, covering an area of 1,801,209 acres.

The total catch of fish last year in the Territories was estimated at 19,836,800 pounds, valued at \$793,549. Whitefish and pike are the staple fish, of the former of which a catch of 11,435,000 pounds was returned, and of the latter 8,000,000 pounds. The Indians, especially in the north Saskatchewan district, live on fish.

The sawmill returns gave the following quantities of building material as having been manufactured and sold in 1892 in the 5 agencies of Manitoba, Assiniboia, Alberta, Saskatchewan, and British Columbia: Sawed lumber, 40,672,928 feet manufactured, 43,527,156 feet sold; shingles, 6,546,000 manufactured, 7,018,500 sold; laths, 1,195,150 manufactured, 1,535,190 sold. No account is taken of the cut of logs, large quantities of which are exported.

Last spring the President of the Canadian Pacific Railway, in his reply to the address of the Legislature of the Northwest Territories complaining of the ruinous freight rates on wheat and coal, declared that the railway company suffered an actual loss in transporting wheat from that country.

During 1892 the following railway lines were completed: Calgary and Edmonton, High River to Macleod, and the Canadian Pacific Railway Souris Branch road from Oxbow to Estevan.

**Surveys.**—Much work was done during 1893 in connection with topographical surveys and explorations in the Northwest. Some time ago R. G. McConnell was sent by the Canadian Government on an exploring expedition to the Mackenzie river district. In October, 1893, he returned to Vancouver and reported that he had discovered the source of Mackenzie river to be a lake at the head of Findley river; and that gold was found in paying quantities for 250 miles along the course of the latter stream.

**Mormons.**—Of the various colonies established in the Northwest, the most interesting as well as the most prosperous is the Mormon settlement at Lee's Creek, Alberta. It numbers now about 1,000 persons, and the abandonment of the special tenet of their faith (polygamy) has left them without any very distinguishing feature. They are singularly economical, ingenious, and progressive, and, as a result of their industry and intelligent operations, are in a very prosperous condition.

**NOVA SCOTIA**, an eastern province of the Dominion of Canada; area, 20,907 square miles; population in 1891, 450,523. Capital, Halifax.

**Legislation.**—The third session of the thirtieth General Assembly of the Province of Nova Scotia was opened by Lieut.-Gov. Daly on Jan. 19, 1893, and closed on April 28. In his opening address he said:

I desire to avail myself of your advice in a matter of immediate importance, and therefore have summoned you to meet at an earlier date than usual. While the present condition of business throughout the province is not satisfactory, there are indications to justify the expectation of an early improvement. One of the most important items in the revenue—that of receipts from mines and minerals—fell considerably short of the estimates last year, partly on account of diminished mining operations, and partly owing to the large quantity of coal which came under the enactment exempting current contracts from the increased royalty. During the past year, for the first time since the union of the provinces, an issue of Nova Scotia Government debentures was offered in the London money market. It is gratifying to know that these securities were promptly taken up, and the credit of the province fully established in England. I have learned with pleasure of the recent completion of the new railway from Eureka to Sunny Brae, built under contract with my Government, and of the opening, in connection therewith, at the new village of Ferona, of extensive works for the development of the iron deposits of Pictou County.

I have much gratification in informing you that, encouraged by the provisions of the Mines and Mineral act of last session, capitalists have come forward to undertake extensive coal-mining operations. I invite your most careful consideration to a bill which will be submitted to you to confirm the arrangements which my Government has made with the parties who have undertaken this very important work.

Chief among the measures of the session was one for further encouragement of coal mining in the province. Since the passing of that act there has been a marked improvement in this industry, and the railway to Louisburg, soon to be completed, will lead to extensive coal mining in Cape Breton. Several measures were passed relating to the railways between Halifax and Yarmouth, which will probably lead to an early settlement of the claims of the province and several municipalities against one of the roads, and to the consolidation of the whole line. An act was also passed changing the fiscal year. It now begins on Oct. 1 and ends on Sept. 30, so that reports for 1893 of the various departments of the Government will only be for nine months. An act passed for the collection of debts will afford a more simple and inexpensive method of collection. Altogether 211 bills were passed during the session, the ones of most public importance, in addition to those already mentioned, being the following:

- To incorporate the Provincial Manganese Company.
- For the incorporation of Congregational churches.
- To incorporate the Coast Railway Company.
- Several acts to incorporate coal and iron companies.
- To incorporate the Nova Scotia Timber Company.
- To incorporate the Acadia Land Company.
- To incorporate the Atlantic and Inland Railway Company.

**Finances.**—The expenditure of the province for the year ending Dec. 31, 1892, amounted to \$822,461.82; the revenue to \$769,975.42; liabilities, \$3,138,751.50; assets, \$1,506,619.07; and the net debt to \$1,632,142.43.

**Assessed Values.**—The assessed value of real estate, personal property, and income for the cities and towns of the province for last year was \$40,495,175, and for the municipalities \$43,534,476. The assessed values are usually on a basis of half the actual value.

**Education.**—The number of schools in operation in the province last year was 2,281; number

of pupils enrolled, 102,586; teachers employed, 2,340, including 1,691 women. The average salary for male teachers of the first class was \$488.95; for female teachers, \$295.77. The expenditure by the Provincial Government for public education last year was \$216,429.73, and local expenditure \$530,145.12.

**Minerals.**—The product of the principal minerals of the province for 1892, compared with 1891, was as follows:

PRODUCTS.	1892.	1891.
Gold, oz. ....	19,998	23,391
Iron ore, tons . . . . .	75,000	57,311
Coal raised, tons. ....	1,942,780	2,044,784
Coke made, tons . . . . .	55,000	34,184
Gypsum, tons . . . . .	162,285	161,934
Copper ore, tons . . . . .	26	900

The sale of coal for 1892 amounted to 1,752,934 tons, of which 623,978 tons were home sales, 746,037 tons sold to the Province of Quebec, and 13,883 tons to the United States. The revenue derived by the province last year from royalty on minerals and fees in connection therewith was about \$171,000.

**Insane.**—The number of patients admitted to the Nova Scotia Hospital for the insane during last year was: Females, 57; males, 44. And the total of all patients in the hospital for the year was: Females, 170; males, 184. During the year 42 patients were discharged as cured.

**Fisheries.**—The fishing industry is the most valuable of the province, the product for 1892 being estimated at \$6,340,724, and for 1891 at \$7,011,300. The decrease in the product for 1892, compared with the preceding year, was largely made up by the shortage in the mackerel fishing, which had fallen off over \$700,000 from the value of the catch for the year before. The catch of lobsters also fell short of that of the previous year by over \$150,000; but cod, haddock, pollack, and hake fisheries showed an improvement. The following is the value of the principal products of the fisheries for last year: Salmon, \$86,368; mackerel, \$694,416; herring, \$705,784; cod, \$2,526,406; haddock, \$494,957; hake, \$184,573; pollack, \$174,045; halibut, \$156,055; lobsters, \$945,273; fish oil, \$90,078.

**Railways.**—The gross earnings of the railways of the province for which returns were received last year were: Windsor and Annapolis Railway, \$316,687; Western Counties, \$104,643; Cumberland Coal and Railway Company, \$61,203; International, Cape Breton, \$23,463; Maclean & Joggins, \$20,217; Nova Scotia Central, \$43,256. The number of miles of railway open in the Province last year was 362, an increase of 14 over the mileage of the year before. This enumeration is limited to provincial railways. Altogether there are about 560 miles of railway in the province.

The work of constructing a new railway, to be known as the Stewiacke Valley and Lansdowne, was recently begun, the province granting a subsidy of \$3,200 per mile.

**Manufactures.**—The following are close approximations of the manufactures of the province for 1893: Number of establishments, 10,873; capital invested, \$20,907,614; number of employees, 37,065; wages paid, \$7,550,092; value of products, \$32,577,354.



## O

**OBITUARIES, AMERICAN, for 1893.**

**Allen, William Henry Harrison**, jurist, born in Winhall, Bennington County, Vt., Dec. 10, 1829; died in New York city, April 26, 1893. He was graduated at Dartmouth College in 1851, and was admitted to the bar of Sullivan County, N. H., in 1858. From November of that year till September, 1863, he held clerkships in various county courts, and then till December, 1865, he was a paymaster in the Union army. He was judge of probate from 1867 till 1874, and register of bankruptcy from 1867 till 1876. In the latter year, by general request of the Sullivan County bar, he was appointed Associate Justice of the Supreme Court of New Hampshire, an office he retained till within a short time of his death.

**Ames, Frederick Lothrop**, capitalist, born in North Easton, Mass., June 8, 1835; died on a Fall River steamer on Long Island Sound, Sept. 12-13, 1893. He was a son of Oliver and Sarah Lothrop Ames, and cousin of Oliver Ames, Governor of Massachusetts in 1886-'88. He prepared for college at Phillips Exeter Academy, and was graduated at Harvard in 1854. Though anxious to study law, he yielded to the wishes of his father, and entered on a business career in the Ames manufactory in North Easton. In 1863 he became a member of the firm, the name of which was changed in 1876 from Oliver Ames & Sons to Oliver Ames & Sons Corporation, of which he was made treasurer. Besides his interest in this corporation, Mr. Ames acquired large holdings of stock in about 75 railroad companies, and was an active director in numerous other financial and manufacturing corporations. Mr. Ames was considered the wealthiest man in Massachusetts. He inherited \$5,000,000 or \$6,000,000 from his father; owned real estate in Boston assessed in 1892 at \$6,100,700; and was credited by the "street" with possessing an estate estimated at from \$25,000,000 to \$50,000,000. To Harvard University and to various institutions in Boston and North Easton, Mass., he had been a liberal benefactor for many years, always giving without ostentation. After his death it was reported that the donor of \$500,000 to Harvard for building, equipping, and maintaining a reading room was Mr. Ames, and that the necessary legal papers were awaiting his signature at the time of his death.

**Armstrong, David Hartley**, legislator, born in Nova Scotia, Oct. 21, 1812; died in St. Louis, Mo., March 18, 1893. He received an academic education in Readfield, Me.; taught school for eighteen years; and, removing to St. Louis in 1837, opened and conducted in the following year the first public school established by law in Missouri. In 1847 he was appointed comptroller of the city as a Democrat; in 1848 and 1849 was reappointed; in 1854 was appointed by President Pierce postmaster of St. Louis; and from October, 1877, till March 3, 1879, filled the vacancy in the United States Senate caused by the death of Lewis V. Bogy. During the civil war he was imprisoned for sympathy with the Confederacy. Subsequently he aided B. Gratz Brown and other Democrats in organizing the Liberal party. He was also at one time receiver of the Missouri Pacific Railroad.

**Armstrong, Samuel Chapman**, educator, born in Wailuku, Maui, Hawaii, Jan. 30, 1839; died in Hampton, Va., May 11, 1893. He was the son of Richard Armstrong, one of the first American missionaries to the Sandwich Islands, and the founder of the educational system of the kingdom. He was educated in local schools and in Oahu College, Honolulu, till 1860, when, on the death of his father, he came to the United States and entered Williams College, where he was graduated in 1862. Immediately after leaving college he organized Company D, of the 125th

New York Infantry, with which he was assigned to the Army of the Potomac. At Harper's Ferry he was taken prisoner, and held three months. He then served to the close of the war, and was mustered out of the volunteer service with the rank of brigadier-general in November, 1865. He was one of the first officers to volunteer and qualify for command of colored troops, and the last two years of his service were spent with them, his last active commission being that of colonel of the 8th United States Colored Infantry. His service with the colored troops and the deep interest he took in them attracted the attention of Gen. O. O. Howard, who, in March, 1866, induced him to enter the employment of the Freedman's Bureau. He was at first charged with the oversight of all the colored people in 10 counties in Virginia, and made his headquarters at Hampton, where a large number of refugees had gathered. After two years of skillful and fruitful administration there, during which he elaborated a progressive scheme for the education of the poor colored people, he secured the aid of the American Missionary Association and of personal friends at the North, and established the school that subsequently became the Hampton Normal and Agricultural Institute. As its name suggests, the institution was designed to afford education, make teachers, and render graduates self-supporting. In this cause he labored till death. For the first ten years the beneficiaries were exclusively negroes. Then the United States Government, noting his remarkable success, arranged to have Indian children taught there also, and since 1878 the two races have studied and worked side by side without friction. At the time of Gen. Armstrong's death the institution had nearly 200 Indian and between 500 and 600 colored youth, and about 100 teachers and employees.

**Ashcroft, Edward H.**, inventor, born in Whitehouse, near Belfast, Ireland, March 19, 1819; died in Lynn, Mass., Aug. 11, 1893. He came to the United States with his parents in 1832, and for many years assisted his father in the manufacture of silk handkerchiefs. Subsequently he became proficient in color mixing, designing on wood, and wood engraving, and in the Harrison presidential campaign manufactured the "Tippecanoe and Tyler too" handkerchief. In 1849 he fitted out the first large sailing vessel with supplies for California; in 1850 was offered and declined the presidency of the first life-insurance company organized in the United States; and in 1851-'81 was engaged in manufacturing the Ashcroft fusible plug for use in steam boilers and the Ashcroft steam gauge, both his own inventions.

**Auchmuty, Richard Tylden**, philanthropist, born in New York city, in 1831; died in Lenox, Mass., July 18, 1893. He received a collegiate education; studied architecture, and was for many years in partnership with James Renwick; served with the Union army in the field from the beginning of the civil war till 1864, and was then employed in the War Department in Washington till the close of the war. He retired from business after the war, and with his wife applied himself to the development of Lenox as a model summer and autumn resort, and to works of benevolence. In 1881 long and thoughtful investigations culminated in the establishment by himself and wife of the New York Trade Schools, at First Avenue and 67th Street, on a plan entirely original, and already productive of large results. He desired to afford young men instruction in certain trades, and to enable young men already in them to further improve themselves, and planned his system for manual and scientific teaching so that not only can skill be acquired quickly, but the reason why work should be done in a certain way is made plain. The branches



taught are bricklaying, plastering, plumbing, carpentry, house and sign painting, fresco painting, stone cutting, blacksmithing and tailoring. To the establishment and support of this institution he and his wife gave largely from their private means. The average annual attendance, exclusive of the students of architecture of Columbia College, is about 525. In 1889 the institution was incorporated, and Mr. and Mrs. Auchmuty added \$160,000 to their previous gifts, and in April, 1892, J. Pierpont Morgan endowed it with a gift of \$500,000.

**Avery, George Whitesfield**, physician, born in Hampton, Conn., Sept. 27, 1836; died in Hartford, Conn., Feb. 23, 1893. He was graduated at the Yale Medical School in 1861, and on the outbreak of the civil war was appointed assistant surgeon of the 9th Connecticut Volunteers. After a short hospital service at Ship Island he was ordered to duty in New Orleans, under Gen. Butler, who placed him in charge of the St. James Hospital, and afterward of the Marine Hospital. He greatly aided Gen. Butler in effecting sanitary reforms in the city; was surgeon of the New Orleans Volunteers in 1864-'66; served a year as sheriff after the war; and remained in the city, engaging in private practice and rendering important services through the epidemics of cholera and yellow fever, till 1871, when he removed to Hartford. For many years before his death he was physician at the American Asylum for the Deaf and Dumb.

**Barrymore, Georgiana Drew**, actress, born in Philadelphia, Pa., in 1856; died in Santa Barbara, Cal., July 2, 1893. She was a daughter of Mr. and Mrs. John Drew, and sister of John and Sydney Drew, all well-known actors. She made her first appearance on the stage at the Arch Street Theater, Philadelphia, then under her mother's management, in 1872, in "The Ladies' Battle," and remained in her mother's stock company for several years. In 1876 she was married to Maurice Barrymore, the actor. During her theatrical career she supported Edwin Booth, Lawrence Barrett, John McCullough, Mme. Modjeska, her brother John, and her husband, and won popularity in "Pique," "Diplomacy," "The Wages of Sin," "Moths," "L'Abbé Constantine," "The Senator," "Mr. Wilkinson's Widows," and her last appearance in New York city, in 1892, in "Settled out of Court."

**Bartlett, Joseph Jackson**, military officer, born in Binghamton, N. Y., Nov. 4, 1834; died in Baltimore, Md., Jan. 14, 1893. He received an academic education, studied law in Utica, was admitted to the bar in Syracuse, and began practicing in Binghamton in 1858. In May, 1861, he entered the Union army as major of the 27th New York Volunteers; in September following was promoted colonel; and in October, 1862, was commissioned brigadier-general. He took part in the first battle of Bull Run; commanded his brigade in the 1st division of the old 6th Corps on the Peninsula, at Crampton's Pass, Antietam, Fredericksburg, Chancellorsville, Gettysburg, and Mine Run; was placed in charge of the "veteran brigade of Griffin's division of the new 5th Corps in 1864; held the right of the Union line at Bethesda Church on June 2, 1864; was in the assault on Petersburg on June 18 following; and at the surrender of Gen. Lee held the rank of major-general. Under President Johnson he held the office of United States minister to Sweden, and in President Cleveland's first administration he was Deputy Commissioner of Pensions.

**Bartlett, William Holms Chambers**, mathematician, born in Lancaster, Pa., in September, 1804; died in Yonkers, N. Y., on Feb. 11, 1893. He accompanied his parents to St. Louis, Mo., whither they removed shortly after his birth, and there he received his early education. Through the influence of Thomas H. Benton he received an appointment to the United States Military Academy at West Point, where he was graduated in 1826, standing first in his class, which rank he had held during the four years of his course; also he was one of the few who passed through that institution without having received a

demerit. His roommates at West Point were Leonidas Polk and Albert S. Johnston. During 1824-'26—his last two years as a student—he was Acting Assistant Professor of Mathematics, and after graduation he remained at the academy until 1829, partly in that capacity and partly as Assistant Professor of Engineering. For a time during 1828 he was engaged in the construction of Fortress Monroe, Va., and during 1829-'32 he was similarly occupied at Fort Adams, Newport, R. I. He then served as assistant to the chief of engineers in Washington, D. C., whence, in 1834, he returned to West Point, becoming Acting Professor of Natural and Experimental Philosophy. In 1836 he secured an appointment from President Jackson to the full possession of the chair, and thenceforth he continued at the academy until 1871, when he was retired with the rank of colonel. Selecting Yonkers, N. Y., as his place of residence, he accepted an appointment as actuary to the Mutual Life Insurance Company

of New York city, which place he then held for twenty-two years, during which time he prepared various tables in order to facilitate their office work, and an elaborate report showing the working of that corporation for thirty-one years. In 1840 he was sent abroad to examine the European observatories, with a view of improving the course of instruction at West Point. On his return he submitted a report which suggested a plan for an observatory in Washington, D. C. Of his other work, there is worthy of mention a paper on the "Expansibility of Coping Stones," contributed to the "American Journal of Science" in 1832, and a paper on "Strains on Rifle Guns," contributed in 1865 to the "Memoirs of the National Academy of Sciences." His text-books, originally written for the students at West Point, were very successful, passing through several editions. They included "Treatise on Optics" (New York, 1839); "Synthetical Mechanics" (1850); "Analytical Mechanics" (1853); "Spherical Astronomy" (1855); and "Acoustics and Optics" (1859). The degree of A. M. was conferred on him by the College of New Jersey in 1837, and that of LL. D. by Geneva (now Hobart) College in 1847. He was a member of the American Philosophical Society, the American Academy of Arts and Sciences, and in 1863 was one of the original incorporators of the National Academy of Sciences named by act of Congress.

**Battin, Joseph**, civil engineer, born near Philadelphia, Pa., in 1807; died in New York city, Aug. 29, 1893. He was educated for a civil and mechanical engineer; was the first man to demonstrate the practicability of carrying water from Lake Erie, through a tunnel, to supply Buffalo, on the system now used in Chicago; built the Albany, N. Y., gas works in 1844, and subsequently gas works at Washington, D. C., Syracuse, N. Y., and Paterson, N. J., gas and water works at Charleston, S. C., Scranton, Pa., and Elizabeth, N. J., and the water works at Rochester and Buffalo, N. Y., and invented the coal breaker and a steam road carriage. He acquired a large fortune, and in 1874 settled in Elizabeth, N. J., to manage the water works, which he practically owned. He gave the city a building for a high school that cost \$240,000; the Elizabeth Hospital, \$5,000; and various sums to a number of local charities. In 1890 he became interested in the faith-cure movement, and began giving so liberally to its promoters that the aid of the courts was invoked by his family to prevent the dissipation of his property.





**Beale, Edward Fitzgerald**, military and naval officer, born in Washington, D. C., Feb. 4, 1822; died there, April 22, 1893. He was graduated at the United States Naval Academy in 1842, and at the beginning of the Mexican War was ordered to duty in California under Commodore Robert F. Stockton. On Dec. 7, 1846, he distinguished himself by charging through a body of Mexican soldiers at San Pasquale and San Bernardino and carrying intelligence to San Diego of the perilous situation of the American army under Gen. Kearney, for which gallantry he was presented by his brother officers with a sword inscribed with the story of his act, and in February following was selected by Commodore Stockton as bearer of official dispatches to Washington. After the war he resigned his naval commission and was appointed Superintendent of Indian Affairs for California and New Mexico. He is credited with having brought the first specimens of gold from California to the East, and with having made the report which first led to the gold fever. He was commissioned a brigadier-general in the army, and appointed by President Pierce superintendent of the wagon road in California. In 1861 President Lincoln appointed him surveyor-general of California and Nevada, but he declined the office to enter the Union army, in which he served through the civil war. After the war he engaged extensively in stock raising and wool growing near Los Angeles, Cal., till 1876, when President Grant, with whom he had been on terms of unusual intimacy for many years, appointed him United States minister to Austria. He remained in Vienna one year, then resigned, and subsequently spent the most of his time in California.

**Beard, James Henry**, painter, born in Buffalo, N. Y., in 1814; died in Flushing, L. I., April 4, 1893. He was of English-Scotch ancestry, his father having been descended from Sir James Beard, of England, and his mother from Sir Lochlain Maclean, of Scotland. The family removed to Ohio, and settled finally in Cincinnati, where James Henry devoted himself to portrait painting with great success. We owe to his skillful brush much of our familiarity with the outward appearance of Henry Clay, John Quincy Adams, and other public men who gave him sittings. In 1846 he exhibited in the National Academy, New York city, a painting called "The Carolina Emigrants," and in 1848 he became an honorary member of the Academy. In 1870 he removed his residence to New York, and in 1873 he was elected to full membership in the Academy. He achieved success in animal painting, to which he devoted himself in his later years. His best known works include "A Peep at Growing Danger" (1871); "The Widow" (1872); "A Mutual Friend," "The Parson's Pets" (1875); "Attorney and Clients," "Out all Night," and "There's Many a Slip" (1876); "Consultation" and "Blood will tell" (1877); "Don Quixote and Sancho Panza" (1878); "Don't you know me?" (1879); "Heirs at Law" (1880); "Which has Pre-emption?" (1881); "You can't have this Pup" (1882); "My Easter's all spoilt" and "I don't believe One Word of it" (1883); "The Detected Poacher" (1884); "Don't you come here" and "The Mississippi Flood" (1885); "A Barnyard," "Ll yer gimme some? Say!" (1886).

**Beauregard, Pierre Gustave Toutant**, military officer, born in St. Martin's Parish, La., May 28, 1818; died in New Orleans, La., Feb. 20, 1893. He was graduated at the United States Military Academy and appointed a brevet 2d lieutenant of artillery in 1838; was promoted 1st lieutenant and transferred to the corps of engineers in 1839; distinguished himself in the Mexican War, where he won the brevet of captain for gallantry at Contreras and Churubusco, and of major for Chapultepec, where he was twice wounded; was engaged in constructing fortifications on the Gulf of Mexico after the war; and for five days in January, 1861, was superintendent of the Military Academy. He resigned his commission after the secession of Louisiana in February following; was appointed com-

mander of the Confederate forces at Charleston, S. C.; and there opened the hostilities of the civil war by bombarding Fort Sumter, on April 11. After the evacuation of the fort by Major Anderson, Gen. Beauregard was transferred to Virginia, where he commanded the Confederate forces in the battle of Bull Run, on July 21. In March, 1862, he was ordered to the Army of the Mississippi, under Gen. Albert S. Johnston, and in April following fought the battle of Shiloh, gaining a victory over the National forces the first day, but being defeated by Gen. Grant on the second day. Failing health kept him from active duty till June, 1863, when he took charge of the defense of Charleston against the combined land and naval forces.



He remained in command there till April, 1864, when he was ordered to Richmond, to strengthen its defenses. On May 16, he attacked Gen. Butler in front of Drury's Bluff, and forced him back to his intrenchments between the James and the Appomattox rivers. In anticipation of Gen. Sherman's successful march through the Carolinas, he ordered Gen. Hardee to evacuate Charleston, which was done, Feb. 17, 1865. He attempted to aid Gen. Joseph E. Johnston in opposing Gen. Sherman, but in April surrendered with the former to the latter. After the war he became President of the New Orleans, Jackson and Mississippi Railroad Company, Adjutant-General of the State, and a manager of the Louisiana State Lottery. He published "The Principles and Maxims of the Art of War" (Charleston, 1863) and "Report of the Defense of Charleston" (Richmond, 1864), and was the last survivor of the full generals of the Confederacy.

**Bedford, Gunning S.**, jurist, born in New York city, in 1837; died there, Oct. 29, 1893. He was a son of Dr. Gunning S. Bedford, well known in his day as a physician and medical writer, and a great-grand-nephew of Gunning Bedford, one of the framers of the Federal Constitution. He was graduated at Columbia College in 1855, and at the Harvard Law School in 1859; was admitted to the bar in New York city in 1859; was assistant district attorney in 1865-'69; city judge in 1869-'74; in private practice, 1874-'85; and assistant district attorney from 1885 till his death. At a stated meeting of the New York Academy of Medicine, on May 18, 1871, Judge Bedford received the compliment of a resolution thanking him for the vigorous and effective manner in which, in his official capacity, he had co-operated with the medical authorities in their efforts to check the crime of abortion.

**Beers, William H.**, insurance officer, born in Philadelphia, Pa., April 16, 1823; died in New York city, Nov. 16, 1893. He received a public-school education; served some time in the United States navy; became a clerk in the New York Life Insurance Company in 1853; and was its president from 1885 till Feb. 10, 1892. In 1891 the New York "Times" charged him with gross mismanagement of the company's affairs, for which he brought two actions for libel against that newspaper, aggregating \$1,750,000. Both of these suits were withdrawn; the superintendent of the State Insurance Department investigated the charges, and in his report so criticised Mr. Beers's methods that the latter resigned the presidency. The board of directors then made a contract with Mr. Beers by which he was to serve the company in an advisory capacity for life, at an annual salary of \$37,500, one half his former salary as presi-



dent. After his resignation the board of directors was reorganized; John A. McCall, formerly superintendent of the State Insurance Department, was elected president, and the pension voted Mr. Beers on his retirement was pronounced invalid by the State Supreme Court.

**Bell, Charles H.**, lawyer, born in Chester, N. H., Nov. 18, 1823; died in Exeter, N. H., Nov. 11, 1893. He was graduated at Dartmouth College in 1844; studied and practiced law in Somersworth and Exeter; was solicitor for Rockingham County in 1855-'65; elected to the State House of Representatives in 1858, 1859, and 1860, and speaker in the last term; State Senator in 1863-'64; and again representative in 1872-'73. In March, 1879, he was appointed by Gov. Prescott United States Senator to fill the vacancy made by the expiration of Senator Wadleigh's term before the convening of the Legislature. From June, 1881, till June, 1883, he was Governor of New Hampshire, and in 1889 was President of the State Constitutional Convention. He had been President of the State Historical Society for many years, and editor of the "Exeter News-Letter;" and had published "The History of Exeter," "The Bench and Bar of New Hampshire," and "Memoirs of John Wheelwright."

**Berdan, Hiram**, inventor, born in Plymouth, Mich., about 1823; died in Washington, D. C., March 31, 1893. He was brought up on his father's agricultural and stock-breeding farm near Rochester, N. Y., and displayed a strong taste for mechanical investigation from early youth. He was educated at Hobart College, where he made unusual progress in mathematics, and spent all his leisure in fashioning original mechanical contrivances. Beyond his skill as a marksman there was nothing to distinguish him till the outbreak of the civil war, when his proposition to organize a regiment of personally selected marksmen was approved by the War Department. He was appointed colonel of the 1st Regiment of United States Sharpshooters in April, 1861, and armed it with a rifle of his own invention, fed by metallic cartridges, also invented by him. At Chancellorsville he won the brevet of brigadier-general of volunteers, and at Gettysburg that of major-general. The Berdan sharpshooter was the first repeating rifle put into actual and effective service. After the war he went to Russia, and spent several years superintending the manufacture of his rifle for the re-equipment of the army. He returned home about 1888 to apply himself to other inventions, and to prosecute his suit against the Federal Government for infringing his patents by incorporating the principal features of his repeating rifle in the Springfield arm. He sued for nearly \$500,000 damages, and a year before his death the United States Court of Claims gave him a judgment against the Government for \$100,000. His latest inventions were a twin-screw, armored, semisubmarine gunboat; a long-range finder; several forms of torpedoes; a torpedo boat designed to evade projected nets; and a distance fuse for shrapnel shells.

**Billings, Edward Coke**, jurist, born in Hatfield, Mass., Dec. 3, 1829; died in New Haven, Conn., Dec. 1, 1893. He was graduated at Yale in 1853, and at Harvard Law School in 1855, and practiced in New York city till 1865, when failing health led him to seek a Southern home, and he settled in New Orleans. There, as a member of the firm of Sullivan, Billings & Hughes, he had a large practice in the settlement of claims growing out of the civil war. He also became active in public matters during the reconstruction period, and in the presidential controversy of 1876, acting as counsel in the Republican interest in the latter. In 1876 he was appointed judge of the United States district court for the Eastern District of Louisiana, and he held this office till his death. See also his name in GIFTS AND BEQUESTS.

**Bingham, George B.**, military officer, born in Rochester, N. Y., April 29, 1821; died in Westborough, Mass., Aug. 7, 1893. He removed to Milwaukee in 1841; was one of the first men in Wisconsin to volunteer for the Union army in 1861; was commissioned captain of

Company A, 1st Wisconsin Infantry; and was mustered out of the service at the close of the war with the brevet rank of brigadier-general. In 1878 he removed to Kansas, and in 1881 made his home in Westborough.

**Bishop, Richard Moore**, merchant, born in Fleming County, Ky., Nov. 4, 1812; died in Jacksonville, Fla., March 2, 1893. He was educated for mercantile business; followed it for several years in his native State, and since 1848 had been established in Cincinnati. In 1859 he was elected Mayor of Cincinnati, and in 1877 Governor of Ohio, both times as a Democrat. As mayor he received and entertained with much pomp the Prince of Wales and his suite, and enforced the Sunday ordinances with greater vigor than any of his predecessors. He was a promoter of important state and municipal enterprises; succeeded Alexander Campbell as President of the General Christian Missionary Convention; and was President of the great National Commercial Convention in Baltimore in 1871.

**Bissell, William Henry Augustus**, clergyman, born in Randolph, Vt., Nov. 10, 1814; died in Burlington, Vt., May 14, 1893. He was graduated at the University of Vermont in 1836; studied theology while teaching in the Episcopal institutes in Burlington, Vt., and Troy, N. Y.; was ordained deacon Sept. 29, 1839, and priest Aug. 2, 1840; and was rector of Trinity Church, West Troy, N. Y., 1841-'45, Grace Church, Lyons, N. Y., 1845-'48, and Trinity Church, Geneva, N. Y., 1848-'68. On June 3, 1868, he was consecrated second Protestant Episcopal bishop of the diocese of Vermont, and continued in that office till his death.

**Black, Henry M.**, military officer, born in Pennsylvania, Jan. 15, 1827; died in Chicago, Ill., Aug. 5, 1893. He was graduated at the United States Military Academy, and appointed brevet 2d lieutenant 4th United States Infantry in 1847; was promoted 2d lieutenant 7th Infantry the same year, 1st lieutenant 9th Infantry in 1855, captain in 1856, major 7th Infantry in 1863, lieutenant-colonel 4th Infantry in 1868, and colonel 23d Infantry in 1882; and was retired Jan. 15, 1891. He served in the volunteer army as colonel of the 6th California Infantry from 1863 till Oct. 27, 1865, and received brevets of lieutenant-colonel and colonel March 13, 1865, for faithful and meritorious services during the civil war. His army service comprised duty in the Mexican War in 1846-'48; on the frontier in 1848-'61; on the Pacific coast in 1861-'64; as commandant of cadets at the Military Academy in 1864-'68; and with his regiment till his retirement.

**Blankenship, James Alexander**, sculptor, born in Frozen Island, Prince George County, Va., in 1859; died in New York city, July 1, 1893. He was brought up on his father's plantation, and exhibited a talent for modeling in clay at an early age. When thirteen years old he completed his first important figure—a negro boy resting on a hoe—which was purchased by William Corcoran for his art gallery in Washington. This was followed by the widely known figure of a negro boy pulling a thorn from his foot. His work attracted the attention of Edward Valentine and Moses Ezekiel, the sculptors, who invited him to New York city, where he studied with Mr. Valentine till he was sixteen years old. Subsequently he took a course with Chapu, in Paris. In 1890 he returned to New York city, and was appointed Professor of Sculpture in the New York Institute of Artists and Artisans. His last works were the designs of the allegorical statues of "Patriotism," "Tradition," and "Theology," on the Administration Building, and the allegorical group on the Electricity Building, both at the Columbian Exposition, and an incomplete study for a statue to Gen. J. E. B. Stuart, to be erected in Richmond. Just before his death he received a medal from the World's Fair Commissioners.

**Blatchford, Samuel**, jurist, born in New York city, March 9, 1820; died in Newport, R. I., July 7, 1893. He was graduated at Columbia College in 1837, studied law with his father and uncle, comprising the



firm of R. M. & E. H. Blatchford, and became secretary to William H. Seward when the latter was elected Governor of New York. From 1845 till 1854 he practiced law in Auburn, N. Y., with the firm of which Gov. Seward and Christopher Morgan were members, and in the latter year returned to New York city, and with Clarence A. Seward and Burr W. Griswold formed the firm of Blatchford, Seward & Griswold. While achieving success in general practice, it was his application to admiralty law that gave him the widest repute. Under appointment by Judge Samuel Nelson as reporter of the United States Circuit Court for the 2d Judicial Circuit, he began in 1852 the compilation of "Blatchford's Reports" of cases in that court, which were continued till 1888. In 1855 he also began the publication of reports of admiralty cases in the United States District Court of the Southern District of New York, known as "Blatchford & Howland's Reports." Further compilations were "Blatchford's Prize Cases," in the district and circuit courts, prepared for the Department of State, "General Statutes of New York," and "New York Civil and Criminal Justice." On May 3, 1867, he was appointed by President Johnson judge of the United States District Court for the Southern District of New York, to succeed Judge Samuel R. Betts, resigned. His opinions while on this bench are given in "Benedict's District Court Reports." In March, 1878, President Hayes appointed him judge of the United States Circuit Court for the Second Circuit, to succeed the late Judge Alexander S. Johnson. His opinions here are given in "Blatchford's Circuit Court Reports," also in the "Federal Reporter." Judge Blatchford held this office till March, 1882, when, on the retirement of Associate-Justice Ward Hunt from the bench of the United States Supreme Court, and the refusal of Roscoe Conkling to accept the office in succession, President Arthur tendered him the vacant seat on the bench, and he accepted it. In this court he continued to give close attention to admiralty cases, and also rendered important decisions on bankruptcy, copyright, patent, and libel causes. He received the degree of LL.D. from Columbia College in 1867, and was a trustee of that institution from that year till his death.

**Bolton, Sarah Tittle**, author, born in Newport, Ky., Dec. 18, 1815; died in Indianapolis, Ind., Aug. 4, 1893. She removed with her parents to Madison, Ind., in early life; began contributing verse to a local newspaper in 1831; married Nathaniel Bolton, then an editor; accompanied him to Geneva, Switzerland, where he was United States consul in 1855-'57, and while abroad continued to contribute to American newspapers. Collections of her poems, of which the war song "The Union Forever," "Paddle your own Canoe," and "Left on the Battlefield," are the most widely known, were published in New York city in 1865, and in Indianapolis in 1886.

**Bonaparte, Jerome Napoleon**, military officer, born in Baltimore, Md., Nov. 5, 1830; died in Beverly, Mass., Sept. 3, 1893. He was a grandnephew of the Emperor Napoleon I, and grandson of Jerome Bonaparte, King of Württemberg, and of Elizabeth Patterson, of Baltimore. He was graduated at the United States Military Academy in 1852; served on the Texas frontier till 1854; resigned, and entered the French army as a lieutenant of dragoons; distinguished himself at Balaklava, Inkerman, and Sebastopol; and received the decoration of knight of the French Legion of Honor, the Crimean medal from Queen Victoria, and the Medjidil order from the Sultan of Turkey. In 1856-'57 he took part in the Algerian campaign, and in 1859 was in the Italian campaign against Austria, receiving both French and Italian decorations for his services. He was in the Empress's Guard in 1867-'70; was promoted colonel; and, escaping with difficulty from the Commune, returned to the United States in 1871. While in France he appealed to the highest tribunals to establish his right to use the name of Bonaparte, and they decided

in his favor, but dynastic reasons prevented any further action.

**Bond, Hugh Lennox**, jurist, born in Baltimore, Md., Dec. 16, 1828; died there, Oct. 24, 1893. He was a son of the Rev. Thomas Emerson Bond, for many years editor of the "Christian Advocate," and was graduated at the University of the City of New York in 1848. Returning to Baltimore, he studied law and was admitted to the bar, where he soon gained high rank. From 1860 till 1868 he was judge of the criminal court of Baltimore, and since 1869 had been United States circuit judge for the 4th Judicial Circuit. While judge of the criminal court he ordered the release of many citizens who had been arrested for displaying the American flag, and urged the enlistment of slaves in the Union army. His most signal distinction was his administration of the law in the famous Kuklux trials in South Carolina, over which he presided with great dignity and utter fearlessness. In 1876, when the Supreme Court of South Carolina had imprisoned the presidential electoral board and a writ of *habeas corpus* had been sworn out for their release, he ordered the discharge of the board on the ground that they had officially exercised a Federal function and were not amenable to State law for its performance.

**Boynton, Edward Carlisle**, military officer, born in Vermont, in 1824; died in Newburgh, N. Y., May 13, 1893. He was graduated at the United States Military Academy and appointed brevet 2d lieutenant in the 2d United States Artillery in 1846; took part in the Mexican War, and was wounded at Churubusco; was Assistant Professor of Chemistry, Mineralogy, and Geology at the Military Academy in 1848-'55; accompanied the expedition against the Seminole Indians in Florida in 1855-'56; and resigned from the army to accept a professorship in the University of Mississippi in the latter year. In 1861 he lost this office because of lack of sympathy with the secession movement, and on Sept. 23 was reappointed to the army as captain in the 11th United States Infantry. He was on duty at the Military Academy through the war, was brevetted major, U. S. A., for services in 1865, and resigned in 1872. Subsequently he was superintendent of the Newburgh water works. He published works on military and philosophical subjects.

**Bragaldi, Marquis Mario**, architect, born in Milan, Italy, in 1806; died in New York city, Oct. 24, 1893. He removed to New York city in 1832, bringing with him a reputation as a decorative artist and architect, and was soon established in professional work. Besides decorating many private dwellings and designing other structures, he prepared the plans for the National Theater, the Richmond Hill Theater, the Eagle Theater in New York city, and the Stewart building on lower Broadway. About 1848 he was summoned to Rio de Janeiro by the Emperor of Brazil, where he planned, superintended the erection, and decorated the interior of the new palace. From Brazil he went to Spain, where he built the Theater Royal in Madrid, and the theater in Barcelona; thence to England, and designed the seat of the Duke of Hamilton and other costly edifices; then to Milan, where he decorated the Arcade of Victor Emmanuel; and returning to New York city decorated the residence of Alexander T. Stewart. Subsequently the marquis was Col. Mapleson's principal scenic artist during that manager's operatic engagements.

**Bridge, Horatio**, naval officer, born in Augusta, Me., April 8, 1806; died in Athens, Pa., March 18, 1893. He was graduated at Bowdoin College, in the class with Nathaniel Hawthorne and Henry W. Longfellow, in 1825; was admitted to the bar in 1828, and practiced in Augusta for ten years; and entered the United States navy as paymaster in 1838. He made a three years' cruise in the Mediterranean in the "Cyane," and one of two years off the coast of Africa in the "Saratoga"; was at the Portsmouth Navy Yard in 1849-'51; was chief of the Bureau of Provisions and Clothing of the Navy in 1854-'69; chief inspector of provisions and clothing in 1869-'73; and



was then retired as pay director, with the relative rank of commodore. In 1845 he published the "Journal of an African Cruiser," edited by Nathaniel Hawthorne.

**Brockett, Linus Pierpont**, author, born in Canton, Conn., Oct. 16, 1820; died in Brooklyn, N. Y., Jan. 13, 1893. He was educated at Brown University; graduated at the Yale Medical School in 1843; practiced for four years; was lecturer on physiology and anatomy at Georgetown College, Kentucky, in 1844-'45; was a publisher in Hartford, Conn., in 1847-'58; and was a commissioner to investigate idiocy in Connecticut in 1854-'56. At times between 1856 and 1873 he was employed on Appletons' "American" and "Annual" cyclopædias, and from 1873 till 1883 on "Johnson's Universal Cyclopædia." As editor or contributor he was connected with many magazines, reviews, and other publications. Among the many works of which he was author wholly or in part, were: "Geographical History of New York" (1847); "Pioneer Preacher" (1856); "History of Education" (1859); "Eighty Years' Progress of the United States" (1861); "Life of Lincoln" (1865); "Our Great Captains" (1868); "Woman's Work in the Civil War" (1867); "Men of our Day" (1868); "Woman: Her Rights, Wrongs, Privileges, and Responsibilities" (1869); "The Year of Battles" (1872); "Una and her Paupers" (1874); "Our Country's Wealth and Influence" (1881); "Our Western Empire" (1881-'82); "Descriptive America" (1884-'85); and "The Great Metropolis" (1888).

**Brown, Simeon**, military officer, born in New Hampshire, in 1812; died in St. Clair, Mich., March 17, 1893. He removed to Michigan in 1835; was commissioned major of the 6th Michigan Cavalry at the beginning of the civil war; promoted colonel of the 11th Michigan Cavalry in 1862; brevetted brigadier-general for distinguished services at Marion, Va.; and took part in 72 battles and skirmishes.

**Burke, Denis F.**, military officer, born in Cork, Ireland, April 19, 1841; died in New York city, Oct. 19, 1893. He removed to New York city in 1855, and was engaged in the dry-goods business till the beginning of the civil war. He was among the first to enlist in the company of the 69th Regiment, of which Gen. Thomas F. Meagher went out as captain; served to the close of the war; and for gallantry at Harrison's Landing, Antietam, Gettysburg, the Wilderness, Todd's Tavern, Spottsylvania, Cold Harbor, Petersburg, and Fort Sedgwick, he rose from the rank of second lieutenant to that of brevet brigadier-general. At Gettysburg he was personally commended by Gen. Hancock on the field, and his brevet of brigadier-general was conferred on that commander's recommendation. In 1866 he returned to Ireland, where he was arrested on suspicion of being a Fenian, and was imprisoned for seven months. He returned to New York city in 1868, supported the candidacy of Gen. Grant for the presidency, and after the election received a clerkship in the New York tax commissioner's office. For several years before his death he was employed in the New York customhouse.

**Butler, Benjamin Franklin**, lawyer, born in Deerfield, N. H., Nov. 6, 1818; died in Washington, D. C., Jan. 11, 1893. His father was Captain John Butler, who served at New Orleans under Gen. Jackson. Benjamin was graduated at Colby University (then Waterville College), Maine, in 1838, and was admitted to the bar in 1840. He began practice in the town of Lowell, Mass., and soon became eminent, especially in criminal cases. He was a Democrat, and almost from the outset of his career took an active part in political affairs. In 1853 he was elected to the Massachusetts House of Representatives, and in 1859 to the State Senate. In 1860 he was delegate to the Democratic National Convention at Charleston, S. C., and was with the portion that reassembled at Baltimore after the break made by the resolution in regard to secession. He took an active part in the proceedings for a time, but finally announced the withdrawal of

the Massachusetts delegation, on the ground that there had been a withdrawal in part of a majority of the States. In closing, he said that he also withdrew upon the ground that he would not sit in a convention where the "African slave trade, which is piracy by the laws of my country, is approvingly advocated." The Democrats of Massachusetts nominated him for Governor that year, but he was defeated. In April, 1861, when President Lincoln issued the first call for troops, Gen. Butler (then brigadier-general of militia) offered his services, and was put in command of the eighth Massachusetts Regiment. On the 17th of April he marched to Annapolis, and was given command of the district of Annapolis, which contained Baltimore. On May 13 he entered that city at the head of 900 men, and occupied it without opposition. On the 16th he was promoted to major-general, and assigned to command of Fort Monroe and the Department of Eastern Virginia. When slaves who had escaped from their masters' plantations came within his lines and their return was demanded, they were withheld on the ground that the slaves were held as property, and were therefore contraband of war. From this incident the term "contrabands" soon became popular, and was used throughout the National armies and the North to designate fugitive slaves. In August, 1861, Gen. Butler commanded an expedition that captured Forts Hatteras and Clark, on the North Carolina coast. His next work was to return to Massachusetts to get recruits for an expedition to the mouth of the Mississippi, in which he was successful, and on March 23, 1862, sailed with his command for Ship Island. On April 17, after Farragut had passed the forts and captured New Orleans, Gen. Butler went up the Mississippi with his forces, and on May 1 occupied the city. Here he showed great ability in ruling a turbulent populace. He compelled the rich secessionist to assist the poor, instituted the strictest sanitary regulations, cleaned the city, armed the free colored men, caused one Mumford to be hanged for hauling down the United States flag from the mint, and issued an order intended to prevent women from insulting the soldiers in the streets. The last two orders raised a furious discussion, and Jefferson Davis issued an order denouncing him as an outlaw and setting a price on his head. On May 11, 1862, Gen. Butler seized \$800,000 that had been deposited in the office of the Dutch consul, on the ground that it was intended for the purchase of arms for the Confederacy. The foreign consuls all entered a protest, and, on examination, the Government caused the money to be returned. On Dec. 16 he was recalled. He always contended that the act was done at the instigation of Louis Napoleon, who supposed Gen. Butler to be hostile to his schemes in Mexico. Near the close of 1863 he was given command of the troops in the Department of Virginia and North Carolina, afterward called the Army of the James. When Gen. Grant planned his great campaign in the spring of 1864, he designed to have all the National armies move at once against the forces of the Confederacy, to prevent the latter from being massed at any one point. The part assigned to the Army of the James was to move westward, south of James river toward Petersburg and the southern defenses of Richmond, virtually attacking Lee's army in the rear, while the Army of the Potomac attacked it in front. But in this Gen. Butler was thwarted by Gen. Beauregard, who threw up an impassable line of defenses across the peninsula between





the James and the Appomattox. In October, 1864, Gen. Butler was sent to New York city, where election riots were apprehended. In December he commanded an expedition against Fort Fisher, the chief defense of Wilmington, N. C., but was unsuccessful, and was removed from command by Gen. Grant. He returned to Massachusetts, but continued to take an interest in public affairs, and in 1866 was elected to Congress by the Republicans. He was returned for twelve years with but one intermission of two years, between 1875 and 1877. In 1868 he was an active manager of the movement that led to the impeachment of President Johnson. In 1871 he was a candidate for Governor of Massachusetts, but was defeated. In 1879 when he had changed his politics, he was again a candidate for Governor on the Greenback and Democratic tickets, but was again defeated. In 1882 the Democrats united upon him and secured his election, although they lost the rest of their ticket. While in that office he brought a charge against the Tewksbury almshouse of gross mismanagement, and a long investigation followed in the Legislature, but the charge was not sustained. In 1883 he was renominated, but was defeated. In 1884 the Greenback and Antimonopolist parties united upon him as their candidate for the presidency of the United States, and they gave him 133,825 votes. He married, in 1842, Sarah Hildreth, daughter of Dr. Israel Hildreth, of Lowell, Mass. She had been an actress for several years previous to her marriage, but retired from the stage then, and died in April, 1876.

**Buttre, John Chester**, steel engraver, born in Auburn, N. Y., June 10, 1821; died in Ridgewood, N. J., Dec. 2, 1893. He studied drawing and engraving on wood, and on removing to New York city, in 1841, applied himself to engraving on steel, with large success. An original method of treating portraits, by which he secured a peculiar tint and a remarkably lifelike expression, early won for him wide celebrity, which was shown in the sale of his first notable engraving, a life-size portrait of President Buchanan, in 1858. During the civil war he produced portraits of the leaders in the National and Confederate armies, and other celebrities, including a striking one of President Lincoln. In the line of studies he produced "The Empty Sleeve," "Welcome Home," "Martha Washington," "The Old Oaken Bucket," and "The First Step." He also engraved President Lincoln's Proclamation of Emancipation on a plate measuring 2 by 3 inches. In 1880-'81 he published portraits of nearly 250 well-known citizens of the United States, under the title of "The American Portrait Gallery," in 3 volumes, with text by his daughter Lillian, and shortly after Gen. Grant's death he published his last engraving, a vignette of the great soldier.

**Bynner, Edwin Lassetter**, author, born in Brooklyn, N. Y., Aug. 5, 1842; died in Boston, Mass., Aug. 5, 1893. He was graduated at the Harvard Law School; was admitted to the bar; and practiced in Boston, St. Louis, and New York city till 1886, when he gave up law for literature. He gave special attention to the colonial history of New England. Besides writing the chapters on the topography and landmarks of the provincial period in the "Memorial History of Boston," he published the historical novels "Nimpoit" (1877); "Tritons" (1878); "Damen's Ghost" (1881); "Agnes Surriage" (1886); "Penelope's Suitors" (1887); "The Begum's Daughter," a narrative of social life in New York city at the time it was passing from Dutch to English occupation (1889); "The Chase of the Meteor, and Other Stories" (1891); and "Zachary Phips" (1892).

**Camp, Hiram**, manufacturer, born in Plymouth, Mass., April 9, 1813; died in New Haven, Conn., July 9, 1893. He was a nephew of Chauncey Jerome, the first clockmaker in New England; was apprenticed to the new industry; bought out the business on the removal of the firm to New Haven in 1851; organized a new company in 1853, and remained at the head of it till 1892. He supported a city and two Sunday-school missionaries in other States; founded

the Mount Hermon Boys' School at Gill, Mass.; co-operated with Dwight L. Moody in establishing the Northfield Seminary for Young Women, and gave the Moody institutions nearly \$100,000. An appeal against the probate of his will, which contained bequests to charitable and religious organizations aggregating \$100,000, was filed by his family.

**Campbell, Douglas**, lawyer, born in Cherry Valley, N. Y., in 1839; died in Schenectady, N. Y., March 7, 1893. He was a son of Judge William M. Campbell, of the Superior and Supreme Courts of New York, and was graduated at Union College in 1860. At the beginning of the civil war he entered the Union army, and was rapidly advanced till he attained the rank of major and the command of the 21st United States Colored Infantry, when ill health caused him to resign. He then studied law at Harvard, and began practicing in New York city in 1866. His financial success at the bar enabled him to retire from practice a few years ago and to give his whole attention to some historical studies he had begun more than twenty years before. As a result of these studies, and of prolonged personal research in the libraries of the United States, London, Leyden, and the Hague, he published "The Puritan in Holland, England, and America: An Introduction to American History" (New York, 1892), which drew from Mr. Gladstone a letter of gratification and approval.

**Campbell, James**, lawyer, born in Philadelphia, Pa., Sept. 1, 1812; died there, Jan. 27, 1893. He was educated by private tutors, and was admitted to the bar in 1834. While a member of the Board of Education he introduced the resolution which gave the city its Girls' Normal School. In 1841-'51 he was judge of the Court of Common Pleas by appointment, and in the latter year, when the office became elective, he was defeated for the office by Judge Richard Coulter, the Native American candidate. Soon afterward he was appointed by Gov. Bigler Attorney-General of the State, and held the office till March 4, 1853, when President Pierce appointed him Postmaster-General. He served through the entire administration. In the decade preceding the civil war he was a vigorous leader of the Pennsylvania Democracy. In 1862 he was defeated for the United States senatorial nomination by Charles R. Buckalew; in 1873 declined a seat in the State Constitutional Convention; and subsequently practiced law.

**Cappa, Carlo Alberto**, bandmaster, born in Alessandria, Sardinia, in 1834; died in New York city, Jan. 6, 1893. He was the son of an officer in the Sardinian army, and was educated in the Royal Academy of Asti, to which only the sons of soldiers are admitted. On leaving the academy he entered the band of the 6th Lancers in the Sardinian army, and became first trombone player. In 1856 he enlisted as a musician on the United States frigate "Congress," then at Genoa, and after a two years' cruise settled in Philadelphia. His first engagement was with Kendall's band, with which he made a tour of the principal cities, and he then played with Shelton's New York band till its leader, Grafulla, was appointed leader of the 7th Regiment band, when he accompanied him. In 1881 he succeeded to the leadership of this band, and held it till his death. In 1869 he also became first trombone player in Theodore Thomas's orchestra, remaining seven years. He was also connected with the Mapleson orchestra and the Philharmonic Societies of New York and Brooklyn. In 1891 he was made a cavalier of Italy by King Humbert.

**Carroll, Samuel Sprigg**, military officer, born in Washington, D. C., Sept. 21, 1832; died there, Jan. 28, 1893. He was graduated at the United States Military Academy and appointed a brevet 2d lieutenant in the 9th United States Infantry in 1856; was promoted 2d lieutenant 10th Infantry the same year, 1st lieutenant and captain in 1861, and lieutenant-colonel 21st Infantry in 1867; and was retired with the rank of major-general June 9, 1869. In the volunteer service he was commissioned colonel 8th Ohio Infantry, Dec. 7, 1861, was promoted brigadier-



general, May 12, 1864, and was mustered out, Jan. 15, 1866. During the civil war he was brevetted major, May 3, 1863, for gallantry at Chancellorsville; lieutenant-colonel, July 3 following, for Gettysburg; colonel, May 5, 1864, for the Wilderness; and brigadier-general and major-general, U. S. A., and major-general, U. S. V., March 13, 1865, for Spottsylvania and meritorious services during the war. He was wounded at Rapidan, in the Wilderness, and at Spottsylvania, and was retired for disability, as major-general, before he was thirty-seven years old.

**Case, Augustus Ludlow**, naval officer, born in Newburgh, N. Y., Feb. 3, 1813; died in Washington, D. C., Feb. 17, 1893. He was appointed a midshipman in the United States navy, April 1, 1828; was promoted passed midshipman, June 14, 1834; lieutenant, Feb. 25, 1841; commander, Sept. 14, 1855; captain, Jan. 2, 1863; commodore, Dec. 8, 1867; and rear-admiral, May 24, 1872; and was retired Feb. 3, 1875. During his active career he was on sea duty twenty-three years and six months, on shore or other duty thirteen years and eight months, and was unemployed twenty-two years and seven months. He was engaged in the South Sea exploring expedition in 1837-'42; was present at the capture of Vera Cruz, Alvarado, and Tabasco, in the Mexican War; lighthouse inspector in 1853-'57; in the Paraguay expedition in 1859; fleet captain of the North Atlantic blockading squadron, and present at the capture of Forts Hatteras and Clark in August, 1861; commanded the blockade of New Inlet, N. C., in 1863; chief of the Ordnance Department in 1869-'73; and commander of the naval force at Key West during the excitement following the capture of the "Virginus" by the Spaniards in 1874.

**Caslear, John W.**, painter, born in New York city, June 25, 1811; died in Saratoga, N. Y., Aug. 17, 1893. When fifteen years old he began studying steel engraving with Peter Maverick, and subsequently was for many years in the employ of the American Bank Note Company. While so employed he became an excellent draughtsman, and took up the study of oil painting, spending 1840-'42 in study in Europe, and 1857-'58 sketching in Switzerland. He was elected an associate of the National Academy of Design in 1835, and a full member in 1851. His numerous paintings include: "A Swiss Lake" (1868); "Genesee Meadows" (1871); "September Afternoon" (1874); "Trout Brook" (1875); "Ulleswater, England" and "Autumn" (1876); "Lake Lemman" and "A Scene in New Hampshire" (1877); "View on Chemung River" (1878); "View of the Rocky Mountains" (1881); "Scene on Long Island" (1883); "Early Autumn" (1884); "Genesee Valley" (1885); "Early Summer, Long Island Sound" (1886); and "Summer Day," exhibited 1893.

**Chipman, John Logan**, lawyer, born in Detroit, Mich., June 5, 1830; died there, Aug. 17, 1893. He received a common-school and university education; became explorer in the Lake Superior region for a mining company in 1846; and was admitted to the bar in 1854. In the latter year he took part in negotiating a treaty with the Ottawa and Chippewa Indians of Michigan, and in settling the claims of the Chippewas. From 1856 till 1861 he was city attorney of Detroit; in 1863 was elected to the Legislature; in 1866 was defeated as Democratic candidate for Congress; in 1879 and 1885 was elected judge of the Superior Court; and in 1886, 1888, 1890, and 1892, was elected to Congress from the 1st Michigan District as a Democrat. His last committee service was as chairman of the joint Committee on the Election of President and Vice-President and Representatives in Congress, and on the Committee on Foreign Affairs.

**Coleman, William T.**, merchant, born in Cynthiana, Ky., Feb. 29, 1824; died in San Francisco, Cal., Nov. 22, 1893. In early youth he engaged in lumbering in St. Louis, went through the full course in the St. Louis University in two years, and began studying law, but was soon compelled by failing health to abandon it. He then spent several years in lumber-

ing in the forests of Wisconsin. In 1849 he became one of a party who made the overland trip to California, and while his companions went direct to the mines he opened several stores for the sale of mining supplies. The assault on Mr. Jansen, a well-known merchant of San Francisco, in February, 1851, led to a determination on the part of the law-abiding citizens to rid the community of its large criminal element, and to the formation of the famous Vigilance Committee, of which Mr. Coleman was one of the foremost members. In 1856 the committee was revived with Mr. Coleman at its head, in consequence of the murder of James King, of William, a conspicuous editor. Mr. Coleman resisted great pressure against interfering with "the people," had charge of the trials, directed the execution of the murderers, and prevented the committee from taking any action that would precipitate trouble with the United States authorities. From 1857 till 1864 he lived in New York city, but continued to direct the business of the firm of William T. Coleman & Co. in San Francisco. While in New York city he aided materially in suppressing the draft riot, contributed liberally to patriotic benefactions, and after the war headed the movement to aid the stricken people of the South. In 1877 and 1878 he left his business affairs at the request of citizens of San Francisco and organized the Committee of Safety to fight Dennis Kearney and his sand-lots mob. In this, as in previous emergencies, he was highly successful. In 1888 his firm failed with liabilities of about \$2,000,000, but it made a compromise with its creditors, and in 1892 Mr. Coleman personally liquidated his entire indebtedness, more than he was legally bound to pay, with interest.

**Collian, Victor**, inventor, born in Paris, France, in 1828; died in Detroit, Mich., Jan. 17, 1893. He belonged to a family of ironmasters who for three generations had conducted extensive works near Paris. His grandfather was the first to make wire nails by machinery, and his father the first to make wire rope similarly. He was educated in chemistry and engineering, and had charge of his father's establishment for several years; became a mining superintendent in West Virginia in 1857; and invented an improvement on a French system for saving fuel in iron melting and the well-known Colliau cupola.

**Collier, Thomas Stephens**, author, born in New York city, Nov. 4, 1842; died in New London, Conn., Sept. 21, 1893. He was educated in the common schools of New York city, and entered the United States navy at the age of fourteen as an apprentice. In 1866 he was appointed boatswain, and he was retired in October, 1883, on account of disabilities received in the service. His long service in the navy gave him the advantage of visiting those ports that are reached by our naval vessels, and he spent several years in Japan. He began writing at an early age, and was for many years a constant contributor to periodicals, and several of his poems attained a deserved popularity. He was an earnest bibliophile, and a collector of china. After his retirement from the navy he devoted his time to literary work and to his collection of books, china, and coins. In 1889 he published his collected poems under the title of "Song Sprays." He had been secretary of the New London County Historical Society since its foundation, and was an authority on the early publications of this country, having made them his especial study.

**Colton, Joseph Hutchins**, cartographer, born in Springfield, Mass., July 15, 1800; died in Brooklyn, N. Y., July 19, 1893. He kept a country store in Lenox, Mass., from 1820 till 1829, and established himself in New York city as a maker and publisher of maps in 1830. This business he followed with success till age compelled him to relinquish active management to others, and his varied geographical publications had large sales and wide reputation. Through his long life he had been interested deeply in religious, temperance, antislavery, and musical movements.

**Comegys, Joseph Parsons**, jurist, born in Cherbourg, Kent County, Del., Dec. 29, 1813; died in Dover,



Del., Feb. 1, 1893. He was a son of Cornelius P. Comegys, Governor of Delaware in 1837-'41; received a classical education; and was admitted to the bar in 1835. In 1835 and 1843 he was elected to the Legislature; in 1852 was appointed one of a commission of three lawyers to revise the State statutes; in 1856-'57 served in the United States Senate, filling the vacancy caused by the death of his law preceptor, John M. Clayton; and on May 18, 1876, was appointed Chief Justice of Delaware.

**Converse, Emma M.**, writer, born in Salem, Mass., in 1820; died in Whitefield, N. H., Sept. 6, 1893. In early life she was engaged in a wide range of educational work; for more than forty years she was employed in literary pursuits; and for the last sixteen years she had made a specialty of astronomical writings and calculations. She had contributed to the "Atlantic Monthly," the "Scientific American," and the "Youth's Companion," and translated several foreign works.

**Corse, John Murray**, military officer, born in Pittsburgh, Pa., April 25, 1835; died in Winchester, Mass., April 27, 1893. He entered the United States Military Academy in 1853, but left before graduating, studied law in Albany, N. Y., was admitted to the bar in 1860, and began practicing in Burlington, Iowa. Immediately after the attack on Fort Sumter he entered the Union army as major of the 6th Iowa Infantry, with which he served through the Frémont campaign in southwest Missouri. After this he was appointed judge advocate and inspector-general on Gen. Pope's staff, and served through the New Madrid and Island No. 10 campaigns. He distinguished himself at Shiloh, and was promoted lieutenant-colonel. At the request of Gen. Sherman he then rejoined his regiment, and with it took part in the Corinth campaign and the Memphis and Vicksburg sieges, receiving promotion to colonel, and, for gallantry at Jackson, brigadier-general. As commander of the 4th Division of the 15th Army Corps he took his command from Memphis to Missionary Ridge, where, while leading the assault, he had a leg broken by a shell. After three months' absence he returned to the field and became inspector-general on Gen. Sherman's staff. On July 22, 1864, after Gen. McPherson had been killed in front of Atlanta, Gen. Logan requested the appointment of Gen. Corse to the command of a division, and he was assigned to the 2d Division of the 16th Army Corps. After the fall of Atlanta the Confederates under Gen. Hood moved rapidly north, with the intention of seizing the Federal supplies at Allatoona, in the Kencaw mountains. More than 1,000,000 rations, besides other property, were stored there in charge of a small garrison under Col. Tourtellotte. Gen. Sherman, anticipating the movement, telegraphed to Gen. Corse at Rome to hasten to Allatoona and protect the stores. He reached the forts with 1,500 men on Oct. 5, and found that the outposts had already been attacked. Soon the Confederate force under Gen. French appeared, and after a stubborn resistance, in which Gen. Corse was shot in the face and lost an ear, the Confederates carried the lower fort and made a rush for the upper one. Gen. Sherman, hastening to Gen. Corse's relief, telegraphed from a hilltop in sight of Allatoona Pass, "Hold the fort, for I am coming!" and Gen. Corse has been credited with replying, "I am short of a cheek bone and an ear, but am able to whip all hell yet." Altogether the battle for the supplies lasted for five hours, and the Confederates were obliged to withdraw, with a loss of about 2,000 men, nearly as many as Corse's total force, while the defenders lost 707 men. The saving of these supplies made possible Sherman's march to the sea, and for this defense Gen. Corse was promoted major-general. Subsequently he accompanied Gen. Sherman on his march to the sea and through the Carolinas, and served in the army till 1866. After the war he was collector of internal revenue in Chicago, became interested in railroad construction and management, and in 1886 was appointed postmaster of Boston.

**Craven, John Joseph**, physician, born in Newark, N. J., in September, 1822; died in Patchogue, Long Island, N. Y., Feb. 14, 1893. In early life he was employed for many years in an extensive chemical manufactory, and while there carried on experiments in magnetism which had a large influence in the subsequent development of the electrical science. In 1846 he superintended the building of the first telegraph line between New York and Philadelphia, using many devices of his own invention. He was the first to insulate telegraph wires with gutta-percha, the patent for which was denied him on a technicality; the first to perfect a submarine cable for telegraphic purposes; and the first to use glass on telegraph poles to prevent the grounding of the wires. He spent two years in California during the gold excitement, and on his return studied medicine. In 1861 he was appointed surgeon of the 1st New Jersey Volunteers. Soon afterward he was the fifth candidate in the field to qualify for appointment as brigade surgeon, and was assigned to the charge of the medical department of the expedition to South Carolina under Gen. Horatio G. Wright. In 1862 he was appointed medical director of the Department of the South, and had the care of all of Gen. Q. A. Gilmore's force, then investing Fort Pulaski. In September of the same year he was made medical purveyor of the department. He directed the medical equipment of the expedition against Fort Wagner and Fort Sumter, and remained at Hilton Head till May, 1864, when he was appointed medical director of the 10th Army Corps. In January, 1865, he was assigned to duty as medical purveyor of the Department of Virginia and North Carolina, with headquarters at Fortress Monroe. Under this assignment and special orders he had full charge of Jefferson Davis during his incarceration in the fortress. He was brevetted lieutenant-colonel, Dec. 16, 1865, for meritorious services during the war. After the war he published "The Prison Life of Jefferson Davis"; was postmaster at Newark; and sanitary expert at the Jersey City stockyards.

**Crittenden, Thomas Leonidas**, military officer, born in Russellville, Ky., May 15, 1819; died in Annandale, Staten Island, N. Y., Oct. 23, 1893. He was a son of United States Senator John J. Crittenden, and a cousin of President Zachary Taylor; studied law, and was elected commonwealth attorney of Kentucky in 1842. On Oct. 4, 1847, he was appointed lieutenant-colonel of the 3d Kentucky Infantry, took part in several minor engagements in Mexico, was aid-de-camp to Gen. Taylor during the battle of Buena Vista, and was mustered out of the service July 21, 1848. In the following year President Taylor appointed him United States consul at Liverpool, where he served till 1853. On Sept. 27, 1861, he was appointed a brigadier-general of United States Volunteers; July 17, 1862, was promoted to major-general; Dec. 13, 1864, was mustered out of the volunteer service; July 28, 1866, was commissioned colonel of the 32d United States Infantry; March 15, 1869, was transferred to the 17th Infantry; and May 19, 1881, was retired. He distinguished himself at Shiloh; commanded the 2d Corps of the Army of the Tennessee, when forming the left wing of Gen. Buell's army; was brevetted brigadier-general, U. S. A., for gallantry at Stone River; commanded the left wing of Gen. Rosecrans's army at Chickamauga; and in the Virginia campaign of 1864 commanded a division in the 9th Army Corps. After the war he was stationed at Forts Grant, Arizona, Abercrombie, Dakota, and other frontier posts, and at Governor's Island, New York harbor, till retired.

**Cutter, Eunice Powers**, abolitionist, born in Warren, Mass., Oct. 16, 1819; died there, May 10, 1893. She received a good education; became preceptress of the old Quaboag Seminary in Warren; married Calvin Cutter, M. D.; and from 1848 till 1857 lectured before the ladies of New England on the laws of health. In 1857 she removed to Kansas with her husband, and there she became active in the anti-slavery movement. She made cartridges for John Brown which



were used in the Ossawatimie fight, and subsequently brought the first free-soil messages through the Kansas lines to Chicago. Afterward she aided her husband in preparing his text-book on physiology and anatomy; in 1871 took charge of the revision of this work; and since 1880 had written a history of Warren and two histories of Worcester County.

**Dales, John Blakely**, clergyman, born in Kortright, Delaware County, N. Y., Aug. 6, 1815; died in Chautauqua, N. Y., Aug. 28, 1893. He was graduated at Union College in 1835, and at the Theological Seminary of the Associate Reformed Presbyterian Church, Newburgh, N. Y., in 1839; was pastor of the Second United (formerly the First Associate Reformed) Presbyterian Church in Philadelphia, Pa., since 1840; and was part editor of the "Christian Instructor" from 1846 till 1879. He also was Professor of Church History and Pastoral Theology in the Newburgh Theological Seminary in 1867-'76; moderator of the General Assembly in 1867; and corresponding secretary of the Board of Foreign Missions of the United Presbyterian Church since 1859. He received the degree of D. D. from Franklin College, Ohio, in 1853, and, among other works, published "History of the Associate Reformed Church and its Missions" (Xenia, 1859) and a "Church Manual" (1884).

**Dally, Abram**, soldier, born in New York city, Aug. 12, 1795; died in Brooklyn, N. Y., Feb. 15, 1893. In 1812 he enlisted in the 11th New York Heavy Artillery, and during the war with Great Britain was on duty at Fort Gansevoort and at the blockhouse in what is now Central Park. In 1850 an association was formed of veterans of 1812, and he rose steadily in rank in it from corporal to brigadier-general. He had been engaged in a variety of business undertakings, and since 1871 had been receiving a pension of \$8 per month from the Government. He was the last survivor in the vicinity of New York city of the War of 1812. For many years he was a familiar figure on national holidays, when, attired in full uniform, he hoisted the American flag at the old blockhouse and at the Battery.

**Day, Henry**, lawyer, born in South Hadley, Mass., Dec. 25, 1820; died in New York city, Jan. 9, 1893. He was graduated at Yale University in 1845; had charge for two years of the Fairfield Academy, Connecticut; spent a year in the Harvard Law School; and was admitted to the bar and became a member of the firm of Lord, Day & Lord, in New York city, in 1848. The style of this firm has since undergone no change, and at the time of Mr. Day's death he was its senior member. While attaining unusual distinction as a counselor in general civil law practice, he was noted for many years as an expert in ecclesiastical law. He was an "Old School" Presbyterian; several times a delegate to the General Assembly; a member of the committee appointed to attempt to reconcile the differences between the two branches; and the author of the articles of union which were ratified by the joint assembly in Pittsburg, Pa., in 1869. He had been a director of Princeton Theological Seminary since 1865, and of Union Seminary since 1870. Besides several legal works he published "The Lawyer abroad; or, Observations of the Social and Political Conditions of Various Countries" (1874) and "From the Pyrenees to the Pillars of Hercules" (1883).

**Deady, Matthew P.**, jurist, born in Easton, Md., May 12, 1824; died in Portland, Ore., March 24, 1893. In early life he was by turns a forge helper, blacksmith, farm laborer, student, and teacher. He was admitted to the bar in Ohio in 1847; was an Oregon pioneer in 1849; opened a school in the village of Lafayette; and in 1850 began practicing law, was elected to the Territorial Legislature, and prepared for publication the first volume of the local laws. In 1851 he was re-elected to the Legislature; in 1852 was president of the council; in 1853 was appointed a judge of the Supreme Court of the Territory; in 1857 was president of the convention which framed the present Constitution of the State; and from 1859 till his death was United States district judge. As

judge of the Supreme Court he organized courts in the five counties of the Territory, in each case opening the records with his own hand. Besides his judicial labors, he was appointed a commissioner to prepare a civil code in 1862. In 1864 he completed the civil code and the code of criminal procedure. Subsequently he compiled all the laws of the State, and in 1874 made further codifications. He was president of the board of regents of the State University and of the Portland Library Association.

**Deems, Charles Force**, clergyman, born in Baltimore, Md., Dec. 4, 1820; died in New York city, Nov. 18, 1893. He was graduated at Dickinson College in 1839; was licensed as an itinerant minister of the Methodist Episcopal Church, South, while in his senior year; began preaching in New York city, and spent a year in North Carolina as general agent of the American Bible Society. In 1842 he became Professor of Logic and Rhetoric in the University of North Carolina; in 1845 resigned to take the chair of Chemistry in Randolph-Macon College; in 1850-'55 was President of Greensborough Female College; and from 1866 till his death was pastor of the Church of the Strangers in New York city. His intimacy with Cornelius Vanderbilt led the latter to build and endow Vanderbilt University in Nashville, Tenn., and to purchase the old Mercer Street Presbyterian Church in New York city, endow it, and settle it on Dr. Deems for life, with its board of trustees as residuary legatees. In 1881 he was active in organizing the American Institute of Christian Philosophy, of which he was president from its first meeting till his death. His church held a special thanksgiving service in 1887, in commemoration of the close of the twenty-first year of his service with it, and on June 20, 1893, he and his wife celebrated their golden wedding. He received the degree of D. D. from Randolph-Macon College in 1850, and that of LL. D. from the University of North Carolina in 1877. Dr. Deems was widely known as an editor and author. In 1846-'51 he edited "The Southern Methodist Episcopal Pulpit"; in 1849-'52, "The Annals of Southern Methodism"; in 1876-'79, "Frank Leslie's Sunday Magazine"; and from 1883, "Christian Thought," the organ of the Institute of Christian Philosophy. He published "Triumph of Peace, and Other Poems" (New York, 1840); "Life of Adam Clarke, LL. D." (1840); "Devotional Melodies" (Raleigh, 1842); "Twelve College Sermons" (Philadelphia, 1844); "The Home Altar" (New York, 1850); "What Now?" (1853); "Hymns for All Christians" (1869; new edition, 1881); "Forty Sermons preached in the Church of the Strangers" (1871); "Jesus" (1872; new edition, and title changed to "The Light of the Nations," 1880); "Weights and Wings" (1872); "Sermons" (1885); "The Gospel of Common Sense"; "The Gospel of Spiritual Insight"; "Chips and Chunks for Every Fireside"; and "My Septuagint" (1892).

**De Mille, Henry Churchill**, dramatist, born in North Carolina, in 1850; died in Pompton, N. J., Feb. 10, 1893. He was graduated at Columbia College in 1875, and for three years taught in Lockwood Academy, Brooklyn, being also vice-principal there the most of the time. From 1878 till 1882 he taught in the Columbia College Grammar School, and was then appointed examiner of plays in the Madison Square Theater. In 1883 his first play, "Delmar's Daughter," was produced at that theater, and in the following year his second, "Sealed Instructions." He also appeared on the stage in 1884 in "Young Mrs. Winthrop." The same year he formed a partnership with Charles Barnard, and "The Main Line" was produced. His next partnership was with David Belasco, and resulted in a series of successful plays, including "The Wife," "Lord Chumley," "The Charity Ball," and "Men and Women." He personally adapted "The Lost Paradise" from the German.

**Densmore, Amos**, inventor, born in Rochester, N. Y., in 1824; died in New York city, Oct. 14, 1893. He was employed for several years with his father in



running a sawmill and wooden bowl factory; in 1862 joined four brothers in operating oil wells in Oil Creek, Pa.; in 1866 began to manufacture oil tanks for transportation by railroad according to an original invention; was associated with his brother James in inventing the present Remington typewriter; and, after receiving royalties thereon till 1886, sold out his interest, and introduced the Densmore typewriter, of which he was the principal inventor.

**Dodge, John Wood**, painter, born in New York city, in 1806; died in Pomona, Tenn., Dec. 17, 1893. In early life he became a painter of miniature portraits on ivory, and he followed that art till it was superseded by photography. During this period he painted portraits of Andrew Jackson, Henry Clay, and other public men. For several years prior to the civil war he was engaged in the nursery business in the Cumberland mountain region of Tennessee; but his Union sentiments made that locality inhospitable during the war, and he removed to New York city, and when nearly sixty years old resumed painting. Two years afterward he settled in Chicago, where he remained till his return to his old Southern home. After many years of miniature work, he undertook larger portraits in oil, and his last canvas exhibited at the National Academy of Design was a life-size portrait of Henry Bergh. His last work, a unique composite picture, was finished in his eighty-eighth year, and is now in the collection of William Ziegler, of New York city.

**Doolittle, Theodore Sanford**, educator, born in Ovid, Seneca County, N. Y., Nov. 30, 1836; died in New Brunswick, N. J., April 18, 1893. He received his preliminary education at Ovid Academy, and was graduated at Rutgers College in 1859, and at the New Brunswick Theological Seminary in 1862. After spending two years as pastor of the Reformed Church in Flatbush, Long Island, he became Professor of Rhetoric, Logic, and Metaphysics in Rutgers College in 1864, and held the chair till his death. He had also been vice-president of the institution since 1890, and several times acting president. He received the degree of D. D. from Wesleyan University in 1872, and LL. D. from Union College in 1891. Dr. Doolittle was one of the founders of "The Rutgers Quarterly," now "The Targum"; was an editor of "The Christian at Work," and its regular expounder of the International Sunday-school Lessons; had published "An Account of the Centennial Celebration at Rutgers College" (1870); a "History of Rutgers College" (United States Bureau of Education), and "Across the Continent," and left a more extended history of the college in manuscript.

**Doubleday, Abner**, military officer, born in Ballston Spa, N. Y., June 26, 1819; died in Mendham, N. J., Jan. 26, 1893. He was graduated at the United States



Military Academy and appointed a brevet 2d lieutenant in the 3d United States Artillery in 1842; was promoted 2d lieutenant 1st Artillery, Feb. 24, 1845; 1st lieutenant, March 3, 1847; captain, March 3, 1855; major 17th Infantry, May 14, 1861; lieutenant-colonel, Sept. 20, 1863; colonel 35th Infantry, Sept. 15, 1867; assigned to the 24th Infantry, Dec. 15, 1870; and was retired Dec. 11, 1873. He was brevetted lieutenant-colonel, Sept. 17, 1862; colonel, July 2, 1863; and brigadier-general and major-general, March 13, 1865. His first active service was with the 1st Artillery, with which he was connected through the Mexican War, and

distinguished himself in the battle of Monterey and in the operations preceding and during the battle of Buena Vista. In 1852 he was appointed by the United States Senate a commissioner to go to Mexico and investigate an alleged fraudulent claim, and on his return was voted the thanks of Congress. He was also president of an important military commission in Philadelphia ordered by the War Department. During 1856-'58 he was in the Seminole campaign in Florida, and in 1861 was second in command in Fort Sumter during its first bombardment, and was given by Major Anderson the honor of sighting and firing the first gun in its defense. After the evacuation and his transfer to the infantry, he served first in the Shenandoah Valley and then in the defense of Washington, where he commanded the forts and batteries on the Potomac. In the early part of 1862 he commanded a brigade on the Rappahannock, and from May till September one in the northern Virginia campaign, including the second battle of Bull Run. In the battle of Antietam he was at the head of the division which held the extreme right of the line, opened the battle, and captured 6 flags. He was commissioned a major-general of volunteers, Nov. 29, 1862. At the battle of Chancellorsville he succeeded Gen. John F. Reynolds as commander of the 1st Army Corps, when that officer was appointed to the head of the right wing. At Gettysburg, on the first day, he was ordered to re-enforce Gen. Buford's cavalry on the ridge west of the seminary, and when Gen. Reynolds was killed Gen. Doubleday took his place temporarily, and under him the 1st Corps captured Archer's brigade and the greater part of Davis's brigade, and almost annihilated that of Iverson. On the second day he assisted in regaining an important position the enemy had captured, together with 6 guns. On the third day, when Gen. Pickett was making his great charge, Gen. Doubleday's front line suddenly wheeled and covered a vulnerable point so effectively that the advance of the Confederates was repulsed. After the war he was in command at Galveston, and superintendent of the general recruiting service in San Francisco. In April, 1865, on invitation from the War Department, he accompanied the expedition that raised over Fort Sumter the same flag that had floated there during the first bombardment. Gen. Doubleday published several works on military and sanitary matters, including "Reminiscences of Forts Sumter and Moultrie in 1860-'61," and "Chancellorsville and Gettysburg." He was an accomplished French and Spanish scholar, and had become deeply interested in the study of Sanskrit.

**Doubleday, Ulysses**, military officer, born in Auburn, N. Y., Aug. 31, 1824; died in Tryon, N. C., Feb. 11, 1893. He was a brother of Gen. Abner Doubleday; received an academical education; and entered the banking business in New York city. At the beginning of the civil war he went to the field with the 4th New York Artillery, of which he was commissioned major in January, 1862. On Sept. 15, 1863, he was appointed lieutenant-colonel of the 3d United States Colored Infantry, and on Oct. 8, 1864, colonel of the 45th Colored Infantry. He commanded a brigade in the battle of Five Forks, and for distinguished gallantry there was brevetted brigadier-general on March 11, 1865. After the war he was a member of the Stock Exchange in New York city till 1882, when he removed to the pine region of North Carolina for his health, and there engaged in lumbering and building. He contracted his fatal illness while attending his brother's funeral. He built a portion of the city of Asheville, which is named Doubleday after him.

**Drexel, Anthony Joseph**, banker, born in Philadelphia, Pa., in 1826; died in Carlsbad, Bohemia, June 30, 1893. He was the second son of Francis Martin Drexel, founder of the banking house of Drexel & Co., in Philadelphia; was educated in his father's counting room; and on the death of the elder Drexel, in 1863, Anthony Joseph and his oldest brother Francis succeeded to the management and greatly enlarged the scope of the business. The firm have



been known all over the world for their large operations. In 1876 it united with the Rothschilds and other great financial houses in forming a syndicate which placed on the market for the United States Government \$300,000,000 in 4½-per-cent. bonds; in 1878 the same syndicate took and placed \$50,000,000 more bonds; in 1879 it bought outright \$15,000,000 worth of New York Central Railroad stock; in 1886 the firm became members of the American committee of the syndicate formed for building the Panama Canal; in 1886 also it undertook the sale of \$20,000,000 of the bonds of the Louisville and Nashville Railroad Company; and in 1891, in connection with the Brown Brothers, it negotiated the entire loan of \$9,500,000 which the Philadelphia and Reading Railroad Company required to carry out its scheme of reorganization. Mr. Drexel was a man of large and studied benevolence, and was a promoter of numerous institutions in his State and city that appealed to his sympathy. His most noted benefaction was the establishment in Philadelphia of the Drexel Institute of Art, Science, and Industry, for both sexes, which was dedicated Dec. 17, 1891. The land and buildings cost \$550,000, and he gave the institution an endowment fund of \$1,000,000. He bequeathed \$1,000,000 to trustees, with directions to pay \$100,000 to the German Hospital in Philadelphia; to use the income of the remainder for the erection of an art gallery, museum, or other public institution in connection with the Drexel Institute; and, in case the projected art gallery or museum should not require the whole income, to use the surplus for the establishment of a Drexel Hospital. In connection with George W. Childs, he also founded the Childs-Drexel Home for Aged Printers, in Colorado Springs, Col., which was dedicated May 12, 1892.

**DuPont, A. V.**, philanthropist, born in Wilmington, Del., in 1833; died in Louisville, Ky., May 16, 1893. He was engaged for many years in the manufacture of paper in his native city, and in recent years held a controlling interest in the street railroads of Louisville, and a large interest in those of St. Louis and New Orleans. Shortly before his death he deeded to the city of Louisville a thoroughly equipped manual-training school, of which the building cost \$75,000.

**Dwenger, Joseph**, clergyman, born in St. John's, Ohio, in 1837; died in Fort Wayne, Ind., Jan. 22, 1893. He was educated at Holy Trinity School in Cincinnati; completed his studies for the Roman Catholic priesthood in the Seminary of Mount St. Mary's of the West; was ordained a priest, Sept. 4, 1859; and for three years was a professor and director in the Seminary of the Precious Blood. He was then assigned to missionary work, and for some time was connected with the seminary at Carthage. From 1867 till 1872 he labored among the mission stations in Ohio, Indiana, and Kentucky. On April 14, 1872, he was consecrated second Bishop of Fort Wayne, Ind., and became the youngest member of the hierarchy in the United States. In 1874 he accompanied the American pilgrims to Rome as superior; in 1883 made an official visit thither; in 1884 attended the third Plenary Council in Baltimore; in 1885 went to Rome again as the representative of the American hierarchy; and in 1888 repeated the journey on official business.

**Dwight, John Sullivan**, musical critic, born in Boston, Mass., May 13, 1813; died there Sept. 5, 1893. He was graduated at Harvard College in 1832; took a course in the Divinity School; was pastor of the Unitarian church in Northampton, Mass., for two years; was a founder and active member for five years of the Brook Farm community; and in 1848 returned to Boston and engaged in literature. While at Brook Farm he taught Latin, Greek, German, and music. In Boston he became a contributor to the "Harbinger," the "Dial" (organ of the Transcendentalists), the "Christian Examiner," and other periodicals, writing on literary, philosophical, art, and musical topics. He suggested the establishment of low-priced concerts of orchestra and chamber music, and was a founder of the Harvard Musical Association. On April 10, 1852,

he published the first number of "Dwight's Journal of Music," which he edited nearly thirty years, the last number appearing on July 16, 1881, and for many years this was the only musical journal in the United States. During his career both as editor and lecturer he supported Bach, Handel, and Beethoven, and opposed the music of the future as represented by the works of Wagner, Berlioz, and Rubinstein. He translated the minor poems of Goethe and Schiller; wrote, among other poems, "God save the State"; and at the time of his death was completing Charles C. Perkins's "History of the Handel and Haydn Society, 1815-1890."

**Eastman, Timothy C.**, merchant, born in Croydon, N. H., May 30, 1821; died in Tarrytown, N. Y., Oct. 11, 1893. In early life he was a farmer and carpenter in his native village, and in 1849 removed to Cleveland, Ohio, and began trading in cattle. He established headquarters in New York city in 1859; made his first exportation of meat to England, consisting of 50 carcasses of beef and a few sheep, in 1875; and organized companies in the United States and in England to carry on the business in 1889.

**Edgerton, Joseph Ketchum**, lawyer, born in Chazee, Vt., Feb. 16, 1818; died in Boston, Mass., Aug. 25, 1893. He studied law in New York city, and in 1839 was admitted to the bar. In 1844 he removed to Fort Wayne, Ind., which place was his residence until his death, and there he formed a law partnership with Gov. Samuel Bigger. In 1855 he was elected President of the Fort Wayne and Chicago Railroad, then in process of construction and greatly embarrassed. He proposed its consolidation with three other lines, under one corporation, from Pittsburg to Chicago, since known as the Pittsburg, Fort Wayne and Chicago Railway, and this union secured the completion of the entire line and its subsequent great prosperity. He was elected vice-president of the consolidated company, and in 1857 and 1858 he was its financial agent in New York. In 1859 he had charge of its legal department, and in the same year was appointed receiver of the company, which office, in order to compromise differences, he later resigned in favor of William B. Ogden, of Chicago. In politics he had previously been a Whig, but in 1860 he entered the Democratic party, and in 1862 was elected to Congress. In 1866, on a large tract of land which he owned in Allen County, Ind., he established the Woodburn Lumber and Stave Mills. In the same year he became President of the Grand Rapids and Indiana Railroad Company, then greatly embarrassed, with a land grant liable to immediate forfeiture, and without a mile of road built. In 1871, after five years of service, he left the company with a restored and protected land grant and 200 miles of road in operation. Between 1860 and 1872 he traveled extensively in Europe and his own country. In 1871 he assisted in establishing the Fort Wayne Steel Plow Works, and later he became their sole owner. He was for many years a member of the vestry of Trinity Episcopal Church, and in 1879 was president of the board of trustees of the Fort Wayne Medical College. After 1862 he did not resume the practice of his profession, and he took no active part in politics after 1865.

**Eichberg, Julius**, musical composer, born in Düsseldorf, Germany, June 13, 1824; died in Boston, Mass., Jan. 19, 1893. He began to play the violin in public when seven years old; was permitted to play before the Emperor Nicholas of Russia at a court concert soon afterward; was educated in Mayence and in the Brussels Conservatory of Music, and took the first prize of the institution for violin playing and composition in 1843. He was Professor of the Violin in the Conservatory in Geneva, and closely identified with the progress of music in that city for eleven years. In 1857 he made a trip to the United States for his health, and from 1859 till 1866 was director of music in the Boston Museum. In 1867 he was appointed director of the newly established Conservatory of Music in Boston, and was also elected supervisor of music in the public schools of the city. Among his



compositions were the operas "The Doctor of Alcantara" (1862), "The Rose of Tyrol," "A Night in Rome," and "The Two Cadis."

**English, Earl**, naval officer, born in Crosswicks, N. J., Feb. 18, 1824; died in Washington, D. C., July 16, 1893. He was appointed a midshipman in the United States navy, Feb. 25, 1840; was commissioned passed midshipman, July 11, 1846; master, March 1, 1855; lieutenant, Sept. 14 following; lieutenant-commander, July 16, 1862; commander, July 25, 1866; captain, Sept. 28, 1871; commodore, March 25, 1880; rear-admiral, Sept. 4, 1884; and was retired, Feb. 18, 1886. During his active career in the navy he was on sea service twenty-seven years and four months, on shore or other duty fifteen years and eleven months, and was unemployed nine years and seven months. He served on the Pacific coast till 1846; through the Mexican War; made a series of deep-sea soundings between Newfoundland and Ireland in 1852; was wounded in the attack on the barrier forts near Canton, China, in 1857; and was on duty in the Gulf of Mexico during the greater part of the civil war. On Feb. 18, 1868, he gave asylum on his ship, the "Iroquois," at Osaka, to the defeated Tycoon of Japan. His last service prior to retirement was as commandant of the European squadron.

**Enochs, William H.**, lawyer, born near Middleburg, Noble County, Ohio, March 29, 1842; died in Ironton, Ohio, July 12-13, 1893. He was brought up on a farm; received a common-school education; enlisted as a private in the Union army in 1861, and was promoted through all the grades to that of colonel and brevet brigadier-general of volunteers; and was graduated at the Cincinnati Law School in 1866. He was elected to Congress in 1890 and 1892 from the 12th Ohio District as a Republican, and served on the committees on public buildings and grounds, and on militia. He was found dead in bed on July 13.

**Evans, Frederick William**, elder of the New Lebanon Shakers, born in Leominster, Worcestershire, England, June 9, 1808; died in Lebanon, N. Y., March 6, 1893. He emigrated to the United States in 1820; was apprenticed to the hatter's trade; and read and studied till, to use his own words, "I became a materialist, a socialist, a land reformer, and an infidel to all the popular church and state religions of Christendom." On finishing his apprenticeship he made a long journey on foot through the West, and went down the Mississippi to New Orleans. During this journey he was converted to the socialistic theories of Robert Owen, and to communism while visiting the community at Massillon, Ohio. In 1829 he returned to England, where he remained a year; then returned to New York, and assisted his brother George, and others, in perfecting plans for a new community. While in search of a suitable location, he visited the United Society of Believers at Mount Lebanon, and was so impressed with the candor, simplicity, and principles of the community that he united with it and "became a Shaker." In 1838 he was chosen elder of the North Family, and in 1858 first elder of 3 of the other families, and he resided with the North Family till his death. During his career as a Shaker he lectured and wrote frequently on the principles, the mission, and the practical results of such communal life. His publications included: "Compendium of Principles, Rules, Doctrines, and Government of Shakers, with Biographies of Ann Lee and Others" (New York, 1859); "Autobiography of a Shaker" and "Tests of Divine Revelation" (1869); "Shaker Communism" (London, 1871); "Religious Communism," a lecture delivered in London (1872); and "Second Appearing of Christ" (1873). He also edited and published, with Antoinette Doolittle, "The Shaker and Shakeress," a periodical (1873-'75). His "Autobiography of a Shaker" was first published in the "Atlantic Monthly."

**Farmer, Moses Gerrish**, electrician, born in Boscawen, N. H., Feb. 9, 1820; died in Chicago, Ill., May 25, 1893. He was graduated at Dartmouth College, where he had given special attention to chemistry and elec-

tro-magnetism, in 1844, and spent two years teaching in Elliot, Me., and Dover, N. H., and in lecturing. While in Dover he invented several forms of electro-motors, one of which he used on a miniature railway and another to drive a vertical lathe in his experimental workshop. Both of these motors were devised primarily to illustrate his lectures on electro-magnetism, in which he also showed that the electric current could be used for discharging torpedoes and in submarine blasting. On his miniature railway he carried the first passengers ever transported by electricity in this country. About this time he also constructed an electric clock, and invented the sickle-shape climbers for telegraph linemen. In 1847 he removed to Framingham, Mass., and there in the following year invented the telegraph fire alarm with its striking machine. In 1851 he planned and built the telegraph fire-alarm system in Boston, which was the pioneer of the system now in general use, and on finishing it was appointed its superintendent. The following year he built a telegraph line for Prof. A. D. Bache, of the United States Coast Survey, connecting the Cambridge Observatory with the Boston office, and constructed for the late Admiral Wilkes a chronograph designed to determine the velocity of sound. An electro-magnetic drill for stonework, the synchronous multiplex telegraph, and the multiple system of vats in series for the electro-deposition of copper and other metals, were invented and constructed in 1853. In 1856 he invented the printing telegraph; in 1858, a system of duplex telegraphy; in 1859, patented another form of the duplex telegraph, and illuminated his house in Salem with the incandescent electric light on a plan of his own; in 1865, invented a thermo-electric battery and constructed the first dynamo machine; in 1872, invented the four-function relay for the guidance of the Lay movable torpedo; in 1874, patented an adjusting electric lamp with carbon points; in 1880, patented an automatic electric-light system; and in 1881, invented an electric motor for use on elevated railways. From 1872 till 1881 he was electrician at the United States Naval Torpedo Station at Newport, R. I. At the time of his death he was examining at the Columbian Exhibition the triumphs of the science he had made his life study and done so much to promote.

**Farwell, Nathan Allen**, lawyer, born in Unity, Me., Feb. 24, 1812; died in Rockland, Me., Dec. 9, 1893. He received a common-school education, followed the sea for several years, was admitted to the bar and settled in Rockland to practice, and entered political life about 1850. In 1854, 1861, and 1862 he was elected to the State Senate as a Republican in 1860, 1863, and 1864 to the Lower House; and in 1861 was President of the Senate. He was a delegate to the National Republican Convention in Baltimore in 1864, and to the Loyalists' Convention in Philadelphia in 1866, and from Dec. 5, 1864, till March 3, 1867, he filled the vacancy in the United States Senate caused by the resignation of William Pitt Fessenden. For many years before his death he was largely interested in the shipping trade and in marine insurance.

**Feuardent, Gaston L.**, archaeologist, born in Cherbourg, France, in 1843; died in New York city, June 12, 1893. His grandfather was a noted antiquary, and his father is now an art dealer in Paris and an expert in antiquities for the Louvre. Gaston was associated with his father till 1868, when he went to London and represented him there till 1876, being employed for a considerable period by the British Museum as an expert in numismatics. He removed to New York city in 1876, became a member of the Numismatic Society in the following year, and for many years was engaged in business as a dealer in coins and antiquities. At the request of the late Lieutenant-Commander Gorringe, he examined critically the coins found at the site of the obelisk, now in Central Park, and wrote a valuable monograph on them and on the inscriptions on the obelisk. In 1884 he attacked the authenticity of the Ctesnola Cyprian collection in the Metropolitan Museum of Art, and lost a suit for libel that



was brought against him in consequence. He was an enthusiast in his studies, and was familiar with the numismatic and antiquarian collections of all the large museums in Europe.

**Field, Benjamin Hazard**, philanthropist, born in Yorktown, N. Y., May 2, 1814; died in New York city, March 17, 1893. He received an academical education; removed to New York city, and entered his uncle's mercantile office in 1831; became a partner in the firm in 1832; assumed the entire management in 1838; admitted his son, Cortlandt De P. Field, into partnership in 1861; and retired from the business soon afterward. From that time till his death he applied himself to philanthropic work. He was active in founding the Home for Incurables in Fordham, and was its president till his death; was president for many years of the New York Eye and Ear Infirmary, of the New York Historical Society, and of the St. Nicholas Society; was Vice-President of the American Society for the Prevention of Cruelty to Children, of the Sheltering Arms, and of the Children's Fold; was a founder and for several years President of the New York Free Circulating Library; and was a trustee or director of the Roosevelt Hospital, the American Museum of Natural History, the Good Samaritan Dispensary, the New York Institution for the Instruction of the Deaf and Dumb, the Working Women's Protective Union, and of other charitable institutions. To all these institutions he gave liberally of his time and means. He also spent more than \$100,000 in erecting and maintaining a public school near his birthplace. Mr. Field was a Fellow of the American Geographical Society, and the senior member of the New York Chamber of Commerce.

**Fischer, Gustavus**, educator, born in Berlin, Germany, in June, 1815; died in New Brunswick, N. J., Sept. 16, 1893. He was educated at the Universities of Berlin and Göttingen, making specialties of law, philosophy, philology, and music, and in 1848, on the breaking out of the revolution, entered political life and was elected to Parliament. On the dispersion of the "rump" Parliament he removed to Switzerland, whence he came to the United States in 1850. In 1858 he was appointed Professor of Modern Languages in Rutgers College, and also became teacher of French and German in a private seminary for young ladies in New Brunswick. He held his chair in the college till 1869, and on resigning spent the remainder of his life in musical study.

**Fish, Hamilton**, statesman, born in New York city, Aug. 3, 1808; died in Garrison's, N. Y., Sept. 7, 1893. He was a son of Nicholas and Elizabeth Stuyvesant Fish, received his early education at private schools,

was graduated at Columbia College in 1827, and was admitted to the bar in 1830. In 1834 he entered into active political life by becoming the Whig candidate for the Legislature and meeting defeat. Eight years afterward he was elected to Congress from the 6th District over John McKeon, the Democratic candidate. Toward the end of this term William W. Campbell, who represented the Native American ideas, was nominated by the Whigs as his suc-

cessor, and Mr. Fish was persuaded by his friends to stand as an independent candidate, and as such he was defeated. In 1846 he received the Whig nomination for Lieutenant-Governor on the ticket with John Young for Governor. Mr. Young was elected, but Mr. Fish, who had denounced the principles of the antirenters, was defeated. In the following year his successful Democratic competitor, Addison Gardiner, was appointed a judge of the

State Court of Appeals, and, resigning the office of Lieutenant-Governor, Mr. Fish was chosen in his place. In 1848 he defeated John A. Dix and Reuben H. Walworth for Governor, the former representing the Van Buren and the latter the Cass Democracy, and in 1851 was elected United States Senator to succeed Daniel S. Dickinson. In the Senate he acted with the Republican party and opposed the repeal of the Missouri Compromise. At the close of his term he undertook to retire from public life, and went to Europe, but returned shortly before the beginning of the civil war, and took an active part in the presidential campaign in favor of Abraham Lincoln, though he had been known as a supporter of William H. Seward. In January, 1862, Secretary Stanton appointed Bishop Ames and Mr. Fish commissioners to relieve the sufferings of the Union soldiers imprisoned in Richmond and elsewhere, and, though the Confederate authorities refused to allow them to pass the lines, their mission was productive of great good, in that it led to a system for exchanging prisoners which was observed to the close of the war. In 1868 Mr. Fish was conspicuous among those who advocated the choice of Gen. Grant for the presidency, and he bore an influential part in the campaign. After his inauguration, President Grant first appointed Elihu B. Washburn his Secretary of State. A week later Mr. Washburn was appointed minister to France, and, resigning the portfolio of State, was succeeded by Mr. Fish. By re-appointment Mr. Fish held the office till March 12, 1877, and then retired to private life. On Feb. 9, 1871, he was appointed one of the commissioners on the part of the United States to negotiate the treaty of Washington, which he signed on May 8. When the Geneva tribunal was arbitrating the "Alabama claims," he procured the adoption by the tribunal of a rule providing that the United States Government should not be held responsible for indirect damages arising from Fenian raids or Cuban filibustering expeditions. He effected a settlement of the long-standing boundary dispute with Great Britain, by which the United States received the island of San Juan, and in November, 1873, negotiated with the Spanish minister in Washington a settlement of the international contentions growing out of the "Virginian" affair. He also successfully resisted the effort of Great Britain to change the terms of the extradition treaty. Early in his career as secretary he formulated a system of examinations for applicants for appointment to consular offices, to test their knowledge of subjects connected with consular service. Mr. Fish was an original trustee of the Peabody Educational Fund, President of the New York Historical Society, President-General of the Society of the Cincinnati, and President of the Board of Trustees of Columbia College. He bequeathed \$50,000 to Columbia College unconditionally, \$5,000 to St. Luke's Hospital, and \$2,000 to the Bellevue Training School for Nurses.

**Fisher, George Jackson**, physician, born in Westchester County, N. Y., Nov. 27, 1825; died in Sing Sing, N. Y., Feb. 3, 1893. He was graduated at the Medical Department of the University of the City of New York in 1849, and had resided in Sing Sing since 1851. In 1874 he was elected President of the State Medical Society, and in 1876 was a delegate from the society to the International Medical Congress in Philadelphia. He had served several times as a volunteer surgeon for the United States Sanitary Commission during the civil war; was for more than twenty years a brigade surgeon of the National Guard of New York, and a United States examining surgeon in the Pension Bureau; and had collected a library and private museum which were widely known in medical and surgical circles. Dr. Fisher was author of many works, including "Biographical Sketches of Deceased Physicians of Westchester County," "Animal Substances employed as Medicines by the Ancients," "A Brief History of the Discovery of the Circulation of the Blood," "Teratology," and "History of Surgery." He died from blood poisoning following a surgical operation.





**Fox-Kane, Margaret**, spiritualist, born in Bath, Canada, in 1836; died in Brooklyn, N. Y., March 8, 1893. She was the last of the famous Fox sisters, formerly widely known as spiritualistic mediums. In 1847 her father removed to Hydeville, N. Y., with his wife and daughters, Leah, Margaret, and Catharine (see FOX-JENCKEN, CATHARINE, in the "Annual Cyclopædia" for 1892, page 546), and soon afterward, it was alleged, they began to hear mysterious rappings in various parts of their house. On the night of March 31, 1848, while a terrific gale was raging, the rappings were of unusual frequency and vigor, and while the parents were searching the house for a cause Margaret declared that she saw a spirit, and that as often as she motioned it rapped. The mother inquired the ages of her children, and the correct number of years was successively announced by distinct raps. Neighbors and friends of the family were called in, and, as no cause could be discovered, it was decided to send Margaret and Catharine to the home of their sister Leah who had married and settled in Rochester. The alleged effect was that the rappings continued in the Hydeville house, and also began in the Rochester house. Both curiosity and excitement followed the announcement of the manifestations; visitors began crowding the house, forcing the sisters to hold regular *séances*, and the mystery of the "Rochester rappings" attracted the attention of investigators and scientists from all parts of the United States and from Europe. It was said that the sisters had the power of discovering murderers, revealing a variety of mysteries, and forecasting events. Their fame so increased that they were induced to travel, and they gave many *séances* in the United States and abroad. Leah died in November, 1890, and Catharine in July, 1892. In 1856 Margaret became acquainted with Dr. Elisha Kent Kane, the arctic explorer, and subsequently she claimed that she had been married to him according to the Quaker rite, though his relatives never acknowledged the marriage. About the time of her alleged marriage Margaret withdrew from public life, and lived for several years on property left her by Dr. Kane, while Catharine continued the *séances* interruptedly till about 1888. In that year Margaret published an "exposure," in which she declared that the rappings had been produced by means of a dislocated big toe on one of her feet, frequent practice having enabled her to produce audible sounds at will. This exposure was subsequently retracted, and the remainder of her life was passed in destitution, relieved by the kindness of the friends among whom she died.

**Francis, Joseph**, inventor, born in Boston, Mass., March 12, 1801; died in Cooperstown, N. Y., May 10, 1893. He showed a marked interest in boat-building early in life; exhibited a fancy boat of his own construction at a fair when eleven years old, and won a prize with another in a public competition when eighteen. Soon afterward he was employed by the Navy Department at the Portsmouth Navy Yard to build wooden life-boats for the frigate "Santee" and the battle ship "Alabama." His work there gave him a high reputation, and greatly stimulated his natural gift for invention. In 1842 he



invented and constructed a metallic life car, the first one ever built, and, failing to dispose of it satisfactorily to the Government, he sent it to the New Jersey coast, near Long Branch, and kept it in service at his own expense. There was no occasion to use it till

in January, 1850, when the British emigrant ship "Ayrshire" was wrecked on Squan Beach in a violent storm, and then it was the means of saving 200 out of a total of 201 persons on the vessel. He then extended the application of corrugated metal to the construction of steamboats, floating docks, harbor buoys, and pontoon wagons, receiving decorations, valuable presents, and other honors from various European sovereigns, and having scarcely any notice of his work taken officially in his own country. It was not till age had compelled him to cease work that the United States Government sought to do him honor. On Aug. 27, 1888, Congress passed an act ordering the striking of a special gold medal for presentation to him as "the inventor and framer of the means for the life-saving service of the country." This medal, which cost \$3,000, was presented to him by President Harrison in the Blue Parlor of the White House on April 12, 1890. A further honor was extended to him on April 1, 1892, when the United States Senate unanimously voted him the freedom of its chamber, and suspended business to give him a reception.

**Frazer, James Somerville**, jurist, born in Hollidaysburg, Pa., July 17, 1824; died in Warsaw, Ind., Feb. 20, 1893. He removed to Wayne County, Ind., in 1837, defrayed the cost of his legal education by teaching, and was admitted to the bar in 1845, settling in Warsaw to practice. In 1847, 1848, and 1854 he was a member of the State Legislature, and in his last term was chairman of the committee that prepared the bill that became the present public-school law of Indiana. In 1851 he was elected prosecuting attorney for his county; in 1862 was appointed assessor of internal revenue; and from 1865 till 1871 was a judge of the Supreme Court of the State. Under the treaty of 1871 between the United States and Great Britain, President Grant appointed him one of the commissioners on the part of the United States to adjust claims for and against the British Government for damages growing out of the civil war. Judge Frazer was also in the employ of the United States Treasury Department from 1873 till 1875 in the adjustment of claims for cotton captured or destroyed by the National troops during the war. In 1879, 1880, and 1881 he was one of three commissioners employed, under appointment by the Supreme Court, in revising and codifying the laws of Indiana.

**Fryer, Pauline Cushman**, scout, born in New Orleans, La., June 10, 1833; died in San Francisco, Cal., Dec. 2, 1893. She was of Spanish parentage, and for several years before the civil war was an actress of much popularity on the variety stage, especially in the South. Her intimacy with the roads in Tennessee, Georgia, Alabama, and Mississippi made her a valuable aid to the National armies. She entered the service as a scout and spy, and for some time afterward continued her theatrical performances in Southern States to enable her to gain information of contemplated Confederate movements. In May, 1863, she was captured while in the Confederate lines in Tennessee, and was tried by court-martial and condemned to be hanged; but before the day set for her execution the National troops drove the Confederates out of Shelbyville, where she was imprisoned, and released her. She rendered very important service to the Army of the Cumberland, and was widely known as Major Pauline Cushman. After the war she lectured, and wrote a book on her war experiences, and a few years before her death she married her second husband, James Fryer, of Arizona.

**Garrett, Emma**, educator, born about 1848; died in Chicago, Ill., July 18, 1893. She was the Principal of the Home for the Training in Speech of Deaf Children in West Philadelphia, and had achieved such success in her special work that she was induced to remove her entire school to Chicago, where it constituted one of the most striking exhibits in the educational department of the exposition. She had been engaged in this line of instruction for fifteen



years, and had served in the Institution for the Deaf and Dumb in Philadelphia, in a special branch school, and as Principal of the Pennsylvania Oral School for the Deaf, which was established by philanthropic citizens expressly for her, and which was awarded a medal by the judges of the Paris Exposition of 1889. For nearly two years she had been in charge of a home at Bala, West Philadelphia, which was conducted on advanced features of her original and unique plan. A severe siege of nervous prostration, increased by the excitement of the exposition, affected her mentally and led to suicide.

**Genth, Frederick Augustus Louis Charles William**, chemist, born in Waechtersbach, Hesse-Cassel, May 17, 1820; died in Philadelphia, Pa., Feb. 2, 1893. He was descended from an old Hessian family, and his father



was a Government official having charge of the forests. From boyhood his powers of observation were trained by his father, who encouraged his growing interest in botany, mineralogy, and other natural sciences. His early education was obtained at the gymnasium in Hanau, whence in 1839 he passed to the

University of Heidelberg. Two years later he went to Giessen, studying there under Liebig, and then to Marburg, where he completed his studies under Bunsen, and in 1846 received the degree of Ph. D. He was then appointed *privat-docent* and continued at Marburg for nearly three years, serving also as assistant to Bunsen. In 1848 he resigned his university appointment and came to the United States, establishing himself in Philadelphia as an analytical chemist. Soon afterward he was called to the charge of the Washington mines, Davidson County, N. C., where he remained till 1851. He then returned to Philadelphia and resumed his practice as an analyst. In 1872 he became Professor of Chemistry and Mineralogy in the University of Pennsylvania, which chair he held until 1888. Prof. Genth was chemist to the Geological Survey of Pennsylvania, and also from 1877 to 1884 he served in similar capacity the Pennsylvania Board of Agriculture. He served as a juror on chemical matters at the World's Fair held in Philadelphia in 1876. In 1875 he became a member of the American Association for the Advancement of Science, and in 1888, at the request of the chemical section, was made a fellow of the association. In the domain of mineral chemistry he was easily the first authority in the United States, and his "Contributions to Mineralogy," fifty-four in number, originally published in Liebig's "Annalen," were, subsequent to his arrival in the United States, contributed to the "American Journal of Science." The identification of 23 new mineral species was due to his researches. In the "American Contributions to Chemistry," Benjamin Silliman says that he "has no superior in this country as an analytical chemist." The ammoniacobalt bases, originally discovered by him in 1846, were subsequently more fully studied with Wolcott Gibbs, and in joint authorship they published "Researches on the Ammonia-Cobalt Bases" (Washington, 1856), forming a portion of the ninth volume of the "Smithsonian Contributions to Knowledge." His separate papers were over one hundred in number, and included the following larger works: "Tabellarische Uebersicht der Wichtigsten Reactionen welche Basen in ihren Salzen zeigen" (Marburg, 1845); also the same in relation to "Acids" (1845); "Minerals of North

Carolina," being Appendix "C" of the "Report on the Geology of North Carolina" (Raleigh, 1875); "First and Second Preliminary Reports on the Mineralogy of Pennsylvania" (Harrisburg, 1875-'76); "Minerals and Mineral Localities of North Carolina" (Raleigh, 1881); and "Minerals of North Carolina," being Bulletin No. 74 of United States Geological Survey (Washington, 1891).

**Gibbons, Abby Hopper**, philanthropist, born in Philadelphia, Pa., Dec. 7, 1801; died in New York city, Jan. 10, 1893. She was a daughter of the late Isaac T. Hopper, a well-known abolitionist and philanthropist, and the widow of James Sloan Gibbons (see "Annual Cyclopædia" for 1892, page 548). She was of Quaker parentage and devoted her life to educational and benevolent work, taking a special interest in matters relating to hospital management. She labored earnestly to promote the welfare of the colored people before, during, and after the civil war, and because of the prominence in this work of her husband and herself their home in New York city was sacked by a mob during the draft riots in 1863. She aided her father in planning and establishing the Women's Prison Association and the Isaac T. Hopper Home, and was a manager of the New York Infant Asylum and the Diet Kitchen Association. Largely through her persistent efforts the New York Legislature established the State Reformatory for Women and Girls, and authorized the appointment of matrons in police stations to look after female prisoners. As long as her strength permitted she visited regularly the institutions in which she was interested.

**Giles, Chauncey**, clergyman, born in Charlemont, Mass., May 11, 1812; died in Philadelphia, Pa., Nov. 6, 1893. He was educated at Williams College, spent three years in teaching in his native State, and from 1836 till 1852 conducted private schools in various towns in Ohio. In the latter year he was ordained into the first grade of the ministry of the Church of the New Jerusalem in Cincinnati, where he preached for ten years. In 1858 he was elected President of Urbana University; in 1863 was consecrated as ordaining minister (now known as general pastor) in Philadelphia; in 1864-'78 was pastor of the New Jerusalem Church in New York city; and from 1878 till his death pastor of the First Church in Philadelphia. He was chosen president of the General Convention of the Church in 1875, and had been re-elected annually ever since. He was also for some years editor of the "New-Church Messenger" and the "Children's New-Church Magazine." Mr. Giles was a forcible and prolific writer. More than 200 of his sermons have been published in tract and book form, and several of them, including "Man as a Spiritual Being" (1868), were translated into foreign languages and widely circulated.

**Goddard, Thomas Poynton Ives**, philanthropist, born in Providence, R. I., in 1833; died there, March 30, 1893. Under the firm name of Goddard Brothers, he was associated with three brothers in cotton manufacturing in the Blackstone valley, and in numerous manufacturing and business interests in Massachusetts and other States. All the brothers became very wealthy, and gave liberally to local charitable and educational institutions. Thomas was a founder of the Rhode Island Hospital and of the Butler Hospital for the Insane; was a fellow of Brown University; and was an officer in several financial institutions and in organizations connected with the Protestant Episcopal Church.

**Goebel, Henry**, electrician, born in Springer, Hanover, Germany, April 20, 1818; died in New York city, Dec. 4, 1893. He was apprenticed to a watchmaker and optician, invented many devices in the mechanism of clocks and watches and experimented with optical instruments of his own construction, and became interested in electricity while attending the Hanover Technical School. In 1849 he removed to New York city, and in the following year resumed experimenting with incandescent lights. His first lamps were made from cologne bottles with a thick



wire, subsequently replaced by a thin copper one, inside. As this arrangement worked unsatisfactorily, he sought a substitute for the wire filament, and by a chance incident discovered that a piece of carbonized wood, used instead of a strip or loop of wire, would produce an excellent light. To secure a perfect vacuum in the bottles he invented a mercury pump. While the piece of wood gave him the light he sought, he found that it was apt to become broken by expansion or contraction under changes of the temperature; and to overcome this difficulty he conceived the idea of making his carbonized-wood filaments in the shape of a horseshoe or a hairpin. Before the civil war he constructed a telescope 20 feet long with an 18-inch object glass, mounted it on a wagon provided with a battery and a row of his electric lamps, and when business was dull gave exhibitions in the vicinity of Union Square or Cooper Institute. In 1881 he became interested in a company organized to manufacture electric lamps, but it soon failed for lack of capital. In January, 1893, in one of the many suits brought by the Edison Electric-Light Company against other corporations, for infringement of patents, it was set up as a defense that Goebel, and not Edison, was the inventor of the incandescent electric lamp, and the foregoing statements, among others, were made in support of the allegation. Mr. Goebel personally asserted that he had made the lamps before Mr. Edison was born; and in the case of the Edison Company against the Columbia Incandescent Company of St. Louis, it was claimed that Judge Hallett had expressed his belief that Goebel was twenty-five years ahead of Edison in the invention. The question of priority of invention had not been judicially settled at the time of this writing.

**Goodwin-Talcott, H. Bradbury**, author, born in Chesterville, Me., in 1827; died in Boston, Mass., June 1, 1893. Before her marriage to George C. Goodwin she wrote stories and sketches over the initials H. F. B., and subsequently published the novels "Madge," "Sherbrooke," "Dr. Howell's Family," "One Among Many," "Christine's Fortune," and "Dorothy Gray." Many of her works appeared in the "Wingood Series." She had taught school in Bangor, Me., been Principal of the Charlestown (Mass.) Female Seminary, and traveled and studied in England, France, Germany, Italy, and Spain. During the last sixteen years she had been intimately associated with Wellesley College.

**Gould, Walter**, painter, born in Philadelphia, Pa., in 1829; died in Florence, Italy, in January, 1893. He studied painting with Thomas Sully and J. R. Smith; was elected to the Artists' Fund Society of Philadelphia in 1846; had studios in Philadelphia and in Petersburg, Va.; and went to Europe in 1849, where he passed the remainder of his life. He had spent many years in Asia Minor and in Constantinople, and for more than forty years had lived in Florence, painting portraits and original compositions on Oriental subjects. He was the *doyen* of the American art colony of Florence in Howells's novel "Indian Summer."

**Gregg, Alexander**, clergyman, born in Society Hill, S. C., Oct. 8, 1819; died in Galveston, Texas, July 11, 1893. He was graduated at South Carolina College in 1838, began studying law, was admitted to the bar, and became a candidate for orders in the Protestant Episcopal Church in 1843. In 1846 he was ordained deacon, and in the following year priest, and was rector of St. David's Church in Cheraw, S. C., till 1859, when he was elected first Bishop of Texas, an office he held till his death. In 1857-'59 he was a clerical trustee of the University of the South from South Carolina, and for many years he was also its proctor. In 1874 the diocese of Texas, which had comprised the whole State, was divided, two missionary jurisdictions being set off, and his diocese reduced to its present dimensions. His many writings include "History of Old Cheraw" (1867); "A Brief Sketch of the Church in Texas" (1884); two triennial charges; and special sermons and addresses.

**Green, Norvin**, executive officer, born in New Albany, Ind., April 17, 1818; died in Louisville, Ky., Feb. 12, 1893. As a boy he was engaged in flat-boating on the Mississippi river, and subsequently earned money to pay for a medical education by chopping wood on a large contract. He was graduated in medicine at the University of Louisville in 1840, and practiced in that city for several years. He then entered political life, and served three years in the Legislature as a Democrat. In 1853 he was appointed a United States commissioner in charge of the building of the customhouse and post-office in Louisville, and about the same time became one of the lessees of the telegraph line between Louisville and New Orleans. Subsequently he was elected President of the Southwestern Telegraph Company, and when it was merged into the American Telegraph Company he was elected vice-president. In 1866 the American, United States, and Western Union lines were consolidated, and Dr. Green was vice-president till April 23, 1878, when he succeeded William Orton in the presidency and held the office till his death.

**Groome, James Black**, lawyer, born in Elkton, Md., April 4, 1838; died in Baltimore, Md., Oct. 4, 1893. He was educated at the College of New Jersey, studied law with his father, and was admitted to the bar in 1861. He made rapid progress in his profession; became an active worker in the Democratic party; was elected to the State Constitutional Convention in 1867, and to the Legislature in 1871 and 1883; was a Liberal presidential elector in 1872; and was chosen by the Legislature to fill the unexpired term of Gov. William Pinckney White, who had been elected United States Senator, in 1874. On March 4, 1879, he entered the United States Senate, where he served the full term of six years, and on its expiration was appointed collector of the port of Baltimore.

**Hagen, Hermann August**, entomologist, born in Königsberg, Prussia, May 30, 1817; died in Cambridge, Mass., Nov. 9, 1893. He was graduated in Medicine at the University of Königsberg in 1840; continued his studies in Berlin, Vienna, and Paris, and began practicing in his native city in 1843. For several years he had also studied entomology, and in 1834 published his first paper on "Prussian Odontata." In 1867 Prof. Louis Agassiz invited him to take charge of the entomological department in the Museum of Comparative Zoölogy in Cambridge. In 1870 he was chosen Professor of Entomology in Harvard University, and held that chair till his death. He received the degree of Ph. D. from the University of Königsberg; was a member of the American Philosophical Society, a fellow of the American and corresponding member of the New York Academies of Science, and honorary member of entomological societies in various parts of the world; and had published several hundred technical articles and "Bibliotheca Entomologica."

**Hagner, Peter Valentine**, military officer, born in Washington, D. C., Aug. 28, 1815; died there, March 11, 1893. He was graduated at the United States Military Academy and appointed a brevet 2d lieutenant in the 1st United States Artillery in 1836; was promoted 2d lieutenant a month afterward; transferred to the ordnance in 1838; promoted 1st lieutenant in 1840, captain in 1851, major in 1861, lieutenant-colonel in 1863, and colonel in 1867; and was retired June 1, 1881. He was brevetted captain, April 18, 1847, for gallantry at Cerro Gordo; major, Sept. 13 following, for Chapultepec; and colonel and brigadier-general, March 13, 1865, for faithful services in the ordnance department during the civil war. Immediately after graduation he took part in the campaign against the Seminoles in Florida; during the Canada border disturbances in 1837-'38 was on frontier duty; in the Mexican War was attached to the siege train in Gen. Scott's army, and was wounded in the assault on the city of Mexico.

**Hall, Benjamin Homer**, author, born in Troy, N. Y., Nov. 14, 1830; died there, April 6, 1893. He was graduated at Harvard College in 1851; admitted to



the bar in Troy in 1856; and was city clerk in 1858-'59, and city chamberlain in 1874-'77 and 1884-'85. He contributed frequently in prose and verse to newspapers and magazines, and was widely known for his historical researches and writings. His publications include: "A Collection of College Words and Customs" (Cambridge, 1851; revised edition, 1856); "History of Eastern Vermont" (New York, 1858; 2-vol. edition, Albany, 1865); "Bibliography of the United States: Vermont" (New York, 1860); and contributions to the "Harvard Book" (Cambridge, 1875) and to the "History of Rensselaer County, N. Y." (Philadelphia, 1880).

**Hambright, Henry A.**, military officer, born in Pennsylvania in 1819; died in Lancaster, Pa., Feb. 19, 1893. He served in the Mexican War, and reached the rank of 1st lieutenant in the 2d Pennsylvania Volunteers in 1846-'48; was offered and declined appointment as 2d lieutenant 6th United States Infantry, March 23, 1861; commissioned captain 11th Infantry, May 14 following; transferred to 29th Infantry, Sept. 21, 1866; promoted major 32d Infantry, Jan. 27, 1869; and was retired May 6, 1879. In the volunteer service he was appointed captain 1st Pennsylvania Infantry, April 29, and colonel 79th Infantry, Oct. 18, 1861, and was brevetted brigadier-general, June 7, 1865. He received brevets in the regular army of major, Dec. 31, 1862, for the battle of Murfreesborough; lieutenant-colonel, Sept. 20, 1863, for Chickamauga; and colonel, Sept. 1, 1864, for the Atlanta campaign.

**Hamilton, Morgan Calvin**, pioneer, born near Huntsville, Ala., Feb. 25, 1809; died in San Diego, Cal., Nov. 21, 1893. He received a common-school education, removed to the republic of Texas in 1837, and soon became active in political affairs. In 1839-'45 he was a clerk in the War Department of the republic, and during the three last years was Acting Secretary of War. In September, 1867, he was appointed comptroller of the State treasury by the commander of the 5th Military District; in 1868 was a delegate to the State Constitutional Convention; on the readmission of Texas into the Union he was elected United States Senator as a Republican, taking his seat March 31, 1870; and on the expiration of the term was re-elected for that ending March 3, 1877. After leaving the Senate he retired to private life.

**Hancock, John**, lawyer, born in Jackson County, Ala., Oct. 29, 1824; died in Austin, Texas, July 19, 1893. He was educated in Alabama and Tennessee; was admitted to the bar in Winchester, Tenn., in 1846; removed to Texas in 1847; was judge of the 2d District Court of the State in 1851-'55; and resumed practice till 1861. Refusing to take the oath of allegiance to the Confederacy, he was expelled from the Legislature and soon afterward removed to Mexico. After the war he returned; was a member of the State Constitutional Convention of 1866; was elected to Congress from the 10th District as a Democrat in 1870, 1872, 1874, and 1882.

**Harvey, Hayward Augustus**, inventor, born in Jamestown, N. Y., Jan. 17, 1824; died in Orange, N. J., Aug. 28, 1893. He was a son of Gen. Thomas W. Harvey, inventor of the gimlet-pointed screw; received an academical education in Poughkeepsie, N. Y., and became a draughtsman in a manufacturing establishment in New York city in 1844. In 1850 he was appointed superintendent of a wire factory in Somerville, N. J.; in 1852 entered the Harvey Steel and Iron Company, of Jersey City; in 1854, on the death of his father, he founded the Wangum Steel Company, of Connecticut; and in 1865 the Continental Screw Company, of Jersey City. For several years his inventive skill was exercised in perfecting methods of making wood screws, of hardening the steel used in the manufacture of mechanical tools, and of promoting other mechanical labor. In 1888 he took out patents for his process of hardening steel and of raising steel of a low grade to a higher one. At this time the United States Navy Department was seeking for the new war vessels an armor-plate material superior to that in general use. Mr. Harvey

believed his steel-hardening process, at first applied to tool steel only, could be adapted to the manufacture of armor plates for war vessels, and, organizing the Harvey Steel Company, with works at Brill Station, near Newark, N. J., he produced in 1889 the first "Harveyized" steel plate, 3 inches thick. In a comparative test with the compound armor plate of England, the Creuzot all-steel armor plate of France, and the hitherto superior nickel-steel plate of the United States, at the Indian Head proving grounds, the Harveyized plate was pronounced superior to all the others. On the strength of this test the United States Government adopted the Harvey plates, and their manufacture for the war vessels began in 1890. Since then England, Russia, and other foreign Governments have subjected the Harvey system to the severest test with uniformly favorable results, and the United States bought it outright. Mr. Harvey had taken out nearly 150 patents.

**Hastings, Serranus Clinton**, jurist, born in Watertown, N. Y., Nov. 22, 1814; died in San Francisco, Cal., Feb. 18, 1893. He received an academical education, became principal of an academy in Norwich, N. Y., in 1834; and was admitted to the bar in Burlington, then in Wisconsin Territory, in 1837. Soon afterward he was commissioned a justice of the peace, and in 1838, when the Territory of Iowa was created from that of Wisconsin, he was elected to the first Territorial Legislature of the former. He remained in the Legislature or the Council continuously till 1846, when Iowa was admitted to Statehood; was one of the first Representatives in Congress from the new State; and in 1848 was appointed Chief Justice of the Supreme Court of Iowa. In the following year he resigned, and removed to California, settling in Benicia. Within a few months he was elected by the Legislature the first Chief Justice of the Supreme Court of California. He served one term of two years, then served a similar term as Attorney-General of the State, and in 1853 retired to private life, and busied himself thereafter with real-estate investments. Judge Hastings will long be warmly remembered in San Francisco as the founder of the Hastings College of Law.

**Hatch, Rufus**, financier, born in Wells, York County, Me., June 24, 1832; died in New York city, Feb. 23, 1893. He spent his early years on his father's farm and as a grocery clerk in Kennebunkport; removed to Rockland, Ill., and entered a grocery store in 1851; and while working there joined the corps of engineers who made the surveys for the Beloit and Madison Railroad, the first one built in Wisconsin, and began selling agricultural produce on commission. In the last he was so successful that he removed to Chicago in 1854, and became a heavy grain operator and a founder of the Board of Trade. At the close of the Crimean War the firm of which he was a member failed with heavy liabilities; but he assumed the entire indebtedness, and in 1862 paid it in full with interest. While in Chicago he became acquainted with Henry Keep, then a large operator in railway properties, who induced him to remove to New York city in 1862, and started him in the stock-brokerage business. He became a member of the leading commercial exchanges; was an organizer of the Open Board of Brokers, subsequently consolidated with the New York Stock Exchange; managed the famous "deal" in the Chicago and Northwestern Railway stocks, by which he and his associates made large fortunes, in 1868; was elected managing director of the Pacific Mail Steamship Company; lost heavily in the Jay Cooke panic of 1873; and failed for a large amount in 1876. He then engaged in the cattle industry in the West; again paid his debts in full and with interest; resumed operations in New York city; met his last financial reverse in the failure of the Northern Pacific Railroad Company in 1883, and eventually paid the greater part of that indebtedness. He was a man of large humor, of bold and original action; deeply interested in religious and musical matters; and exceedingly benevolent.



**Hatlestad, Ole J.**, clergyman, born near Stavanger, Norway, Sept. 30, 1823; died in Decorah, Iowa, Sept. 7, 1893. He emigrated to the United States in 1846, and went to Muskego, Wis., where they joined a small settlement of his countrymen. In 1847 he became a teacher at Jefferson Prairie, Wis., and also conducted devotional services on Sunday. In 1850 he removed to Racine, where, in company with his brother-in-law, Hon. K. Langland, he published "Nordlyset," the first Norwegian newspaper in this country. He also organized there a Lutheran congregation. In 1853 he was called to Leland, Ill., and in 1854 was ordained as a minister in the Lutheran Church. He was President of the Norwegian Augustana Synod from 1870 to 1880, when he declined reelection on account of feeble health; but in 1888 he was again re-elected, and he served in that capacity until 1890, when the synod was merged in the United Norwegian Lutheran Church in America. In 1887 he published a "History of the Norwegian Augustana Synod and the Lutheran Church in America," in the Norwegian language.

**Hay, Charles Augustus**, educator, born in York, Pa., Feb. 11, 1821; died in Gettysburg, Pa., June 26, 1893. He was graduated at Pennsylvania College, Gettysburg; spent two years studying in Germany, and became Professor of Hebrew, German, and New Testament Exegesis in the Gettysburg Theological Seminary in 1845. In 1848-'49 he held a pastorate in Hanover, Pa., and in 1850-'65 one in Harrisburg; and was Professor of Hebrew at Gettysburg from 1865 till his death. He received the degree of D. D. from Pennsylvania College in 1859. His publications include an individual translation of Luther's "Commentary on the Sermon on the Mount"; a translation, with Prof. Dr. H. E. Jacobs, of Schmid's "Doctrinal Theology of the Evangelical Lutheran Church" (Philadelphia, 1875); and "Life of Captain Sees" (Harrisburg, 1867).

**Hodgson, Telfair**, clergyman, born in Columbia, Va., March 14, 1840; died in Sewanee, Tenn., Sept. 11, 1893. He was graduated at the College of New Jersey in 1859; served through the greater part of the civil war as a chaplain in the Confederate army; was rector of a Protestant Episcopal parish in Keyport, N. J., in 1866-'71; professor in the University of Alabama in 1871-'73; assistant in Christ Church, Baltimore, in 1873-'74; rector of Trinity Church, Hoboken, in 1874-'78; and Vice-Chancellor of the University of the South in 1878-'90. On resigning from the University he founded the "Sewanee Review" and became its editor. He received the degree of D. D. from the University of the South in 1878, and LL. D. from Hobart College. His service in the University of the South will long be remembered by reason of his gift to it of the Hodgson Library.

**Holley, Sallie**, philanthropist, born in Lyons, N. Y., in 1817; died in New York city, Jan. 12, 1893. She was the daughter of Myron Holley, a well-known reformer of fifty years ago; spent her early life in Rochester, N. Y.; and was graduated at Oberlin College in 1839. Soon afterward, in company with an intimate associate, Miss Putnam, she began traveling about the country and delivering antislavery lectures. She continued this work till the beginning of the civil war, and after its close she settled in West Virginia and opened a school in Lottsburg for poor colored children. Her first schoolhouse was burned by indignant white citizens, but she bought a tract of land, erected another building, and continued to teach in it till within a few weeks of her death. Miss Holley had written considerably in prose and verse. Her last composition, a sonnet to "A Summer Dawn in Virginia," was typical of the results of her labor in the cause of humanity.

**Hooper, Lucy Hamilton Jones**, author, born in Philadelphia, Pa., Jan. 20, 1835; died in Paris, France, Aug. 31, 1893. She began writing verse at an early age, and contributing to "Godey's Lady's Book"; married Robert M. Hooper in 1854; and since his appointment as United States vice-consul-general

in Paris, in 1874, had resided in the French capital. In 1864 she was associate editor of "Our Daily Fare," a publication issued in connection with the United States Sanitary Commission Fair in Philadelphia, and published her first collection of poems, "Poems, with Translations from the German." On the establishment of "Lippincott's Magazine," in 1868, she became its associate editor, and held the post till her first trip to Europe, in 1870. Subsequently settling in Paris, she became the correspondent of several American periodicals, including the Philadelphia "Daily Evening Telegraph," the Baltimore "Gazette," the American issue of the "Art Journal," "Appleton's Journal," and "Lippincott's Magazine." For eighteen years she had never missed a weekly letter in the Philadelphia "Telegraph," and in her last, written two days before her death, she bade farewell to her American readers, saying that before they read it she would have passed away. She published a second collection of "Poems" (1871); a translation of Daudet's "Le Nabob" (1879); and a novel, "Under the Tricolor" (1880).

**Hosford, Eben Norton**, chemist, born in Moscow, Livingston County, N. Y., July 27, 1818; died in Cambridge, Mass., Jan. 1, 1893. He was graduated at the Rensselaer Polytechnic Institute in 1838; was Professor of Mathematics and Natural Sciences in the Albany Female Academy in 1840-'44; spent two years in Giessen in the study of analytical chemistry and in experimental research in the Liebig laboratory; and on his return was elected Rumford Professor of Science applied to the Arts in Harvard College. Soon afterward he submitted to Abbott Lawrence a plan for a department of analytical and applied chemistry, which led to the establishment of the Lawrence Scientific School in Cambridge. He remained at Harvard sixteen years, constantly making experiments, putting new chemical ideas into practical use, and taking out about thirty patents, more than one half on chemical compounds of every-day utility. On resigning his chair in Harvard he engaged in business as a manufacturing chemist and became wealthy. More than thirty years ago he published an account of the result of many successful experiments for stilling waves by spreading oil on the surface of the water; in recent years had given much time to geographical and archaeological studies; and among other works published a complete lexicon of five Indian languages. He was deeply interested in the cartography of New England, and for many years carried on investigations which resulted in his announcement of the discovery of the site and walls of the ancient city of Norumbega, on Charles river, at Watertown, Mass., and the erection of a memorial tower to mark the site of the ancient fort in 1889. In the latter part of his life he did much to promote the prosperity of Wellesley College, of whose board of visitors he had been president since the organization of the institution, and evidences of his generosity are seen in nearly every department.

**Humphreys, Edward Rupert**, educator, born in England, March 1, 1820; died in Boston, Mass., March 20, 1893. He was graduated at Cambridge University, where he had included medicine among his studies, and when twenty-four years old was appointed director of education of Prince Edward Island. In 1848 he resigned, to become headmaster in classics in Merchiston Castle Academy, near Edinburgh, and from 1852 till 1859 was headmaster in ancient languages in the Cheltenham Grammar School. While in Scotland he was elected a fellow of the Educational Institute, and received the degree of LL. D. from King's University and King's College; and while in Cheltenham was elected President of the College of Preceptors of London. He removed to Boston, Mass., in the early part of the civil war, and spent the remainder of his life there, chiefly engaged in literary work. Besides writings on Masonic subjects, he published "Lessons on the Liturgy of the Protestant Episcopal Church" (Boston, 1860); "Essays on the Education of Military Officers" (1862);



"The Higher Education of Europe and America" and "America, Past, Present, and Prospective" (1870); and "Manual of Political Economy" (1855).

**Hyatt, James William**, financier, born in Norwalk, Conn., Sept. 19, 1837; died there, March 12, 1893. He received a common-school education; went to work in a lumber yard; was a clerk in the banking house of Legrand B. Lockwood & Company in New York city from 1860 till 1872; returned to Norwalk, and was chosen Vice-President of the Danbury and Norwalk Railroad Company in 1873, and became president of the corporation in 1881. In 1875-'76 he was a member of the Connecticut Legislature; in the latter year was appointed by the Governor State bank commissioner; in 1883 was elected State Senator; in the following year was reappointed bank commissioner; and in January, 1887, was appointed United States bank examiner for the States of Connecticut and Rhode Island. In May following he was appointed Treasurer of the United States, and held the office till the close of that Administration in 1889. In 1890 he became President of the Fairfield County National Bank in Norwalk.

**Ingalls, Rufus**, military officer, born in Denmark, Me., Aug. 23, 1820; died in New York city, Jan. 16, 1893. He was graduated at the United States Military Academy and appointed a brevet 2d lieutenant in the United States Rifles in 1843; was promoted 2d lieutenant 1st dragoons in 1845, 1st lieutenant 1847, captain and assistant quartermaster 1848, captain 1st Dragoons 1854, major and quartermaster 1862, lieutenant-colonel and deputy quartermaster-general July 28, 1866, colonel and assistant quartermaster-general the day following, and brigadier-general and quartermaster-general Feb. 23, 1882; and was retired July 1, 1883. In the volunteer service he was appointed colonel and aid-de-camp on the staff of Gen. McClellan, Sept. 28, 1861; was promoted brigadier-general, May 23, 1863; and was mustered out, Sept. 1, 1866. He won the brevets of 1st lieutenant, Feb. 4, 1847, for gallant conduct in the conflicts of Embudo and Taos, New Mexico; lieutenant-colonel, colonel, and brigadier-general, July 6, 1864, for distinguished services during the war; and of major-general, U. S. A. and U. S. V., March 13, 1865, for meritorious services during the war. Gen. Ingalls served with Col. Steptoe in his expedition across the continent after the Mexican War; was on the staff of Gen. Harney at Fort Vancouver during the San Juan excitement; and, after being sent to re-enforce the garrison in Fort Pickens in April, 1861, served to the close of the war with the Army of the Potomac.

**Itzel, Adam, Jr.**, composer, born about 1864; died in Baltimore, Md., Sept. 5, 1893. He displayed unusual musical ability in early childhood, learned to play every orchestral instrument, was for several years leader of the orchestra in Harris's Academy of Music and in Albaugh's Lyceum Theater in Baltimore, received the diploma of distinction on finishing the course in the Peabody Conservatory of Music in 1882, and was Professor of Theory, Harmony, and Score Writing in that institution from 1890. He was a composer of much merit, and will be remembered best by his successful opera, *The Tar and the Tartar*.

**Jardine, Edward**, military officer, born in Brooklyn, N. Y., Nov. 2, 1828; died in New York city, July 16, 1893. He entered the military service of the State as a private in 1849, and at the outbreak of the civil war raised and equipped a company of volunteers, with which he joined the 8th New York Volunteers, which afterward became famous as the Hawkins Zouaves. Attached to the command of Gen. Burnside, he was put in charge of the landing force which attacked Fort Clark and Fort Hatteras, in the Roanoke campaign, and subsequently he took part in the battles of Antietam, Fredericksburg, Camden, Elizabeth City, and Suffolk, and was several times wounded. In 1863 he returned to New York city, and was engaged in reorganizing his old command for re-enlistment when the draft riots broke out. Though unattached to any command, he speedily mustered about

200 of his former comrades, placed himself at their head, and on July 15 attempted to disperse the mob that had gathered at First Avenue and 19th Street, about 10,000 strong. Failing to receive support, his little band was soon put to rout. Many were killed, nearly all the others were wounded, and the commander received wounds in the head and thigh which ultimately caused his death. For his services in the field and during the draft riots Congress passed a special act recognizing his bravery and granting him a pension of \$100 a month for life, and he was retired with the brevet rank of brigadier-general. After the war he was clerk of the New Jersey Assembly, editor and publisher of the Jersey City "Times," and a weigher in the New York customhouse.

**Jenkins, Thornton Alexander**, naval officer, born in Orange County, Va., Dec. 11, 1811; died in Washington, D. C., Aug. 9, 1893. He was appointed a midshipman in the United States navy, Nov. 1, 1828; was promoted passed midshipman, June 14, 1834; lieutenant, Dec. 9, 1839; commander, Sept. 14, 1855; captain, July 16, 1862; commodore, July 25, 1866; and rear-admiral, Aug. 15, 1870; and was retired, Dec. 11, 1873. During his active career he was on sea service sixteen years and eleven months, on shore or other duty twenty-five years and seven months, and was unemployed twenty-one years and eight months. It fell to his lot to perform a large amount of duty of historical interest. As a midshipman he took part in the suppression of the Nat Turner insurrection in 1831, and, soon afterward, in the search for pirates off the coast of Cuba. From 1834 till 1842 he was employed in hydrographic, topographic, and geodetic work on the coast survey, and in 1845 began his great work in connection with the United States lighthouse system. He was sent to Europe to examine and report on the lighthouse systems of Great Britain and the Continent, and in the following year made a most comprehensive report, which covered the entire system of illuminants, towers, lightships, beacons, buoys, and lighthouses abroad. In the Mexican War he was executive officer of the sloop of war "Germantown" and commander of the storeship "Relief," and commanded part of the forces employed in the capture of Tuspan and Tabasco. In 1848-'62 he was assistant to Prof. Bache, then engaged in meteorological and hydrographic observations, and in taking deep-sea temperatures in the Gulf Stream, and using in the work a vessel designed by Lieut. Jenkins. A part of this time he also acted as secretary of the temporary lighthouse board. In 1852, on the creation of the permanent board, he was appointed its secretary, in recognition of his invaluable report on the lighthouse systems of Europe. Though strongly inclined to the scientific pursuits of peace, his service in behalf of the lighthouse system, of which the London "Times" said "he may be regarded as the chief organizer," was constantly being interrupted by other sea duty. In 1858-'60 he commanded the sloop of war "Preble" in the Paraguay expedition, on the Brazil station, on the coast of Central America, and in the Gulf of Mexico. He was present at the capture of the armed vessels "Miramon" and "Marquis of Havana" during the siege and bombardment of Vera Cruz by the insurgent forces of Gen. Miramon, and took both vessels as prizes to New Orleans. He was also instrumental in saving the forts at Key West and Dry Tortugas from being captured by an expedition sent thither from





New Orleans before the civil war actually opened. In January, 1861, he was again appointed secretary of the lighthouse board, and for more than a year was on special and secret service for the Naval and Treasury Departments. His most distinguished service in the civil war was as fleet captain and chief of staff of Farragut's squadron in the Mississippi; as commander of the naval forces at the capture of Port Hudson; as commander of the 2d Division of Farragut's fleet in Mobile Bay; and as the naval officer in charge of the city and bay after the surrender. In 1865-'69 he was chief of the Bureau of Navigation and Detail; in 1869 resumed duty as secretary of the lighthouse board; and in 1871-'73 commanded the Asiatic squadron. On March 25, 1874, he was appointed by President Grant commissioner to represent the Navy Department at the Centennial Exhibition. Admiral Jenkins was a member of many historical and scientific associations.

**Joachimsen, Priscilla J.**, philanthropist, born in Plymouth, England, in 1825; died in New York city, July 24, 1893. She was brought to the United States when an infant, and married Philip J. Joachimsen (see the "Annual Cyclopædia" for 1890, p. 651) in 1843. With her husband she was a founder of the Hebrew Sheltering Guardian Society, having a model orphan asylum in Eleventh Avenue, between 150th and 151st Streets, New York city, and was its president till her death. She was also a founder of the Jewish Lying-in Asylum; of the Home for Aged and Infirm Hebrews, of which she was president for five years, and of the Deborah Nursery, and was an active worker in many of the largest charitable enterprises in the city. It is said that many wealthy merchants in New York city to-day owe their prosperity to her good offices and other aid.

**Johnston, John Taylor**, philanthropist, born in New York city, April 8, 1820; died there, March 24, 1893. He was a son of John Johnston, a Scotch merchant in New York city, and a founder of the University of the City of New York; was graduated at that institution in 1839; studied law at Yale and in New York city; and was admitted to the bar in 1843. After practicing about four years, he was induced to accept the presidency of the Somerville and Easton Railroad Company, then controlling a short and comparatively insignificant line. Under his management the property was developed into what is now known as the Central Railroad of New Jersey. He was president of the corporation continuously from 1848 till 1877, when, after sacrificing a large part of his fortune to save the credit of the company, he resigned his office, and the property was placed in the hands of a receiver. For many years he had been deeply interested in art, and had been gathering a collection of paintings which became widely known for its extent and merit. One day in each week his gallery in New York was opened to the public, and once a year he gathered in it the artists of the city and vicinity. In the effort to save the railroad company and to reimburse a number of people of small means who had invested in stocks of the company on his advice, he sold the majority of his paintings at auction in 1876, receiving nearly \$400,000 for them. After retiring from the presidency he spent the remainder of his life in promoting the interests of the various educational and benevolent institutions with which he had long been associated. He was an organizer of the Metropolitan Museum of Art, and its president till 1889, and an active member of the governing boards of the University of the City of New York, the Presbyterian Hospital, the Woman's Hospital, St. Andrew's Society, and several boards of the Presbyterian Church. He gave liberally to these and other institutions in life, and bequeathed \$10,000 each to the museum and the university.

**Jones, Charles Colcock**, historian, born in Savannah, Ga., Oct. 28, 1831; died in Augusta, Ga., July 19, 1893. He was graduated at the College of New Jersey in 1852; read law; was graduated at the Harvard Law School in 1855; and was admitted to the bar in

Savannah the same year. During the civil war he served in the artillery branch of the Confederate army, reaching the rank of colonel, and being chief of artillery during the siege of Savannah. After the war he practiced law in New York city till 1877, when he returned to Georgia. He received the degree of LL. D. from the University of the City of New York in 1880, and from Oxford University, Georgia, in 1882. Mr. Jones was a prolific writer of history, biography, and archaeology. Among his best-known publications were: "Indian Remains in Southern Georgia" (Savannah, 1859); "Ancient Tumuli on the Savannah River" (New York, 1868); "Historical Sketch of Tonco-Chi-Chi, Mico of the Yamacraws" (1868); "Antiquities of the Southern Indians, particularly of the Georgia Tribes" (1873); "The Siege of Savannah in 1779" and "The Siege of Savannah in December, 1864" (1874); "De Soto's March through Georgia" (1880); "History of Georgia" (1883); "The English Colonization of Georgia" (1887); and "Negro Myths from the Georgia Coast" (1888).

**Kelton, John Cunningham**, military officer, born in Delaware County, Pa., June 24, 1828; died near Washington, D. C., July 15, 1893. He was graduated at the United States Military Academy, and appointed a brevet 2d lieutenant 6th United States Infantry in 1851; was promoted 2d lieutenant in December of the same year, 1st lieutenant in 1855, captain and assistant adjutant-general, Aug. 3, 1861; major, July 17, 1862; lieutenant-colonel, March 23, 1866; colonel, June 15, 1880; and brigadier-general and adjutant-general, June 7, 1889; and was retired June 24, 1892. He was brevetted lieutenant-colonel, colonel, and brigadier-general, March 13, 1865, for "most valuable and arduous services both in the field and at headquarters." After graduation he was employed in duty on the frontier in Minnesota, at Jefferson Barracks, Mo., and in Kansas till 1857; was then detailed to the Military Academy as instructor in infantry tactics and the use of small arms, where he remained till 1861; and passed the remainder of his military career in the adjutancy on the field and in Washington. On his retirement Secretary of War Elkins issued a general order to the army complimentary to him. From his retirement till his death he was governor of the National Soldiers' Home near Washington.

**Kenna, John Edward**, lawyer, born in Valcoulon, Va. (now West Virginia), April 10, 1848; died in Washington, D. C., Jan. 11, 1893. He was brought up on a farm, served in the Confederate army, and was wounded in 1864. Subsequently he attended St. Vincent's College, in Wheeling, and was admitted to the bar in Charleston, W. Va., June 20, 1870. In 1872-'77 he was prosecuting attorney for Kanawha County; in 1875 was elected by the bar of Lincoln and Wayne Counties to hold the circuit courts of those counties; in 1876, 1878, 1880, and 1882 was elected to Congress as a Democrat; and in 1883 and 1889 was elected United States Senator to succeed Henry G. Davis.

**Kip, William Ingraham**, clergyman, born in New York city, Oct. 3, 1811; died in San Francisco, Cal., April 7, 1893. He was graduated at Yale College in 1831, and at the General Theological Seminary in 1835; was ordained deacon and priest in the Protestant Episcopal Church the latter year; was rector of St. Peter's Church, Morristown, N. J., in 1835-'36, assistant minister of Grace Church, New York city, in 1836-'37, and rector of St. Paul's Church, Albany, N. Y., in 1837-'53; and was consecrated Missionary Bishop of California in 1853, and elected first bishop of that diocese in April, 1857. His jurisdiction extended over the whole State till 1874, when on a divi-





sion of the diocese the northern part of the State was constituted a missionary jurisdiction. Bishop Kip actively administered his episcopal jurisdiction till his death. He received the degree of S. T. D. from Columbia College in 1847, and of LL. D. from Yale in 1872. In 1880 he was appointed a member of the Board of Examiners at the United States Naval Academy, and in 1883 of the board at the United States Military Academy. Among his numerous publications were: "The Lenten Fast" (1843); "Double Witness of the Church" (1844); "Christmas Holidays in Rome" (1845); "Early Saint Missions" (1846); "Early Conflicts of Christianity" (1850); "Catacombs of Rome" (1854); "The Unnoticed Things of Scripture" (1868); "Olden Times in New York" (1872); "The Church of the Apostles" (1877); and "Early Days of my Episcopate" (1892).

**Kirkham, Ralph Wilson**, military officer, born in Springfield, Mass., Feb. 20, 1821; died in Oakland, Cal., May 24, 1893. He was graduated at West Point in 1842; served through the Mexican War, in which he won the brevets of 1st lieutenant and captain for gallantry at Contreras, Churubusco, Molino del Rey, and Chapultepec, and at the capture of Mexico city; and while in that country made an ascent of Popocatepetl. In 1848-49 he was acting assistant adjutant-general at St. Louis, and in 1854 he was ordered to the Pacific coast, where he served as chief quartermaster of the Department of the Pacific till the close of the civil war. In 1865 he was brevetted brigadier-general for faithful service. After the war he remained in California, acquired wealth, and collected one of the finest private libraries, especially on military subjects, in the country.

**Ladd, William Sargent**, banker, born in Holland, Vt., Oct. 10, 1826; died in Portland, Ore., Jan. 6, 1893. He removed to Portland in 1851; engaged in mercantile business till 1859, and then organized the banking house of Ladd & Tilton, at the head of which he remained till his death. He built the first brick building in Portland, acquired large wealth, and for many years had been in the habit of giving to charitable enterprises one tenth of his annual net income. He bequeathed \$450,000 to trustees to be used for charitable and educational purposes.

**Lamar, Lucius Quintus Cincinnatus**, jurist, born in Putnam County, Ga., Sept. 1, 1825; died in Vineville, Ga., Jan. 23, 1893. He was graduated at Emory College in 1845, studied law in Macon, was admitted to the bar there, and removed to Oxford, Miss., to practice in 1847. Soon afterward he became Professor of Mathematics in the State University, and an editorial writer on the "Southern Review."

He held these posts but a short time, returning to Georgia and resuming practice in Covington. In 1853 he was elected to the Legislature, and, after serving for two years, again removed to Mississippi, where he was elected to Congress in 1857 and 1859. While in Congress he was a vigorous advocate of slavery and State rights. In 1860 he resigned, to become a member of the Secession Convention of Mississippi, and in 1861 entered the Confederate army. During 1863-'64 he was a special representative of the Confederacy in Europe, and while he successfully aided in the floating of loans he failed to secure the recognition of the Confederacy as an independent government. In 1866 he was elected Professor of Political Economy and Social Science in the State University of Mississippi, and in the following year was transferred to the chair of Law. In 1872 he was again elected to Congress as

a Democrat, and in 1874 was re-elected. His course here was one of hard work in committees, and nothing occurred to call the attention of the country particularly to him till April 27, 1874, when he delivered a eulogy on Charles Sumner, which was widely copied and admired for its eloquence and liberal tone, though for a time its liberality was distasteful to his constituency, by some of whom an unsuccessful attempt was made to defeat his re-election. In 1877 he entered the United States Senate, where at the first opportunity he placed himself on record as an uncompromising opponent of the inflation or debasement of the national currency. His conduct in this respect led to a repudiation of his views in many public meetings throughout his State, and the Legislature formally directed him to give his influence and votes against the principles he had enunciated in the Senate, or resign his seat. He firmly declined to do either, and in a memorable speech in the Senate, referring to the legislative instructions, he stated his convictions of what was right with so much clearness that he was warmly congratulated by Democrats and Republicans alike for his independent stand. In 1882 the Legislature re-elected him to the Senate by an increased majority after he had made a canvass of the State on the various issues raised against him. In 1885 President Cleveland appointed him Secretary of the Interior Department, and in December, 1887, he was made an associate justice of the United States Supreme Court.

**Lamb, Martha Joan Reade Nash**, historian, born in Plainfield, Mass., Aug. 13, 1829; died in New York city, Jan. 2, 1893. She received a thorough education in the English branches and in modern languages, began writing on historical subjects at an early age, and married Charles A. Lamb in 1852. After her marriage she lived for eight years in Chicago, Ill., where she was a founder of the Home for the Friendless and the Half-Orphan Asylum, and was secretary of the Sanitary Commission Fair in 1863. She removed to New York city in 1866, and from that date gave her time wholly to literary work. Since 1883 she had been editor of the "Magazine of American History." She was a member of nearly thirty historical and other learned societies. Besides papers on historical and other subjects in magazines, Mrs. Lamb was author of 8 books for children (1869-'70); "Spicey," a novel (1873); "The History of the City of New York" (2 vols., New York, 1877, 1881); "The Homes of America" (1879); "The Christmas Owl" (1881); "The Christmas Basket"; "Snow and Sunshine" (1882); "Wall Street in History"; and "Historical Sketch of New York," for the tenth census (1883).

**Lamberton, Robert Alexander**, educator, born in Carlisle, Pa., Dec. 6, 1824; died in South Bethlehem, Pa., Sept. 13, 1893. He was graduated at Dickinson College in 1843; was admitted to the bar of Dauphin County in 1846; and was a member of Gov. Curtin's military staff in the civil war. He practiced law till 1880, when he was elected President of Lehigh University, and continued in that relation till his death. When he accepted the presidency the institution had 200 students enrolled on its register, and at his death it had 631 students, 37 professors and instructors, valuable grounds and buildings, and an important library. He received the degree of LL. D. from the University of Pennsylvania in 1880.

**Lamon, Ward H.**, lawyer; died in Martinsburg, W. Va., May 8, 1893. He was a practicing lawyer in Bloomington, Ill., at the time Abraham Lincoln was elected President of the United States, and, because of his friendship and his great size and strength, was selected by Mr. and Mrs. Lincoln to be the personal escort of the President-elect on the journey to the national capital. After the inauguration he was appointed marshal of the District of Columbia, and he held the office till after the President's assassination. He continued to reside in Washington till within a few years, when he removed to Martinsburg, W. Va. A biography of President Lincoln by





him (first volume only) was severely criticised by the friends of the President because of its unfriendly tone, after what was known to have been a long and very intimate acquaintance between the President and Mr. Lamont.

**Lang, Louis**, painter, born in Waldsee, Württemberg, Feb. 29, 1812; died in New York city, May 7, 1893. At the age of sixteen he had become proficient in pastel work. He continued his art study in Paris and Stuttgart, removed to Philadelphia in 1838, and, after a trip to Italy in 1841, settled in New York city. He was a member of the Century Club since 1849, and an associate of the National Academy of Design since 1852. His chief paintings included "Blind Nydia," "Maid of Saragossa," "Mary Stuart Distributing Gifts," "Romeo and Juliet," "Jephtha's Daughter," and "Portrait of a Child."

**Larcom, Lucy**, poet, born in Beverly, Mass., in 1826; died in Boston, Mass., April 17, 1893. On the death of her father she accompanied her mother to Lowell, where she attended the grammar school till obliged



to go to work in a cotton-mill. There she soon became one of the most popular contributors to the Lowell "Offering," a magazine conducted by the mill girls. Her writings attracted the attention and won for her the friendship of John G. Whittier. About 1846 she went to Illinois, where she studied for three years in the Monticello Academy and applied all her leisure

to teaching. She then returned to Massachusetts and taught for six years in Wheaton Seminary. In 1865, on the establishment of "Our Young Folks," she became assistant editor, and soon afterward she was appointed editor. She conducted the publication with high credit till 1874. Her writings, which were very numerous, included "Ships in the Mist, and Other Stories" (1859); "Poems" (1868); "An Idyl of Work," a retrospect of her factory life (1875); "Childhood Songs" (1877); "Wild Roses of Cape Ann, and Other Poems" (1880); "New England Girlhood" (1884); "As it is in Heaven" (1891); and "The Unseen Friend" (1892). She also edited several collections of poetry, among them "Breathings of a Better Life" (1867); "Hillside and Seaside in Poetry" (1876); and "Roadside Poems for Summer Travelers" (1877). A complete collection of her poetical works to that time was published in 1884.

**Larremore, Richard Ludlow**, jurist, born in Astoria, Long Island, N. Y., Sept. 6, 1830; died in New York city, Sept. 13, 1893. He was graduated at Rutgers College in 1850; studied law in New York city, and was admitted to the bar there in 1852. In 1870 he was elected a judge of the Court of Common Pleas as a Democrat; in 1876 was assigned by Gov. Tilden to duty as one of the judges of the Supreme Court; in 1884 was re-elected for a term of fourteen years; and in 1891 resigned on account of ill health, after having served for a year as chief justice of the Court of Common Pleas, succeeding Judge Charles P. Daly. He had been interested deeply in the educational affairs of the city, and had served as a trustee of the 11th and 19th Ward schools, as a commissioner of education in 1861-'64 and 1868-'70, and as president of the board in his last year of service. Judge Larremore was a member of the State Constitutional Convention of 1867 and of its Committee on Education and Literature. He received the degree of LL. D. from the University of the City of New York in 1870.

**Lee, Mary W.**, army nurse, born in Ardmore, County Tyrone, Ireland, in 1816; died in Philadelphia, Pa., Aug. 8, 1893. She was brought to the United States when a child. In 1862 she became a volunteer nurse in the Union army. Her first service was in the hos-

pital transport at Harrison's Landing, and from this point she followed the army through victory and defeat to the close of the war. She particularly distinguished herself in the campaign that ended with the battle of Antietam, and in that struggle was conspicuous for her tender ministrations to the wounded. She also rendered invaluable services at Fredericksburg and Chancellorsville, and at the hospital center of the army after Gettysburg, the Wilderness, and Spottsylvania. After the surrender at Appomattox she went to Richmond and served in the hospitals there. On June 12, 1891, the survivors of the 72d Pennsylvania Volunteers gave her a reception and made her several presents, and on July 4 she unveiled the regimental monument at Gettysburg.

**Littlefield, Alfred H.**, manufacturer, born in Warwick, R. I., April 2, 1829; died in Pawtucket, R. I., Dec. 21, 1893. He was engaged in manufacturing and banking; was division inspector of the Rhode Island militia, with the rank of colonel, in the civil war; was a member of the lower branch of the State Legislature in 1876-'77, and of the State Senate in 1878-'79; and was elected Governor of the State as a Republican in 1880, 1881, and 1882.

**Locke, Frederick Thomas**, military officer, born in New York city, Aug. 17, 1826; died there, Jan. 6, 1893. He entered the Union army at the outbreak of the civil war as adjutant of the 12th New York Volunteers, and before he had completed three months of service he was appointed captain, assistant adjutant-general, and assistant chief of staff of Gen. Fitz John Porter's command. He took part in all the engagements of the Army of the Potomac; was brevetted brigadier-general for bravery in the battle of Fair Oaks; and was present at the surrender of Lee's army. A shot in the face in the battle of Spottsylvania Courthouse was the ultimate cause of his death.

**Lockwood, Samuel**, naval officer, born in Norwalk, Conn., Jan. 24, 1803; died in Flushing, Long Island, N. Y., July 5, 1893. He was appointed a midshipman in the United States navy, July 12, 1820; promoted lieutenant, May 17, 1828, and commander, Oct. 18, 1850; retired, Oct. 1, 1864; and commissioned commodore, to rank with those of his original date, March 12, 1867. In 1821-'25 he served in the West Indies; in 1831-'32 on the Brazilian station; in 1834-'36 on the Pacific station; in 1838-'39 with Commodore Jones's exploring expedition; and during the Mexican war assisted in the capture of Vera Cruz, Tlaxcala, and Tabasco, and blockaded the Tabasco river for six months. During the civil war he blockaded Wilmington and Beaufort, N. C., York river and Newport News, and the approach to Cape Henry, Va.; and while lying off Beaufort commanded the flotilla, assisted in the capture of Fort Macon by the military and naval forces, and with Gen. Parke signed the terms of surrender on the part of the United States.

**Low, Abiel Abbot**, merchant, born in Salem, Mass., Feb. 7, 1811; died in Brooklyn, N. Y., Jan. 7, 1893. He received a public-school education; became a clerk in a mercantile house engaged in the South American trade; removed to Brooklyn and joined his father in business in 1829; spent 1833-'40 in business in Canton, China; and returning to Brooklyn, established himself as a tea merchant. Subsequently, with his brother Josiah, and his brother-in-law E. H. R. Lyman, he organized the firm of A. A. Low & Bros., built about a dozen ships to accommodate his trade with China and the East, and made his firm a leader in its line. He became a member of the New York Chamber of Commerce in 1846, and its president in 1863 and 1866; was a founder of Greenwood Cemetery; trustee of the Packer Institute, Brooklyn Library, Long Island Historical Society, Brooklyn Hospital, Society for Improving the Condition of the Poor, and of other benevolent and financial institutions, chiefly in Brooklyn. He never held a political office. During life he gave a generous support to the charitable and educational institutions with which he was connected, and he made the following public bequests: Chamber of Commerce of New



York, \$20,000; Packer Institute, \$20,000; Female Employment Society, Brooklyn, \$15,000; Brooklyn Hospital, \$10,000; St. Phœbe's Mission, Brooklyn, \$10,000; First Unitarian Church, Brooklyn, \$7,500; and Long Island Historical Society, \$5,000. He was the father of Seth Low, President of Columbia College.

**Lupton, Nathaniel Thomas**, chemist, born in Virginia, Dec. 19, 1830; died in Auburn, Ala., June 12, 1893. He was graduated at Dickinson College in 1849, and, after spending two years in study in Heidelberg, became Professor of Chemistry and Geology in Randolph-Macon College and in the Southern University of Alabama. In 1871 he was elected President of the State University of Alabama, taking also the chair of Chemistry; in 1875 he became Professor of Chemistry in Vanderbilt University, where he remained eleven years; and in 1885 was appointed State Chemist of Alabama and Professor of Chemistry in the Agricultural College of that State, holding both offices till his death. Dr. Lupton was chairman of the chemical section of the American Association for the Advancement of Science in 1877; vice-president of that association in 1880; and Vice-President of the American Chemical Society in 1889. He was author of "The Elementary Principles of Scientific Agriculture."

**Lyman, Theodore Benedict**, clergyman, born in Brigh-ton, Mass., Nov. 27, 1815; died in Raleigh, N. C., Dec. 13, 1893. He was graduated at Hamilton College in 1837, and at the General Theological Seminary in 1840; was ordained deacon in the Protestant Episcopal Church in 1840, and priest in 1841; was rector of St. Paul's Church in Hagerstown, Md., in 1840-'50, and of Trinity in Pittsburg, Pa., in 1850-'60; and was instrumental in establishing the American chapel in Rome, Italy, during a residence in Europe in 1860-'70. From 1870 till 1873 he was rector of Trinity Church in San Francisco; 1873-'81 was Assistant Bishop of North Carolina; and from 1881 till his death was bishop of that diocese, preferring that jurisdiction to the new one of East Carolina, which was created from his former diocese in 1883. He spent 1886-'87 abroad, having succeeded the Bishop of Long Island in charge of American Episcopal churches in Europe.

**McBryde, Margaretta Macauley**, philanthropist, born in New York city, in 1841; died there, Feb. 8, 1893. Possessing large means, she gave the greater part of her life to benevolent work, established the first woman's lodging house in the city, founded the Riverside Rest Association, was active in the Charity Organization Society, and was a voluntary collector for the Penny Provident fund.

**McCoy, William D.**, educator, born of free colored parents in Cambridge City, Ind., Nov. 14, 1853; died in Monrovia, Liberia, May 14, 1893. He was educated in the public schools of Boston; began teaching in Sidney, Ohio, in 1872; removed to Helena, Ark., the same year, and taught school; was a member of the city council for two years, city recorder four years, and superintendent of public schools one year; and from 1879 till January, 1892, was engaged in educational work in Indianapolis, Ind. He was then appointed by President Harrison to be United States minister to the Republic of Liberia. At the time of his death he was preparing to return home for a visit. He was the fourth United States minister to Liberia to die at his post in the last twelve years.

**McKenna, William**, jurist, born in Washington, Pa., Sept. 27, 1816; died in Pittsburg, Pa., Oct. 27, 1893. He was graduated at Washington and Jefferson College in 1833; took a post-graduate course at Yale; studied law with his father, and was admitted to the bar in 1837. In 1869 he was appointed by President Grant judge of the United States Circuit Court for the 9th District, comprising the States of Pennsylvania, New Jersey, and Delaware; and in 1889 resigned, and was succeeded by Judge Acheson.

**McMahon, Lawrence S.**, clergyman, born in the province of New Brunswick, in 1835; died in Lakeville, Conn., Aug. 21, 1893. He came to the United States

when four years old; received his preliminary education in the public schools of Boston; was a student in the College of the Holy Cross in Worcester, and in Montreal and Baltimore; and took his theological course in the College of Aix, France, and in Rome. He was ordained to the priesthood of the Roman Catholic Church in Rome in 1860, and on returning to the United States was stationed at the cathedral in Boston till 1863, when he went to the field as chaplain of the 28th Massachusetts Volunteers. After the war he held pastorates in Bridgewater and New Bedford, and on the creation of the see of Providence he was appointed vicar-general to Bishop Hendricken. On Aug. 10, 1879, he was consecrated the fifth bishop of the diocese of Hartford, Conn., and held the office till his death. He received the degree of D. D. from Rome in 1873. During his administration he gave more than \$100,000 to the fund for the erection of the Hartford cathedral, and lived to see the completion of that work.

**McMichael, William**, lawyer, born in Philadelphia, Pa., March 4, 1841; died in New York city, April 20, 1893. He was a son of the Hon. Morton McMichael, a widely known politician and journalist of his day, and was graduated at the University of Pennsylvania in 1859. On the day after the firing on Fort Sumter he enlisted in the Commonwealth Artillery of Philadelphia; soon afterward was commissioned a lieutenant; became a member of the staff of Gen. Charles F. Smith, and afterward of Gen. Lew Wallace, when commanding the army of the Cumberland; and was taken prisoner in the battle of Shiloh and confined for four months in Selma prison. On his release and exchange he was promoted colonel, and appointed adjutant-general on the staff of Gen. Henry W. Halleck. At the close of the war he returned to Philadelphia, completed his interrupted law studies, and, after admission to the bar, was appointed assistant district attorney. In 1871 he was appointed by President Grant United States minister to Santo Domingo, and on his return became United States District Attorney for the Eastern District of Pennsylvania. He removed to New York city in 1881; was appointed by President Garfield a member of the Board of Indian Commissioners in 1882; and, as the Republican candidate in an overwhelmingly Democratic district, was defeated for Congress in 1891.

**Macomber, Francis Allen**, lawyer, born in Alabama, Genesee County, N. Y., April 5, 1837; died in Rochester, N. Y., Oct. 13, 1893. He received his early education in the academy at Wyoming, N. Y., and was graduated at the University of Rochester in 1859. He was a member of the Phi Beta Kappa Society, and received the degrees of A. M. and LL. D. He was admitted to the bar, and practiced law for seventeen years till 1878, when he was elected a justice of the Supreme Court of New York for the term of fourteen years. In 1892 he was re-elected for a like term by the unanimous choice of the Republican and Democratic parties. In 1889 he was assigned by the Governor to be one of the justices of the General Term of the Supreme Court, and upon his re-election he was continued as a member of that appellate court. For about twenty-three years, and till his death, he was an active member of the Board of Trustees of the University of Rochester, and during most of that time he was a member of its Executive Committee. Justice Macomber was a man of broad learning, a judge of high probity, sagacity, and profound wisdom. He won the affection and respect of his associates upon the bench and of his brethren at the bar, and had the confidence and esteem of all who knew him.

**Magrath, Andrew Gordon**, jurist, born in Charleston, S. C., Feb. 8, 1813; died there, April 9, 1893. He was graduated at South Carolina College in 1831, took a course in the Harvard Law School, and was admitted to the bar in 1835. In 1840 and 1842 he was elected to the Legislature, and then practiced law till 1856, when President Pierce appointed him United States district judge for South Carolina. He held this office till the election of Abraham Lincoln, when he re-



signed, and was elected a delegate to the convention which adopted the ordinance of secession. From the organization of the Confederate Government till November, 1864, he was one of the Confederate judges for South Carolina; then was elected Governor by the Legislature; and after Lee's surrender, in 1865, he was arrested by the Federal authorities, and confined in Fort Pulaski till December. Since the war he had confined himself to law practice.

**Mattson, Hans**, pioneer, born in Christianstadt, Sweden, in 1832; died in Minneapolis, Minn., March 5, 1893. When seventeen years old he entered the Swedish artillery, and after serving two years emigrated to the United States, where he picked up odd jobs in Boston and other cities for a year or two, was a cabin boy on a Southern steamer for nearly a year, and then made his way to Galesburg and Moline, Ill. In the latter place his father joined him with several Swedish companions, and the party pushed on to Minnesota, took up claims in Goodhue County, and founded the present flourishing community of Vasa. In 1857 the pioneers were swamped in the reaction from the Western land speculation, and Hans moved to Red Wing and began studying law. He was admitted to the bar in the following year, and elected county auditor in the next, and held the office till the second call for volunteers in 1861, when he organized a company of fellow Swedes, and as its captain was mustered into the Union service with the 3d Minnesota Volunteers. He served till the close of the war, received the surrender of Gen. Jeff. Thompson and his command at Batesville, Ark., in 1865, and attained the rank of colonel. In 1866 he became editor of the "Svenska Amerikaner" and a member of the State Board of Emigration; in 1869 was elected Secretary of State of Minnesota; in 1870-'73 was European agent for Jay Cooke; and in 1876-'81 was publisher of the "Stats Tidning" in Minneapolis, and an editor of the "Svenska Tribunen" in Chicago. In July, 1881, he was appointed by President Garfield United States consul-general in India, and it is said that his commission bore the last official signature of the murdered President. He remained in Calcutta two years; was re-elected Secretary of State in 1886 and 1888; and during the past two or three years had been engaged in the banking business.

**Mendes, Abraham Pereira**, clergyman, born in Kingston, Jamaica, Feb. 19, 1825; died in New York city, April 4, 1893. When twenty years old he was sent to London to be educated for the Jewish ministry, and there studied with Rabbi Mendola, then chief of the Portuguese and Spanish Jews in England, and with Rabbi D. A. de Sola, whose daughter he subsequently married. On receiving his diploma he returned to Jamaica and began preaching in Montega Bay, being one of the first rabbis to preach to the Jews in the English instead of the more common Spanish language. Soon afterward he returned to England, where he was successively rabbi of the congregation in Birmingham, President of Northwick College in London, and chief rabbi of the Portuguese and Spanish Jewish communities. In 1883 he came to the United States, and had since been rabbi of the congregation in Newport, R. I. Dr. Mendes was author of many religious works, including "The Post-Biblical History of the Jews" and "The Law of Moses," a catechism, and of several schoolbooks.

**Meriwether, David**, legislator, born in Louisa County, Va., Oct. 30, 1800; died near Louisville, Ky., April 4, 1893. He received a country-school education, became a fur trader when eighteen years old, was one of a party who built the first hut on the site of the city of Council Bluffs, and when twenty-one years old went to work on his father's farm in Kentucky. In 1832 he was elected to the Legislature, and by re-elections served for fifty-five years, besides holding other offices. In 1849 he was a member of the State Constitutional Convention; in 1852 was elected United States Senator for the unexpired term of Henry Clay; and in 1854-'57 was Governor of the Territory of New Mexico. In 1885 he was a candidate for the fourteenth

time for the Legislature, and, meeting his first defeat, retired from political life to his farm.

**Merrill, Margaret Manton**, journalist, born in England, in 1859; died in New York city, June 19, 1893. She came to the United States with her parents at an early age; was graduated at the University of Minnesota in 1876; spent a year in travel in Europe; and then undertook a course at the Women's Medical College in Chicago, but was forced by ill health to abandon it. After publishing a temperance paper in Denver she made an elocutionary and lecturing tour of Australia, worked as literary, art, and dramatic critic on several newspapers in San Francisco, and removed to New York city in 1887. Subsequently she became a successful writer of stories for children. Her most recent stories were "The Soul of a Violin" and "The Story of Sarah Jenkins." In 1892 she wrote and presented with success in New York and London a historical impersonation of Mary Queen of Scots the night before her execution.

**Millard, Henry B.**, physician and medical writer, born near Utica, N. Y., in 1833; died in Paris, France, Sept. 14, 1893. He was graduated at Hamilton College in 1855, and in medicine at the University of the City of New York in 1858; began practicing as a homeopath and as assistant to Dr. Gray, the leader of the "new school" in New York city; and returned to the allopath school in 1887. Among other offices he was Professor of the Practice of Medicine in the Medical College and Hospital for Women, and was a member of the State Board of Examiners. Dr. Millard was probably best known for his special study of diseases of the kidneys, and for his writings. His "Treatise on Bright's Disease of the Kidneys" gained the gold medal of the New York Medico-Chirurgical Society, and is a standard authority, and the "Millard Test for Albumin," therein given, met with general acceptance. Among the large number of his professional publications were: "A Monograph on Aconite," "The Climate and Statistics of Consumption," "A Paper on Diphtheria," "The Thermo-Cautery in Disease," "Researches in the Minute Anatomy of the Epithelia of the Kidney," "On the Exclusion of Albumin in the Diagnosis of Interstitial Nephritis," "Albumin and its Nomenclature and Tests, and the Significance of Albuminuria," "The Most Sensitive and Credible Tests for Albumin," "On the Treatment of Sciatica and Neuralgic Affections by Congelation with the Chloride of Methyl," "Cocaine as a Local Anæsthetic in the Use of the Thermo-Cautery," "The Habitat and Treatment of the Oxyuris or Ascaris Vermicularis," and "Artificial Alimentation in Cases of vomiting from Pregnancy."

**Moore, Orren C.**, journalist, born in New Hampton, N. H., Aug. 10, 1839; died in Nashua, N. H., May 12, 1893. He received a public-school education; learned the printer's trade; entered journalism, and in 1869 established the "Nashua Daily Telegraph," which he edited till his death. He was a representative in the General Court in 1873, 1874, 1875, and 1887; tax commissioner in 1877; State Senator in 1878-'79; chairman of the State Railroad Commission in 1884-'87; and was elected to Congress as a Republican in 1890, serving on the Committees on Pacific Railroads, on District of Columbia, and on Enrolled Bills. He was widely known as a political orator.

**Mordecai, Benjamin**, philanthropist, born in Charleston, S. C., in 1809; died in New York city, March 30, 1893. At the beginning of the civil war he was considered the wealthiest merchant in Charleston. He supported the Confederacy with great liberality, and organized a series of stores throughout South Carolina in which people could buy food and clothing at the cost of importation. After the war he spent some time in Canada, and, returning to South Carolina, gave his time and the remnant of his wealth to the development of local industries. Among other enterprises he established the great Kalmia cotton mill plant.

**Morgan, George Washington**, military officer, born in Washington County, Pa., Sept. 20, 1820; died in Fort Monroe, Va., July 27, 1893. In 1836 he enlisted in a



company raised by his brother for the Texan army, and, after reaching the rank of captain, resigned. In 1841 he entered the United States Military Academy, but left it before graduation to take up the study and practice of law at Mount Vernon, Ohio, where he subsequently lived. At the beginning of the Mexican War he was first appointed colonel of the 2d Ohio Volunteers, and afterward colonel of the 15th United States Infantry. He distinguished himself at Contreras and at Churubusco, where he was wounded, and returning home the Legislature voted him its thanks and brevetted him brigadier-general for his gallantry. In 1856 he was appointed United States consul at Marseilles, and from 1858 to 1861 he was United States minister to Portugal. He hastened home at the beginning of the civil war, was immediately commissioned a brigadier-general of volunteers, served first with Gen. Don C. Buell, and in March, 1862, was appointed commander of the 7th Division of the Army of the Ohio, with instructions to occupy Cumberland Gap. Subsequently he served under Gen. Sherman at Vicksburg, and, under assignment to the 13th Army Corps, commanded the force which captured Fort Hinman, Ark. In 1863 he resigned from the army on account of ill health; in 1865 was defeated as Democratic candidate for Governor of Ohio; and in 1866 and 1870 was elected to Congress, where he served on the Committees on Foreign Affairs, on Military Affairs, and on Reconstruction.

**Morton, Louis Mills**, chemist, born in Athol, Mass., in 1855; died in Auburndale, Mass., April 26, 1893. He was graduated at the Massachusetts Institute of Technology in 1875; continued his studies and received the degree of Ph. D. in the University of Göttingen in 1879; held the chair of Industrial Chemistry in the Institute of Technology in 1879-82.

**Mullaney, Patrick John** (known in religion as Brother *Azarias*), educator, born in Killemain, County of Tipperary, Ireland, June 29, 1847; died in Plattsburg, N. Y., Aug. 20, 1893. He removed to the United States in 1850, made his preparatory studies in the Academy of the Christian Brothers in Utica, entered the novitiate of that order in New York city in 1862, and finished his studies in Rock Hill College, near Baltimore. Directly afterward he became Professor of Mathematics in the college, and subsequently was its president for several years. In 1877 he went to Europe and spent much time in studying French and English literature. He returned to the United States in 1888, and became Professor of Rhetoric and English Literature in the De la Salle Institute, New York city, holding the chair till his death. He was one of the founders of the Catholic Summer School in Plattsburg, was an accomplished lecturer, and at the time of his death he had just finished a course of lectures at the Summer School. He was widely regarded as one of the highest authorities in the world on pedagogics. For many years he had been a voluminous writer of books and of essays for American and foreign magazines, including the "American Catholic Quarterly Review," the "North American Review," the "Forum," and the "Fortnightly" and "Contemporary" reviews of London. Among larger works he had published the "Philosophy of History," "Development of English Thought," "Style, as found in Herbert Spencer's Works," and "Phases of Thought and Criticism," and had in course of preparation "The History of Education from the Earliest Ages to the Present Day" and a "History of English Literature." Among his special lectures were; "Psychological Aspects of Education," before the Regents of the University of New York (1877); "Literary and Scientific Habits of Thought," before the International Congress of Education (1884); "The Relation of Church and State," before the Farmingham School of Philosophy (1890); and "Religion in Education," before the New York State Teachers' Association (1891).

**Murdock, James Edward**, actor, born in Philadelphia, Pa., June 25, 1811; died in Cincinnati, Ohio, May 19, 1893. He was a son of Thomas Murdock, a book-

binder, whose trade he learned and followed for a short time, abandoning it to prepare for the stage, for which he showed a natural taste. After several successful appearances on the amateur stage, he first came before the public as a professional on Oct. 13, 1829, when he played the part of Frederick in "The Lover's Vows," in the Arch Street Theater, Philadelphia. His first ventures with stock companies were disappointing, but he attracted the attention of Edwin Forrest, who, two or three years afterward, invited him to play the part of Pythias to his own Damon. This engagement gave him a hold on public regard, and till 1840 he appeared in the large cities in a variety of leading tragic and comic characters. In 1840, while managing the National Theater in Boston, he retired from the stage, and for five years applied himself closely to study, to lecturing, and to teaching elocution. In 1845 he reappeared in the Park Theater, New York city, as Hamlet, and in the next fifteen years was constantly before the public in the United States and in Europe. During the civil war he gave readings in all the large cities of the North for the benefit of the United States Sanitary Commission, nursed the sick and wounded Union soldiers, and for some time was a volunteer aid on the staff of Gen. William S. Rosecrans. After the war he retired to his farm near Cincinnati, where he engaged in grape growing. In 1879 he delivered a course of lectures before the Philadelphia School of Oratory. His most successful appearances were in the parts of Romeo, Charles Surface, Don Felix, Rover, Alfred Evelyn, and Vapid; and his last one was as Hamlet and Charles Surface at a benefit given him in Cincinnati on April 23, 1887. Mr. Murdock was associated with William Russell in the publication of "Orthophony, or Culture of the Voice" (Boston, 1845), and "The Stage" (Philadelphia, 1880).

**Neill, Edward D.**, clergyman, born in Philadelphia, Pa., in 1823; died in St. Paul, Minn., Sept. 26, 1893. He was educated at Amherst College and at the University of Pennsylvania, and became the first Protestant clergyman in Minnesota in 1849. He was author of historical works, notably a "History of Minnesota," first published in 1875; 8th edition, 1893.

**Newell, MoFadden Alexander**, educator, born in Belfast, Ireland, Sept. 7, 1824; died in Havre de Grace, Md., Aug. 14, 1893. He was graduated at Trinity College, Dublin; was for some time a tutor in the family of the Earl of Dufferin; removed to the United States in 1848; was Professor of Natural Science in Baltimore City College in 1850-'54; and subsequently held the same chair in Lafayette College. In 1865 he was appointed Principal of the Maryland State Normal School; in 1868, State Superintendent of Public Instruction; and in 1877 was President of the National Educational Association. Prof. Newell was associated with Prof. William R. Creery in editing "The Maryland Series" of school text-books, was sole author of several similar works, including six "Newell Readers," and for a long time was editor of the "Maryland School Journal."

**Newhall, James Robinson**, historical writer, born at Lynn, Mass., Dec. 25, 1809; died there, Oct. 24, 1893. He was a lineal descendant of Thomas Newhall, the first white child born in Lynn, and in 1824 was apprenticed to the printer's trade in the office of the Salem "Gazette." Subsequently he was foreman in a book-publishing house in Boston, and a newspaper editorial writer in New York city. In 1847 he was admitted to the bar, and afterward practiced in Lynn, and held a judgeship for thirteen years. His publications included "The Essex Memorial" (1838); "Lou: or the Jewels of the Third Plantation" (1862); "The History of Lynn" (1865); and the "Centennial Memoir of Lynn" (1876).

**Newson, Thomas McLean**, author, born in New York city, Feb. 22, 1827; died in Malaga, Spain, March 30, 1893. He learned the printer's trade in the office of the "Derby Journal" in Birmingham, Conn.; established the first daily penny newspaper in Connecticut; was secretary of the first editorial association



there, and became active as a politician and lecturer. In 1853 he removed to St. Paul, Minn.; in the following year established the "Daily Times" there; and in 1856 was the sole representative of the newly formed Republican party in its first national convention. On Nov. 26, 1862, he was commissioned captain and commissary of subsistence in the Union army; fitted out Gen. Sibley's Indian expedition with nearly 400,000 rations; became chief of the commissariat at St. Cloud, where he supplied twelve different military posts; and afterward was on duty at Forts Ripley and Snelling. In 1866 he commanded a company which explored the Vermilion lake region, prospecting for precious metals, and later he spent much time prospecting in the Black Hills. President Harrison appointed him United States consul at Malaga, Spain, in the summer of 1891, and he died at his post. He was author of "Thrilling Scenes among the Indians," drawn from personal observations; "Pen Pictures and Biographical Sketches of Old Settlers of St. Paul from 1838 to 1857"; "Recollections of Eminent Men"; "Indian Legends"; and "Heleopa."

**Nussbaum, Isaaq**, philanthropist, born in Bavaria; died in Albany, N. Y., May 21, 1893. He came to the United States in 1843; was aid-de-camp to Gov. Horatio Seymour in 1862-'64; was also on the staffs of Govs. Hoffman, Tilden, and Robinson; and founded the Jewish Home for the Aged in Albany.

**Osborne, Edward B.**, journalist, born in Northampton, Mass., Aug. 3, 1814; died in Albany, N. Y., July 20, 1893. When thirteen years old he was apprenticed to the printer's trade in the office of the Northampton "Gazette." In 1836 he became publisher of the Quincy "Patriot," which supported John Quincy Adams in his canvass for Congress; then went to the Danbury "Times" in the same capacity and remained till 1853; removed to Poughkeepsie; purchased the "American"; changed its name to the "Dutchess County Democrat," and combined it with the "Telegraph" in 1856; and was editor of the latter newspaper till 1883, when he retired from active business. He was a member of the New York Assembly in 1884-'85 and 1889; clerk of Dutchess County in 1886-'89; and State Senator in 1890-'92, obtaining his seat after a contest.

**Otis, Charles G.**, manufacturer, born in Troy, N. Y., in 1831; died in Brooklyn, N. Y., Aug. 7, 1893. He was the elder of the two sons of Elisha G. Otis, who in 1854 established in Yonkers, N. Y., the nucleus of the present great elevator works. He entered his father's factory about 1856, and was joined by his brother, Norton P. Otis, in 1858. On the death of their father, in 1861, the sons conducted the business till 1867, when, in consequence of the great demand for passenger and freight elevators caused by the erection of monster buildings, they organized a stock company, of which Charles became president and Norton secretary and treasurer. The company was highly successful, repeatedly enlarged its plant, built branch works in Chicago to accommodate its business in the Western States, and placed its elevators in nearly every large city in the world. Probably the most noted success of the company was the equipment with its elevators of the Eiffel Tower at the Paris Exposition in 1890.

**Owens, John G.**, archaeologist, born in Louisburg, Pa., in 1866; died in Honduras, Central America, Feb. 18, 1893. He was graduated at Bucknell University in 1887; had been a teacher in the South Jersey Institute; was completing his third year as a graduate student in Harvard; and at the time of his death was in charge of the Honduras expedition under the auspices of the Peabody Museum of American Archaeology and Ethnology of Harvard University. Early in the previous winter he had explored the ancient ruined city of Copan, and on his last expedition he had made special explorations of the old city of Quiragua and taken molds of the great carved monoliths or stone idols of that neighborhood, from which casts were to be made and set up as supplementary to the ruins of Yucatan on the exhibition grounds in Chicago.

**Pardee, Dwight Whitfield**, jurist, born in Bristol, Conn., Feb. 10, 1822; died in Hartford, Conn., Oct. 6, 1893. He was graduated at Trinity College in 1840; served two terms as State Senator; was judge of the Superior Court of Connecticut in 1863-'74; an associate justice of the Supreme Court of the State in 1874-'89; and then declined reappointment.

**Parsons, George Frederic**, journalist, born in Brighton, England, June 15, 1840; died in New York city, July 19, 1893. He was educated by private tutors, apprenticed in the mercantile marine service in 1856, and promoted to first mate before reaching his majority. In 1862 he went with his father to British Columbia, attracted by the Fraser river gold excitement, and, failing in his first business venture, established and edited for two years the "North Pacific Times." He removed to San Francisco in 1865, and for seventeen years was engaged in editorial work in that city and in Sacramento. In 1882 he removed to New York city, and became an editorial writer on the "Tribune" and a contributor to various publications. Mr. Parsons had collected a valuable library, especially of works relating to witchcraft and occultism.

**Patterson, James Willis**, Senator, born in Henniker, N. H., July 2, 1823; died in Hanover, N. H., May 4, 1893. He was graduated at Dartmouth in 1848, and studied for the ministry, but was not ordained. He was a tutor in Dartmouth in 1852-'54, Professor of Mathematics there in 1854-'59, and Professor of Astronomy in 1859-'65. He was Secretary of the State Board of Education for five years. He was a member of the New Hampshire Legislature in 1862, was then elected to Congress as a Republican, and in 1866 was chosen United States Senator for the term ending March 4, 1873. He was author of the bill constituting consular clerkships, and also of that establishing colored schools in the District of Columbia, and was chairman of the Committee on Retrenchment and Reform, and of that on the District of Columbia. In 1872 it was discovered that various members of Congress had held stock in a joint stock company called the Crédit Mobilier of America, which had been the construction company of the Union Pacific Railroad; and this was held to be highly improper, because the value of the stock might be greatly affected by their votes. An investigation was ordered, which in the House of Representatives resulted in the formal censure of two members. The report of the Senate committee (Feb. 27, 1873) closed with a resolution to expel Senator Patterson, but the resolution was not adopted, and in a few days his term expired. Later and very thorough investigation shows that Mr. Patterson's supposed connection with the affair can all be explained, and that the committee's report, in seeking to make a scapegoat of him, was grossly unjust. He had been a regent of the Smithsonian Institution in 1864-'65, and a delegate to the loyalist convention in Philadelphia in 1866. In 1877 and 1878 he was again a member of the Legislature of his State, and in 1885 he was appointed State Superintendent of Public Instruction, which office he held as long as he lived. Iowa College gave him the degree of LL. D. in 1868. Mr. Patterson made a fine appearance on the platform, and was one of the most agreeable and convincing of orators. In 1880 he delivered the address at the unveiling of the soldiers' monument in Marietta, Ohio.

**Peabody, Andrew Preston**, educator, born in Beverly, Mass., March 19, 1811; died in Boston, Mass., March 10, 1893. He was graduated at Harvard in 1826, and at its Divinity School in 1832; then spent a year as tutor in mathematics in the college; and in 1833 was chosen junior pastor of the South Unitarian parish in Portsmouth, N. H., and within three weeks became sole pastor. He held this charge without interruption till 1860, when he succeeded Bishop Huntington as Plummer Professor of Christian Morals in Harvard, and also as preacher to the college, and held these offices till 1881, when, resigning to give his whole attention to a mass of literary work he had in preparation, he was unanimously elected professor emeritus. He received the degree of D. D. from Harvard Col-



lege in 1852, and LL. D. from the University of Rochester in 1863. Twice while holding his professorship in Harvard he was acting president. He was a frequent contributor to the "Whig Review" in 1837-'59; was editor of the "North American Review" in 1852-'61; and was a periodical contributor to the "Christian Examiner," the "New England Magazine," the "American Monthly," and to other publications of a religious and educational character. Among his numerous books were: "Lectures on Christian Doctrine" (Boston, 1844); "Sermons of Consolation" (1847); "Conversation: Its Faults and its Graces" (1856); "Christianity the Religion of Nature" (1864); "Sermons for Children" (1866); "Reminiscences of European Travel" (New York, 1868); "Manual of Moral Philosophy"; "Christianity and Science" (Boston, 1874); "Christian Belief and Life" (1875); "Harvard Reminiscences" (1888); and "Harvard Graduates whom I have known" (1890).

**Peters, John C.**, bacteriologist, born in New York city in 1819; died in East Williston, Long Island, N. Y., Oct. 21, 1893. He was graduated at the New York College of Physicians and Surgeons; took post-graduate studies in Berlin and Vienna; and had been in practice in New York city since 1842, beginning as a homœopath and becoming an allopath. For many years he had made a special study of Asiatic cholera, and he had collected the largest library on that subject in the United States. He assisted Dr. Edmund C. Wendt in preparing a treatise on cholera, and in 1866 published "Notes on Asiatic cholera," which has become a standard work. In 1873 he visited the cholera-stricken cities in the Southern and South-western States, and his report was published by order of Congress. Five years afterward he rendered invaluable service in checking the spread of yellow fever. He suggested new remedies in the treatment of consumption, Bright's disease, and membranous croup; published treatises on diseases of the brain and nervous system; assisted Dr. A. S. Wotherspoon in translating Rokitansky's "Pathological Anatomy"; and published "Materia Medica" (1856-'60).

**Peters, Thomas McClure**, clergyman, born in Boston, Mass., June 6, 1821; died in Peekskill, N. Y., Aug. 12-13, 1893. He was graduated at Yale University in 1841, and at the General Theological Seminary of the Protestant Episcopal Church in New York city in 1847; and was ordained on June 27 of the latter year. He had been a lay reader in the parish of St. Michael, New York city, since 1842, and after ordination he was chosen assistant rector there, and on Sept. 25, 1858, rector. He held this charge till his death, and also that of archdeacon of the diocese of New York from 1892. He received the degree of S. T. D. from Trinity College, Hartford, in 1865. Dr. Peters was a founder of the City Mission, and of the Sheltering Arms; president of the Children's Fold, the Shepherd's Fold, and the Home of Rest for Consumptives; director of the Manhattan Hospital; and member of the New York Historical and Genealogical Societies.

**Pillsbury, Gilbert**, abolitionist, born in Hamilton, Mass., Feb. 23, 1813; died in North Abington, Mass., Jan. 3, 1893. He was a brother of Parker Pillsbury, and was graduated at Dartmouth College in 1840. Prior to the beginning of the civil war he taught in the Ellington (Conn.) Academy, and in New Jersey; and with his wife founded and conducted a young ladies' seminary in Ludlow, Mass. He was also an earnest member of the band of Massachusetts abolitionists, and made many sacrifices for the anti-slavery cause. On the organization of the Freedmen's Bureau he was appointed one of its agents, and assigned to duty, first at Hilton Head, and afterward at Charleston. With his wife he was active in the work of educating the freedmen; and at Charleston he was placed in charge of the orphan asylum, and also of abandoned property. During the reconstruction period he aided in framing the new Constitution of South Carolina; was Mayor of Charleston three years; and at the close of his term was presented by the citizens with a gold watch and a gold-headed cane.

**Pinneo, Timothy Stone**, grammarian, born in Milford, Conn., Feb. 18, 1804; died in Norwalk, Conn., Aug. 2, 1893. He was graduated at Yale in 1824, and later in the medical department; practiced in the South for several years; became Professor of Belles-lettres in Marietta College, Ohio; and on removing to Cincinnati began compiling text-books on grammar which greatly simplified that study. He published about fifty books in all, and most of them were translated into foreign languages, including Japanese. His principal works were "Pinneo's Series of Grammars," "Pinneo's False Syntax," "Pinneo's Composition Book," and all but the first of the series of "McGuffey's Readers."

**Pixley-Fulford, Annie**, actress, born in New York city, in 1855; died in London, England, Nov. 8, 1893. She was educated at the Convent of Notre Dame, in San José, Cal., and made her first appearance in public as a singer in an amateur entertainment in San Francisco. A juvenile concert troupe was organized, consisting of Annie, her sisters Minnie and Lucy, and their brother Augustus, and successful entertainments were given in the principal mining towns of California, and in Oregon and British America. In 1871 she married Robert Fulford, and in 1876 she made her first appearance on the dramatic stage, in "Snowflake," in the San Francisco Grand Opera House. She and her husband played together in a stock company for three years; then she bought a dramatization of Bret Harte's "M'liss," and set out on a starring tour, with her husband as business manager. She first appeared in this play in New York city on Sept. 23, 1878, at Niblo's, and in the next ten years presented it with great financial success in all the large cities. She then produced "The Deacon's Daughter," and alternated that with "M'liss" and a season of comic opera in 1891 till shortly before her death.

**Prescott-Shepherd, Marie**, actress, born in Paris, Ky., in 1853; died in New York city, Aug. 28, 1893. She was a daughter of Judge Victor Prescott, and made her first appearance on the stage as Lady Macbeth in the Grand Opera House, Cincinnati, in 1876. Her success in this led to a longer engagement, in which she played the parts of Lady Teazle, Lady Gay Spanker, and Meg Merrilies. In the following year she went to the Brooklyn Theater, playing Mother Fadet to Maggie Mitchell's "Fanchon"; and when Miss Mitchell played a round of her favorite characters in the Standard Theater, New York city, Miss Prescott supported her. Subsequently she supported John McCullough as leading woman, and Salvini; appeared in "Rose Michel"; produced "Vera, the Nihilist," by Oscar Wilde, and "A Moral Crime" at the Union Square Theater; and in 1886 began a starring tour of Western and Southern cities, with Robert D. Shepherd, known on the stage as Robert D. McLean (whom she married in 1892), producing Shakespearean plays chiefly. In 1892 she and her husband appeared in two of her adaptations, "Cleopatra," and "L'Absintheur."

**Puttkamer, Albert von**, clergyman, born in Potsdam, Germany, Oct. 4, 1806; died in West Farms, N. Y., March 21, 1893. Graduating at the Military Institute in Berlin, he was commissioned a 2d lieutenant in the King's Guard. In 1836 he resigned, removed to the United States, and became a teacher in Lawrenceville, N. Y. The following year he was received into the Baptist Church, and, with an appointment as agent and colporteur of the Tract Society, engaged in missionary work among his fellow-countrymen. In New York city he organized the First German Baptist Church, which was the first church exclusively for Germans in that denomination organized in the United States, and after ordination became its pastor. Subsequently he organized the German Baptist Church in Buffalo, and was its pastor fourteen years, and similar churches in Cincinnati and Albany, remaining with the latter eleven years. At the beginning of the civil war he entered the Union army as a chaplain, but soon afterward exchanged the commission for that of a captain of artillery under Gen.



Hunt. He took part in several engagements, and in the battle of Chancellorsville commanded three batteries. Soon after this battle he resigned, and resumed his pastorate in Albany. About 1882, on the occasion of a reunion of the Puttkamer family, he revisited his former home, and was astonished by an announcement that during his residence in the United States he had inherited and then forfeited by his absence the large family estate in Pomerania, which included about 50 villages, and yielded a vast revenue. The property had been secured by a relative, who successfully resisted dispossess measures, and refused to make him an allowance of \$4,000 per annum, which he agreed to take in lieu of his claim. He then returned to the United States, and continued in the ministry till 1888, when the infirmities of age led him to retire.

**Queen, Walter W.**, naval officer, born in Washington, D. C., Oct. 6, 1824; died there, Oct. 24, 1893. He was appointed a midshipman in the United States navy, Oct. 7, 1841; was promoted passed midshipman, Aug. 10, 1847; master, Sept. 15, 1855; lieutenant, the following day; lieutenant-commander, July 16, 1862; commander, July 25, 1866; captain, June 4, 1874; commodore, Feb. 9, 1884; rear-admiral, Aug. 28, 1886, and was retired Oct. 6, 1886. During his naval career he was on sea service eighteen years, on shore or other duty sixteen years, and was unemployed seventeen years. In the Mexican War he was attached to the frigates "Cumberland" and "Ohio"; served in the fort at Point Isabel during the battles of Palo Alto and Resaca de la Palma; and took part in the attacks on Alvarado, Tampico, Tusan, and Vera Cruz. In 1848 he was dismissed from the navy for fighting a duel, but in 1853 he was reinstated. During the civil war he participated in the re-enforcement of Fort Pickens; commanded the 2d Division of Porter's mortar flotilla in the bombardment of Forts Jackson and St. Philip in April, 1862, and in the attack on Vicksburg in June, 1863; and commanded the gunboat "Wyalusing" in the engagement with the Confederate ram "Albemarle" and her consorts "Bombshell" and "Cotton Plant" on May 5, 1864, when the ram, to prevent capture, sought refuge in Roanoke river. His last service was as commandant of the navy yard at Washington, D. C., in 1885-'86.

**Reason, Charles L.**, educator, born in New York city, of free colored parents, refugees from Hayti, in July, 1818; died there, Aug. 16, 1893. He was educated in the old Quaker school in Mulberry Street, and in 1832 became a teacher in the Quaker school in Laureus Street. With his salary he paid for advanced private instruction, and became an accomplished mathematician and linguist. In 1836 he was appointed a teacher in a school for colored children, conducted as a part of the public-school system. For thirty years he was principal of Colored Grammar School No. 2, and since 1888 had been principal of Grammar School No. 80. In all, he had been a public-school teacher for fifty-seven years, and was, in point of service, the oldest public-school teacher in New York city.

**Reynolds, Lovell K.**, naval officer, born in Keokuk, Iowa, in 1857; died in Washington, D. C., Feb. 16, 1893. He was appointed a cadet in the United States Naval Academy, from Alabama, June 5, 1871; was graduated, June 20, 1876; promoted ensign, Dec. 28, 1878; lieutenant in the junior grade, Jan. 9, 1886; and lieutenant, June 25, 1891; and had been in command of the United States Coast-Survey steamer "Endeavor" since July 26, 1890. On Nov. 24, 1879, the "Constellation," to which he was attached, sighted the Hungarian bark "Olivia" in distress in a heavy storm off the Azores. Ensign Reynolds volunteered to go to the relief of the ship with a boat's crew, and reached the "Olivia" in time to rescue her captain and crew of eleven men. For this heroic act he received the thanks of the Austrian Government and the decoration of the Royal and Imperial Order of Francis Joseph, the Life-Saving Benevolent Association of New York presented him with a gold medal,

and he was also given the special medal authorized by Congress for rescuing life. Subsequently he was a member of the Greely Relief Expedition, and was one of the first to reach the survivors.

**Roberts, Milton Josiah**, surgeon, born in Norwalk, Ohio, in 1850; died in New York city, April 26, 1893. He was educated at Cornell University, and, in medicine, at the University of the city of New York; became an assistant of Prof. Sayre, under whom he developed a special taste for orthopædic surgery, and, in surgical operations, of Dr. George M. Beard; was appointed Professor of Orthopædic Surgery in the University of Vermont, visiting orthopædic surgeon to the city hospitals on Randall's Island, and consulting orthopædic surgeon to the Woman's Hospital in Brooklyn; and established and edited the "Annals of Surgery," a technical periodical of high merit. He also invented a number of devices and apparatus to facilitate surgical work and to relieve deformities and suffering, notably a spinal corset.

**Robinson, Alfred Peter**, jurist, born in Georgetown, Del., Feb. 17, 1842; died there, March 1, 1893. He was admitted to the bar of Sussex County in April, 1863; began practicing in partnership with his father, and continued alone after the latter's death, in 1866; was appointed Deputy Attorney-General in 1875; and became Chief Justice of Delaware, Jan. 26, 1893.

**Robinson, William Mattison**, journalist, born in Meredith, N. H., in 1840; died in New Orleans, La., Aug. 18, 1893. He was apprenticed to the printer's trade, and worked at the case and on newspapers in Boston till the beginning of the civil war, when he enlisted in the 8th Massachusetts Battery. Subsequently he joined the 10th United States Heavy Artillery, with which he won the brevet rank of major. After the war he settled in New Orleans, re-entered journalism, and was engaged in it till his death, serving many years on the staff of the "Republican," and for the last thirteen on that of the "Picayune." During his residence in New Orleans he held several Federal and State offices.

**Roots, Logan H.**, philanthropist, born in Perry County, Ill., March 26, 1841; died in Little Rock, Ark., May 30, 1893. He became principal of the high school in Duquoin, Ill., in 1861; was graduated at the Illinois State Normal University in 1862; aided in organizing and enlisted in the 81st Illinois Volunteers immediately after leaving the university; was chief depot commissary for General Sherman's army on its march to the sea; and served to the close of the war. He then settled in Arkansas, engaged in planting and trading, became active in politics after the passage of the reconstruction acts, and was elected to Congress from the 1st Arkansas District as a Republican in 1866 and 1868. On the expiration of his second term he applied himself to the development of Arkansas, and acquired an estate valued at \$1,400,000. In his will he directed that his estate be held intact till the year 1914, one half of the income up to that time going to his wife and daughters, one tenth to be applied to charitable and humanitarian purposes, two tenths to a brother and sister, the remaining two tenths to be invested. He authorized the income of \$20,000 to be paid to the city of Little Rock for the period of twenty years for the support of the poor and needy, and directed that after the year 1914 the residue of his estate, after payment of specific legacies of \$500,000, be paid to the city for park and hospital purposes, provided the State, county, or city will raise an equal fund, otherwise the proposition to be made to the city of Hot Springs or Eureka Springs. It was thought that the residue would amount to about \$700,000.

**Rusk, Jeremiah McLain**, agriculturist, born in Morgan County, Ohio, June 17, 1830; died in Viroqua, Wis., Nov. 21, 1893. He received a common-school education, was brought up on a farm, and on removing to Vernon County, Wis., in 1853, was successively engaged in farming and in conducting a hotel. In 1855 he became sheriff, and in 1861 was sent to the Legislature. Early in 1862 he raised the 25th Wisconsin



Volunteer Infantry for the National army, and accompanied it to the front as its major. He was promoted lieutenant-colonel in August, 1863, and as commander of the regiment took part in Sherman's Meridian campaign and in movements connected with the Atlanta campaign. After the death of Gen. McPherson he held the command on the front, and in the march to the sea had the advance of the 17th Corps. He was complimented in general orders for his services; was brevetted colonel and brigadier-general, to date from March 13, 1865; and on being mustered out of the service, in June following, was presented with a handsome testimonial by the officers of his regiment. Returning home, he was elected bank comptroller of Wisconsin in 1865 and 1867, and member of Congress, as a Republican, in 1871, 1873, and 1875. While in Congress he served as chairman of the Committee on Pensions; opposed the back-pay bill, and after it had passed covered his back pay into the Treasury. In 1881 he was elected Governor of Wisconsin, and in 1884 and 1886 was re-elected. While Governor, he suppressed an anarchist outbreak by ordering the militia to fire on the crowd the moment violence was attempted, and in a threatened railroad riot refused to call out troops, declaring that the men on strike needed bread, not bayonets, and forced a settlement of the claims of the discontented workmen. In 1888 he was a candidate for the Republican nomination for President, and after the election of Gen. Harrison Gen. Rusk was appointed secretary of the newly created Department of Agriculture, and he held the office to the close of President Harrison's Administration. For a portrait, see "Annual Cyclopædia" for 1889, page 804.

**Sanford, Edward Isaac**, jurist, born in New Haven, Conn., in 1826; died there, July 13, 1893. He was graduated at Yale College in 1847, and at its law school a few years afterward; was a State Senator in 1864-'65; was appointed a judge of the Superior Court of Connecticut by Gov. English in 1867; and held the office till the legislative dead-lock in 1890-'91, when Gov. Bulkeley renominated him, but he was not confirmed.

**Saulsbury, Eli**, lawyer, born in Mispillion Hundred, Kent County, Del., Dec. 29, 1817; died in Dover, Del., March 22, 1893. He was the fourth of five sons of William Saulsbury, a farmer; received a public and private school education; took a partial course at Dickinson College; studied law with his youngest brother, Willard, afterward Chancellor of the State and United States Senator; and was admitted to the bar in 1845. He settled in Dover to practice, and soon entered political life. In 1853 and 1854 he was elected to the Legislature; in 1871 to the United States Senate, to succeed his brother Willard; and in 1876 and 1883 was re-elected Senator. In the Senate he opposed the act to enforce the provisions of the 14th amendment to the Federal Constitution, and the presence of Federal troops at the organization of the Louisiana Legislature. His last service was as chairman of the Committee on Engrossed Bills, and as member of the Committees on Foreign Relations, on Post-Offices and Post Roads, and on Privileges and Elections. The contest in Delaware in 1871 for the United States senatorship was in many respects remarkable. Willard Saulsbury was a candidate for re-election, and had the support of Sussex County. His brother Gove, who had just completed his term as Governor, was put in nomination by Kent County. New Castle County was divided, part of the delegates favoring Willard, another part Gove, and a third part hoped for a compromise candidate, and suggested Eli. On the first and second ballots the vote stood 14 for Gove, 13 for Willard, and 3 for Eli. The latter then consented to stand as compromise candidate against his two brothers, and on the fourth and last ballot won by a vote of 16 to 14 for Gove.

**Sawyer, Henry W.**, civil war veteran, born in Lehigh County, Pa., in 1827; died in Cape May, N. J., Oct. 16, 1893. He was a member of the 1st New Jersey Cavalry; was one of the guards selected to protect the

national Capitol on the night of April 19, 1861; and was taken prisoner by the Confederates in the battle of Brandy Station, June 9, 1863, and sent to Libby Prison. While in confinement he and Capt. Flynn, of the 51st Indiana Volunteers, were drawn by lot to be executed, but both were saved by the interference of a Roman Catholic priest as the men were riding on their coffins to the place of execution. President Lincoln heard of the case, and notified the Confederates that he would cause two Confederate prisoners to be shot if Flynn and Sawyer were executed. Mr. Sawyer was subsequently exchanged, reached the rank of colonel, and received a medal and the thanks of Congress. For many years he was superintendent of the Life-Saving Service on the New Jersey coast.

**Schaff, Philip**, clergyman, born in Coire, Canton Graubünden, Switzerland, Jan. 1, 1819; died in New York city, Oct. 20, 1893. He was graduated at the University of Berlin in 1841, after taking courses in Coire College, Stuttgart Gymnasium, and the Universities of Tübingen and Halle, and then spent a year in European travel as tutor to a Prussian nobleman. In 1842 he returned to the University of Berlin as lecturer on Biblical exegesis and Church history; in 1844 was ordained in Elberfeld, and the same year removed to Mercersburg, Pa., under appointment as professor in the theological seminary of the German Reformed Church of the United States. Within a year he was placed on trial for heresy, because of the liberal opinions expressed in his opening address on "The Principle of Protestantism as related to Romanism and the Present State of the Church," but was acquitted by the Synod of York, Pa., and continued his relations at the seminary till 1863. In 1854 he was selected to represent the German Reformed Church of the United States at the ecclesiastical diet in Frankfurt, and at the Swiss pastoral conference in Basel; and while in Europe he lectured on "America" in Berlin and other cities, and received the degree of D. D. from the University of Berlin. His work at Mercersburg terminated in 1863, when the seminary building was turned into a military hospital. He then removed to New York city, where, in 1864, he was appointed secretary of the Sabbath Committee, and during the five years that he held this office he lectured on Church history at the theological seminaries in Andover, Hartford, and New York city. He also revisited Europe twice during this period, in 1865 and 1869. In 1870 he was elected Professor of Sacred Literature in Union Theological Seminary, New York city, an office he held actively till the spring of 1893, when he was retired as professor emeritus. He was one of the founders and honorary secretary of the American branch of the Evangelical Alliance, and went to Europe in 1869, 1872, and 1873 to arrange for the general conference of the Alliance, which was held in New York city in October, 1873. In 1871 he was one of the delegates of the Alliance to plead with the Emperor of Russia for a concession of religious liberty to Russian subjects in the Balkan provinces; in 1875 a delegate to the meeting in London which organized the Alliance of the Reformed Churches, and two years afterward to its first general council, in Edinburgh; in 1880 was chairman of the programme committee for the second general council in Philadelphia; and in 1879 and 1884 was a delegate to the general conferences of the Evangelical Alliance in Basel and Copenhagen respectively. When the English Committee on Bible Revision was organized the members sought Dr.





Schaff's co-operation, and on the organization of the American committee in 1871 he was chosen its president. To this great work he applied himself with unflagging zeal, and when the actual revision was finished he was sent to England to arrange for its publication. While on this mission, in 1875, he attended a conference of the Old Catholics, Greeks, and Protestants, in Bonn, called with a view to promote Christian unity among those Churches. Two years previously he had sought to arouse interest in plans for Church unity by establishing the "Kirchenfreund," a German monthly periodical. In 1888 he founded the American Society of Church History, and became its first president. He also was engaged with Prof. Henry B. Smith in editing the "Philosophical and Theological Library." His last public appearance was at the Parliament of Religions in Chicago, in September, 1893, where, though suffering from a paralytic stroke, he was anxious to raise his voice in behalf of religious liberty. With all his exacting duties Dr. Schaff was an indefatigable editor and writer. He edited the Anglo-American adaptation of Lange's "Critical, Theological, and Homiletical Commentary on the Bible," in 25 vols. (New York and Edinburgh, 1864-'80; new edition, 1886); the "Popular Illustrated Commentary on the New Testament," in 4 vols. (New York and Edinburgh, 1878-'83; reissued as "International Revision Commentary on the New Testament," New York, 1882 *sqq.*); with Arthur Gilman, "Library of Religious Poetry" (New York, 1881; new edition, 1886); "The Schaff-Herzog Encyclopædia of Religious Knowledge," 3 vols. (New York and Edinburgh, 1884); and other works. His best-known individual writings are: "History of the Apostolic Church" (Mercersburg, 1851); "History of the Christian Church" (New York, 1858 *sqq.*); "The Creeds of Christendom" (New York and London, 1877; 4th ed., 1884); "A Companion to the Greek Testament and the English Version" (New York and London, 1883; revised edition, 1885); "Bible Dictionary" (Philadelphia, 1880; 3d ed., revised, 1885); "Historical Account of the Work of the American Committee of Revision of the English Version" (1885); "Church and State in the United States" (1888); "The Renaissance" (1891); and "A General Introduction to the Study of Theology, Exegetical, Historical, Systematic, and Practical" (1893).

**Schofield, John**, jurist, born in Clark County, Ill., in 1834; died in Marshall, Ill., Feb. 13, 1893. He was brought up on a farm; studied law and taught a district school in 1851-'54; and was graduated at the Louisville Law School, admitted to the bar, and elected State attorney for the 4th Judicial Circuit in 1856. In the latter year also he became active in politics and made speeches for James Buchanan. He was elected to the Legislature in 1860, and to the State Constitutional Convention in 1869; was general solicitor for Illinois for the Vandalia Railroad Company in 1870-'73; was elected judge of the Supreme Court of Illinois in 1873, and re-elected in 1879 and 1888.

**Scudder, Edward W.**, jurist, born in Scudder's Falls, Mercer County, N. J., Aug. 12, 1822; died in Trenton, N. J., Feb. 3, 1893. He was graduated at the College of New Jersey in 1841; studied law with William L. Dayton, and was admitted to the bar in 1844; was a State Senator in 1863-'65, and president part of that time; was appointed a judge of the Supreme Court of New Jersey in 1869, and was re-appointed in 1876, 1883, and 1890.

**Seaton, Henry E.**, botanist, born in Indianapolis, Ind., April 15, 1869; died in Cambridge, Mass., April 30, 1893. He was graduated at Wabash College in 1890; immediately appointed first assistant to his teacher, Prof. John M. Coulter, the botanist, went to the University of Indiana as instructor in botany and curator of the herbarium when Prof. Coulter was elected president of the institution in 1891; and accompanied a scientific expedition to Mexico, where he made a collection of plants on Mount Orizaba, in the summer of that year. On his return, and while preparing his report for publication, he spent some time in the Har-

vard herbarium, comparing some of its specimens with his collections. While so engaged his methods of work attracted much attention, and led to his being offered the post of assistant curator of the Gray Herbarium, which he accepted in September, 1892. The results of his botanical researches were embodied in two papers published in the "Proceedings" of the American Academy of Arts and Sciences.

**Seney, George Ingraham**, financier, born in Astoria, Long Island, N. Y., May 12, 1826; died in New York city, April 7, 1893. He was graduated at the University of the City of New York in 1847. After being employed in several banks in New York city and Brooklyn, he was appointed paying teller in the Metropolitan Bank of New York in 1853. He was made cashier in 1857, and president in 1877, and held the latter office till the suspension of the bank in 1884. At this time he had acquired a large fortune and a wide reputation for benevolence. As the suspension of the bank was caused by the failure of a brokerage firm in which members of his family were interested, he immediately resigned the office of president and conveyed to the bank his costly residence in Brooklyn, and other property, including many paintings. Subsequently he aided largely in bringing about the resumption of the bank, and resided in New York city. A few years before the failure he had become interested in railway operations, principally in the South and West, and in 1883-'84 he managed the construction of the New York, Chicago and St. Louis Railroad, popularly known as the "Nickel-plate" road, which was sold and became a part of the Vanderbilt system. His early railway operations were not successful, but he was credited with having made a large fortune with the Nickel-plate venture. In his most prosperous days, or between 1879 and 1884, he gave away about \$2,000,000, his principal gifts being \$500,000 for the establishment of the Seney Hospital in Brooklyn; \$500,000 to Wesleyan University; \$500,000 for the establishment of the Methodist Orphan Asylum in Brooklyn; \$250,000 to Emory College and Wesleyan Female College in Macon, Ga.; \$100,000 to the Long Island Historical Society; \$60,000 to the Brooklyn Library; \$50,000 to the Drew Theological Seminary in Madison, N. J.; \$25,000 to the Industrial School for Homeless Children in Brooklyn; and \$25,000 to the Brooklyn Eye and Ear Infirmary. In 1885 he sold at auction 285 paintings, for which he received \$406,910; and in 1887, after he had again begun collecting, he presented twenty valuable paintings to the Metropolitan Museum of Art.

**Seymour, Mary F.**, journalist, born in Aurora, Ill., in 1847; died in New York city, March 21, 1893. She was educated in Wilbraham, Mass., and in Somerville, N. J.; became a public-school teacher in Jersey City, N. J.; resigned on account of ill health, and studied law and stenography; was the first woman ever appointed a commissioner of deeds in New Jersey; and was one of the first to obtain employment in a business office as a stenographer and typewriter. She removed to New York city and opened a training school for young women in 1881, and established "The Business Woman's Journal" in 1888, subsequently changing its name to "The American Woman's Journal," which she edited very successfully till her death. She was an expert stenographer and typewriter, a successful teacher of those branches, and a member of the Women's Press Club and the Association of American Authors.

**Shattuck, George Cheyne**, physician, born in Boston, Mass., in 1813; died there, March 22, 1893. He was graduated at Harvard College in 1831, and at Harvard Medical School in 1835, and spent three years in study in Paris and London. On his return he began practicing in Boston in partnership with his father. In 1849 he succeeded Dr. Oliver Wendell Holmes as visiting physician at the Massachusetts General Hospital, and he held the office for thirty-six years; in 1857 was chosen Professor of Chemical Medicine in the Harvard Medical School, and was after-



ward transferred to the chair of the Theory and Practice of Medicine; and in 1872-'74 was President of the Massachusetts Medical Society. In 1845 he founded the Church of the Advent, in 1856 established the widely known St. Paul's School in Concord, N. H., and for nearly fifty years had been a delegate to the various conventions of his Church.

**Shepard, Elliott Fitch**, lawyer, born in Jamestown, N. Y., June 25, 1834; died in New York city, March 24, 1893. He was a son of Fitch Shepard, a banker and President of the National Bank-note Company, received his preliminary education in the Jamestown public schools, and was graduated at the University of the City of New York in 1855. He then began studying law with Judge William Strong, was admitted to the bar in 1858, and subsequently formed a partnership with his preceptor. At the beginning of the civil war he received an appointment with the rank of colonel on the staff of Gov. Morgan. He was assigned to recruiting duty, and, besides raising the 51st New York Volunteers, which became known as the Shepard Rifles, he was instrumental in enlisting nearly 50,000 men for the Union armies. After the war he practiced law till 1884. During this period he became attorney for the New York Central and Hudson River Railroad Company; was active in organizing the New York State Bar Association, of which he was elected the first president; labored successfully to secure the passage by the New York Legislature of an act creating a court of arbitration for the settlement of purely commercial difficulties out of the regular courts; and was appointed by President Hayes United States Attorney for the Southern District of New York, but was not confirmed. He spent 1884-'87 in travel in Europe, on his return made a trip to Alaska, and in 1888 became proprietor and editor of the "Mail and Express" newspaper. In the management of this newspaper, which he sought to make a clean and highly moral periodical for Christian families, he indulged in a number of peculiarities, such as printing a text from the Bible daily at the head of the editorial page, spelling Rome, Roma, and Sunday, Sunday, and bitterly assailing all that concerned the Roman Catholic Church. He also opposed all Sunday travel and traffic, and, securing the control of the Fifth Avenue stage line, persistently refused to allow a stage to be run on the Sabbath, though the line was operated at a heavy annual loss to him. Col. Shepard married in 1868 the eldest daughter of William H. Vanderbilt, who received from her father an inheritance of several million dollars. He was exceedingly generous in life to charitable and religious institutions, and bequeathed \$100,000 to the trustees of the Presbytery of New York for its general evangelical work, and also \$50,000 for the special benefit of the Seventh Presbyterian Church in New York city and \$100,000 to St. Paul's Institute in Tarsus, Asia Minor. He also directed that his interests in the "Mail and Express" and the stage line be retained as long as those corporations refrained from work of any kind on Sunday, and he stipulated that should his trustees dispose of those interests it should be only on the condition that the purchasers should never operate the properties on that day.

**Shipman, George E.**, physician, born in New York city, March 4, 1820; died in Chicago, Ill., Jan. 20, 1893. He was graduated at the University of the City of New York in 1839; took his medical course in the College of Physicians and Surgeons; and, after practicing in Peoria, settled in Chicago in 1846. At that time there were not more than half a dozen regular practicing physicians of the homœopathic school west of Buffalo, and when the homœopaths began to gain in number in his section he was active in organizing them into local societies. In 1851 he aided in the formation of the Western Homœopathic Association; in 1854 established the first homœopathic hospital in Chicago; in 1855 became an incorporator and one of the first trustees of Hahnemann College, and afterward its Professor of Materia Medica and Therapeutics; and in 1857 was appointed a mem-

ber of the homœopathic board, which was permitted by the city council to attend the patients in the new city hospital. In 1871 he established the Foundlings' Home at his own expense, and conducted it till its incorporation, when he became its superintendent. To this charity he gave the remainder of his life.

**Smith, Edmund Kirby**, military officer, born in St. Augustine, Fla., May 16, 1824; died in Sewanee, Tenn., March 28, 1893. He was a son of Joseph Lee Smith, the first presiding judge of the United States District Court for Florida, and was graduated at West Point in 1845. He entered the army as a brevet 2d lieutenant in the 5th United States Infantry, then under Gen. Taylor in Mexico; took part in the battles of Palo Alto and Resaca de la Palma; was promoted 2d lieutenant, and assigned to the 7th Infantry, in which he distinguished himself in the taking of Monterey; and received the brevet of 1st lieutenant for bravery at Vera Cruz and Cerro Gordo, and of captain for Contreras. In 1849-'52 he was Assistant Professor of Mathematics in the United States Military Academy; in 1855 was promoted captain in the 2d United States Cavalry; on May 12, 1859, was severely wounded in a battle with the Comanche Indians in Texas; and in 1861 was promoted major, was thanked for his services against the Indians by the Legislature of Texas, and, on the secession of Florida, resigned his commission in the army. He immediately offered his services to the Confederate authorities; was commissioned a colonel of cavalry; and was promoted brigadier-general, June 17, 1861; major-general, Oct. 11 following; lieutenant-general, Oct. 9, 1862; and general, Feb. 19, 1864. He was first assigned to duty under Gen. Johnston at Harper's Ferry, and at Manassas, or the first Bull Run, was severely wounded. In February, 1862, he was placed in command of the Confederate forces in the neighborhood of Cumberland Gap, and in the following summer led the advance of Gen. Bragg's army in the Kentucky campaign, marching through the gaps in the Cumberland mountains, and coming upon the Federal army under Gen. William Nelson, near Richmond, Ky., on Aug. 29. On the following day he gave battle to the Federal troops near Mount Zion Church, 6 miles from Richmond, and defeated them, and when Gen. Nelson retreated to Richmond, Gen. Smith made another and successful attack. Gen. Smith then pushed forward, having planned to attack Cincinnati, but when within easy marching distance of that city he failed to receive the support from Gen. Bragg that he had expected, and, retiring, directed his march to Frankfort, where he arrived prior to Gen. Bragg. Early in January, 1863, he was summoned to Richmond, Va., owing to recent changes made in army commands, and was assigned to the command of the department west of the Mississippi, with headquarters in Alexandria, La. He there, under instructions, organized a government for the territory of Louisiana, Texas, Arkansas, and the Indian Territory; shipped large quantities of cotton to Europe, and imported foreign machinery, by running the blockade at Galveston; and did much to develop the mining and manufacturing resources of that section. In the latter part of 1863 and the early part of 1864 his chief duty was to resist the advances of Gen. Banks, whom he defeated in April, 1864, while on his Red river campaign. In May, 1865, Gen. Smith surrendered his army, the last of all the Con-





federate troops to lay down their arms, at Baton Rouge, to Gen. Canby. After the war he was elected President of the Atlantic and Pacific Telegraph Company; was Chancellor of the University of Nashville in 1870-'75; and since 1875 had been Professor of Mathematics in the University of the South in Seawane, Tenn.

**Smith, Elizabeth Oakes Prince**, author, born in North Yarmouth, Me., Aug. 12, 1806; died in Hollywood, Carteret County, N. C., Nov. 15, 1893. She married, early in life, Seba Smith, the journalist, who became widely known by his writings under the pen name of "Major Jack Downing," and for many years was associated with him in his editorial work in Portland, Me., and in New York city. She was the first woman in the United States who ever appeared as a public lecturer, and was also one of the first woman preachers. Among her publications were: "Riches without Wings" (Boston, 1838); "The Sinless Child," poems (New York, 1841); "Stories for Children" (Boston, 1847); "Woman and her Needs" (1851); "Hints on Dress and Beauty" (1852); "Bald Eagle" (London, 1867); and the tragedies "The Roman Tribune" (1850) and "Old New York" (1853).

**Smith, Horace**, manufacturer, born in Cheshire, Mass., in 1808; died in Springfield, Mass., Jan. 15, 1893. Early in life he entered the United States armory in Springfield as a machinist, and while there invented a hammer check machine for Government use. In 1840 he removed to Norwich, Conn., and in 1852 to Worcester, Mass., where he became acquainted with D. B. Wesson, with whom he worked on a revolving repeating gun. About this time he invented metallic cartridges. In 1854 he and Wesson invented and began manufacturing a repeating rifle; in 1857 they formed the firm of Smith & Wesson, which has since been engaged in manufacturing firearms; and in 1874 Mr. Smith retired from active partnership. He left an estate estimated at \$3,000,000, and bequeathed his entire property, excepting \$10,000 for his brother, to charitable and religious institutions.

**Smith, Melancton**, naval officer, born in New York city, May 24, 1810; died in Green Bay, Wis., July 19, 1893. He was the third of his name, the grandson of a member of the Continental Congress, and the son of an officer in the regular army in the War of 1812-'15. He was appointed a midshipman in the United



States navy, March 1, 1826; was promoted passed midshipman, April 28, 1832; lieutenant, March 8, 1837; commander, Sept. 14, 1855; captain, July 16, 1862; commodore, July 25, 1866; rear-admiral, July 1, 1870; and was retired, May 24, 1871. During his naval career he was on sea service nineteen years and two months, on shore or other duty seventeen years, and was unemployed thirty years and eight months. From 1826 till 1839 he was on duty in the Pacific and West India

squadrons, at the naval school, and at the navy yards in Brooklyn and Pensacola. In June, 1839, he was ordered to the "Poinsett," to cooperate with the land forces in the campaign against the Seminole Indians in Florida, and at one time during these operations he commanded a fort and a twenty-oared barge. During the next fifteen years he was on duty with the Mediterranean squadron twice, and at the Brooklyn and Pensacola navy yards, on store and receiving ships, and as a light-house inspector. From May 1, 1861, till June 22, 1863, he was attached to the Gulf blockading squadron, and at different times commanded the steamers "Massachusetts," "Mississippi," and "Monongahela." While on the "Massachusetts," he engaged a fort on

Ship Island and three steamers and a revenue cutter off the island, on July 9, 1861; fought the Confederate steamer "Florida," in Mississippi Sound, Oct. 26; and captured a two-gun battery at Biloxi, La., Dec. 31. With the "Mississippi" he passed Forts Jackson and St. Philip with Farragut, and destroyed the Confederate ram "Manassas," April 24, 1862; took part in all the operations of the squadron till March 14, 1863; and then, when his vessel grounded in attempting to pass the batteries at Port Hudson, and was being mercilessly shelled by the Confederates, he set her on fire in four places and escaped with his officers and crew. Admiral Farragut highly praised him for destroying the "Manassas," and approved his course in burning and abandoning the "Mississippi." His principal service in the war after this was his engagement with the Confederate ram "Albemarle" in Albemarle Sound, and recapture of the steamer "Bombshell," May 5, 1864, and his participation, while commanding the frigate "Wabash," in the attacks on Fort Fisher in December, 1864, and January, 1865. He was commandant of the Brooklyn Navy Yard in 1870-'72, and after retirement was governor of the Naval Asylum in Philadelphia.

**Snell, George**, architect, born in London, England, in 1820; died in Boston, Mass., Feb. 23, 1893. He was graduated at the Institute of Civil Engineers in London, winning the Telford medal for excellence in architecture; removed to Boston in 1849, and there built Music Hall, the granite bank building on State Street, and many buildings on Beacon Street in the neighborhood of Dartmouth Street. He received the medal of the Massachusetts Humane Society for rescuing a man from drowning in Jamaica Pond in 1858; was a proficient etcher; and was an active member of the principal social clubs of Boston.

**Sorin, Edward**, clergyman, born in Ahuille, near Laval, France, Feb. 6, 1814; died in Notre Dame, Ind., Oct. 31, 1893. He was educated at Precieque and at the Seminary of Le Mans; was ordained a priest in 1838; entered the congregation of the Holy Cross in 1839; and with six companions of the congregation removed to the United States in 1842. Bishop Hallandiere offered them a wild tract of land on St. Joseph river, which they accepted, and Father Sorin there founded Notre Dame, with its university of that name and its associated institutions, and also the order of the Sisters of the Holy Cross. In 1868 Father Sorin was elected superior-general of the congregation for life by the chapter-general of the order; in 1879 the mother house of the order was transferred from Paris, France, to Notre Dame; and in 1888 the golden jubilee of the founder was celebrated with much ecclesiastical pomp.

**Spencer, George Eliphaz**, lawyer, born in Jefferson County, N. Y., Nov. 1, 1836; died in Washington, D. C., Feb. 19, 1893. He was educated at Montreal College, Canada, and removed to Iowa, where he was chosen secretary of the State Senate in 1856, and was admitted to the bar in 1857. In 1862 he entered the Union army as a captain and assistant adjutant-general of volunteers; in 1863 recruited the 1st Alabama Cavalry, U. S. V., and was commissioned its colonel; in 1864 commanded a brigade of cavalry on Sherman's march to the sea; and in July, 1865, resigned from the army with the brevet of brigadier-general. He was appointed United States register in bankruptcy for the 4th Alabama District in May, 1867; was elected to the United States Senate as a Republican in 1868; and was re-elected in 1872, serving till March 3, 1879. In his last term he was chairman of the Committee on Military Affairs, and a member of the Committee on the District of Columbia. After completing his term he became conspicuous in the exposure of the Star-Route postal frauds, and in the legislation resulting in the reduction of letter postage to 2 cents.

**Spicer, Elihu**, navigator, born in Noank, New London County, Conn., in April, 1825; died in Brooklyn, N. Y., Feb. 15, 1893. He went to sea as a cabin boy



on a coaster; developed unusual nautical ability for one of his years; and, after sailing to the principal ports on the Atlantic and Pacific coasts, and to the West Indies and China, became captain of a bark when twenty-two years old. He commanded in turn the "Fanny," "Hound," "Samuel Willetts," and "Mary L. Sutton"; was one of the first sailing masters to take advantage of the compulsory opening of the ports of Japan to trade; commanded the Federal transport "Victor" in the early part of the civil war; was for some time in charge of the steamships of the Mallorys, of Mystic, Conn., and after the war became a partner in the firm. On the death of Charles H. Mallory, Captain Spieer became the head of the firm, and President of the New York and Texas Steamship Company, an office he held at his death. Captain Spieer was a man of large generosity. During his lifetime he presented the Polytechnic Institute of Brooklyn with a valuable library as a memorial to his son; erected a public library in Mystic, Conn.; and gave the town of Groton, Conn., a valuable farm with suitable buildings for the benefit of its poor; and he bequeathed \$5,000 for the support of the Groton farm, \$10,000 to the Spieer Library in the Polytechnic Institute, \$10,000 to No. 11 School in the Noank district, and \$25,000 to the Spieer Library in Mystic.

**Stanford, Leland**, philanthropist, born in Watervliet, N. Y., March 9, 1824; died in Palo Alto, Cal., June 20, 1893. He was brought up on a farm, was admitted to the bar in 1849, removed to Port Washington, Wis.,



to practice, and made the overland trip to California and engaged in gold mining in 1852. In 1856 he settled in San Francisco and established a commercial house, in which he acquired a large fortune. He became actively interested in the agricultural and manufacturing development of California, and early in his residence there was convinced both of the desirability and the practicability of a transcontinental railway. In 1860 he entered public life as a delegate to the Re-

publican National Convention, and in the following year he was elected Governor of California. In 1861 also he was elected president of the newly organized Central Pacific Railroad Company, formed for the purpose of building a railway across the Sierra Nevada mountains. With him were associated Charles Crocker, Mark Hopkins, and Collis P. Huntington. In the division of the preliminary work Mr. Stanford had charge of all that related to legislation, and he secured the passage of a bill by Congress in 1862, according to which, on the construction and equipment of 40 miles of the road and the establishment of a telegraph service for that distance, the Government would issue bonds to aid the company, at the rate of \$16,000 a mile to the foot of the mountains, and \$48,000 a mile over and through them. Each of the four men agreed to pay personally the cost of construction of a fourth part of the road, and Mr. Stanford's section was that over the mountains. Under his personal supervision 530 miles were built in two hundred and ninety-three days. The road of the Central Pacific Company extended from San Francisco to Ogden, and that of the Union Pacific Company from Ogden to Omaha. The Central Pacific completed its work on May 10, 1866, and three years afterward Mr. Stanford drove the last spike at Promontory Point, Utah, which connected the rails of the two companies. The construction of the road across the mountains was a marvel of engineering, because of the natural obstacles, and more than

\$20,000,000 were spent on a stretch of roadway of 100 miles. In 1884 and 1890 Mr. Stanford was elected United States Senator, and at the time of his death he was chairman of the Committee on Public Buildings and Grounds, and a member of the Committee on Civil Service and Retrenchment, on Education and Labor, on Fisheries, and on Naval Affairs. From the beginning of his business prosperity he was noted for large and quietly bestowed gifts to deserving public purposes. The death of his only son in 1885 led him to concentrate his future benefactions in an educational institution, to be open to both sexes and to provide the highest possible university training. With his wife, he deeded to trustees, for the establishment of the Leland Stanford Junior University, his Gridley farm of 21,000 acres, with a market value of \$1,500,000, his Vina farm of 55,000 acres, market value \$1,800,000, his Palo Alto farm of 7,000 acres, market value \$2,100,000, and other property representing an aggregate value of \$20,000,000. The corner stone of the first building was laid May 14, 1887, and the institution was formally opened Oct. 1, 1891. His great gift to the university was supplemented by a bequest of \$2,500,000. Everything that Senator Stanford did was on a remarkably large scale. His Vina farm was the largest vineyard in the world; his love of horses made him unapproachable as a breeder; and the university has the largest individual endowment of any public institution in existence.

**Starey, Alfred Butler**, editor and author, born in Nottingham, Eng., Aug. 2, 1853; died in New York city, Aug. 7, 1893. He studied at Exeter College, Oxford, and was graduated in 1873. Shortly after leaving college he came to this country and was a private tutor for several years. The short stories for children which he wrote at this time were so well received that he was encouraged to choose literature as a profession. He was introduced to the house of Harper & Brothers by letters from England, and entered their employ in 1878. His ability was immediately recognized, and he was promoted rapidly through various departments, until, in 1885, he was made editor of "Harper's Young People," which place he retained until his death. While still serving in his clerical capacity with the Harpers he entered the lists under an assumed name, and with his "Sword of Hildebrand" won the prize offered for the best children's story submitted. His editorial work during the last seven years of his life completely absorbed him, and he wrote but little. For several years Mr. Starey was secretary of the National Tennis Association, and his love of outdoor sports made him a ready sympathizer with like tastes in the young, and led him to make many innovations in the magazine. He was also a member, and at one time secretary, of the Authors Club. He never married.

**Stearns, Oakman Sprague**, educator, born in Bath, Me., Oct. 27, 1817; died in Newton Center, Mass., April 20, 1893. He was graduated at Waterville College in 1840, and at Newton Theological Seminary in 1846; was instructor in Hebrew in the latter institution in 1846-'47; pastor of Baptist churches in South bridge, Mass., in 1847-'54, in Newark, N. J., in 1854-'55, and in Newton Center in 1855-'68; and had been Professor of Old Testament Interpretation in the Newton Seminary since 1868. He received the degree of D.D. from Colby University in 1863. Dr. Stearns was regarded as the leading authority among Baptists in the United States on the Old Testament; had translated Sartorius's "The Person and Word of Christ" (Boston, 1848); and among numerous writings had published "A Syllabus of the Messianic Passages in the Old Testament" (1884).

**Stephenson, John**, manufacturer, born in County Armagh, Ireland, July 4, 1809; died in New Rochelle, N. Y., July 31, 1893. He accompanied his parents to New York city in 1811, was educated in the old Wesleyan Seminary there, and, finding mercantile life un congenial, was apprenticed to a coachmaker. In 1831 he established a similar business for himself. Soon afterward he built the first omnibus ever seen



in New York city, and patented and built the first street car constructed in the United States. The success of these two vehicles led him to confine himself to their manufacture. He built up a vast business, shipped stages and street cars to nearly all parts of the civilized world, was burned out several times, and attended to his business till within a few days of his death.

**Stone, Lucy (Blackwell)**, reformer, born in West Brookfield, Mass., Aug. 13, 1818; died in Dorchester, Mass., Oct. 18, 1893. She came of patriotic and fighting stock, for her grandfather was a colonel in the Revolutionary War, and subsequently led 400 men in Shays's rebellion. Her father was a farmer. She determined to obtain a collegiate education, being first moved thereto by a desire to read the Bible in the original, and learn for herself the significance of the passages relating to the equality rights of the sexes. She went to Oberlin College, Ohio, and was graduated there in 1847. After leaving college she became an avowed champion of woman's rights. In fact, to use the language of Mrs. Stanton, she was the first who "really stirred the nation's heart on the subject of woman's wrongs." In the year of her graduation she lectured on this theme in her brother's church, in Gardner, Mass., and in 1848 she went upon the lecture platform in behalf of the Massachusetts Antislavery Society, and traveled extensively through the Eastern and Western States and Canada, presenting her special subject of woman's rights as occasion offered. In 1855 she married Henry B. Blackwell, but before doing so made an agreement with him that she retain her maiden name with the prefix Mrs. They removed to New Jersey, and some years later, when property on which she refused to pay taxes had been seized in default of such payment, she published a protest against "Taxation without representation." In 1869 she formed the American Woman's Suffrage Association; in the year following she became coeditor of the "Woman's Journal" in Boston, and in 1872 she became its editor in chief, which place she filled for many years, her husband and her daughter being associated with her. From 1867 to 1882 she was again a lecturer, traveling and speaking in behalf of the woman-suffrage amendments. She was an officer and moving spirit in local, State, and national suffrage associations and meetings, and saw great changes wrought in that movement.

**Strain, Patrick**, clergyman, born in Derrydrumsk, County Down, Ireland, Nov. 27, 1822; died in Lynn, Mass., Feb. 7, 1893. He removed to Salem, Mass., in 1841; was educated for the Roman Catholic priesthood at the Sulpician College and the College of St. Hyacinthe in Montreal, and at the Seminary of St. Sulpice in Paris; was ordained a priest in 1850; and was assigned to the small joint parish of Chelsea and Lynn in 1851. His labors there were fruitful. In 1862 he rebuilt the church in Lynn, which had been burned down, and the Church of St. Thomas, in Nahant, was built under his administration. In 1887 he was appointed missionary apostolic to the Holy See, and permanent rector in Lynn; on Feb. 17, 1891, he was created a domestic prelate to Pope Leo; and on May 24 following, after an audience with the pope, he celebrated mass in St. Peter's, in Rome. He was given a memorable reception by his parishioners on his return.

**Taylor, James Wickes**, consular officer, born in Penn Yan, Yates County, N. Y., in 1819; died in Winnipeg, Manitoba, Canada, April 28, 1893. He was graduated at Hamilton College in 1839; studied law in Cincinnati in the same office with Salmon P. Chase, with whom he held a lifelong intimacy; became editor of the Cincinnati "Signal" in 1848; and entered political life as a member of the Ohio Constitutional Convention in 1850. In 1851-'54 he edited a newspaper in Sandusky, and in 1854, when Mr. Chase was elected Governor, he appointed Mr. Taylor State librarian. He removed to St. Paul, Minn., in 1856, intending to practice law, but in the following year was chosen secretary of the St. Paul

and Pacific Railway. From this office he was called to Washington, D. C., where he was special agent of the Treasury Department in 1860-'70. While there he also acted as Commissioner of Mining Statistics, and drew up the Mineral Lands act of Congress. In September, 1870, President Grant appointed him United States consul at Winnipeg, where he remained till his death. For promptly communicating intelligence of a projected Fenian raid into Manitoba he received the thanks of the British Government. Consul Taylor had published a "History of Ohio" from its settlement to its admission into the Union; "Alleghania, or the Strength of the Union and the Weakness of Slavery in the Highlands of the South"; and "Forest and Fruit Culture in Manitoba."

**Thorne, Charles Robert**, actor, born in New York city, in 1814; died in San Francisco, Cal., Dec. 13, 1893. He made his first appearance on the stage as Octavian in "The Mountaineers" at the Park Theater in New York in 1830, and for more than fifty years remained on the stage, playing in all parts of the world and in a large variety of characters. At various times he was manager of the Chatham Street Theater, Astor Place Opera House, and Lyceum Theater in New York city; the American and Metropolitan Theaters in San Francisco; the Federal Street Theater and Howard Athenæum in Boston; and the Union Theater in Leavenworth, Kan. His first wife was Maria Ann Mestayer, whom he married in Richmond, Va., in 1830. She retired from the stage in 1864, and died in 1881. Their four sons—Charles Robert, Jr. (died in 1863), William H., Edwin Forrest, and Thomas (died in China)—possessed much of their parents' dramatic ability, and made creditable appearances on the stage.

**Thornton, Harrison R.**, missionary, born in Hampden-Sidney, Va., about 1858; died in Cape Prince of Wales, Alaska, Aug. 19, 1893. He was a son of Col. John Thornton, and a brother of James Thornton, Professor of Mathematics in Hampden-Sidney College, and of William Thornton, Professor of Applied Mathematics in the University of Virginia. He was appointed to the mission station at Cape Prince of Wales, Alaska, in 1890, and was the only white man among 35,000 Eskimo Indians. He married Miss Neda Pratt, of Auburn, Me., who was connected with the American Missionary Society, in 1892. Mr. and Mrs. Thornton were engaged in educating the Indians, and had built a schoolhouse, which was largely attended for six months in the year. For several months Mr. Thornton had been laboring earnestly to break up the liquor traffic among the natives, and by so doing had made many enemies. He was shot dead by one of three native boys. The next day two of the boys were caught by the natives and shot to death, and a party was organized to search for the third.

**Thwing, Edward Payson**, clergyman, born in Ware, Mass., Aug. 25, 1830; died in Canton, China, May 9, 1893. He was graduated at Harvard in 1855, and at Andover Theological Seminary in 1858; was pastor of the Congregational Church in Quincy, Mass., in 1862-'67; of the Tolmers Square Church in London, England, in 1867-'68; and of the Church of the Covenant in Brooklyn, N. Y., subsequently; and was Professor of Vocal Culture in Gorham Seminary, Maine, in 1870-'74, and of Sacred Rhetoric in the Tabernacle Free College in Brooklyn in 1874-'78. While in Brooklyn he studied medicine, and was graduated at the Long Island College Hospital. For many years he had been in the habit of visiting London and preaching each summer. In 1891, while making a tour of China, he became impressed with the need of hospitals and asylums there constructed and conducted on modern plans, and in 1892 he returned and undertook the building of a model asylum in Canton. He was a frequent contributor to newspapers and magazines, and had published "Drill Book of Vocal Culture and Gesture," "Outdoor Life in Europe," "Bible Sketches," etc. His wife, SUSAN MARY (WAITE) THWING, born in Portland, Me., about 1840; died in Canton, China, June 18, 1893.



**Towle, George Makepeace**, author, born in Washington, D. C., Aug. 27, 1841; died in Brookline, Mass., Aug. 8, 1893. He was graduated at Yale with the Townsend premium for the best composition in 1861, and at Harvard Law School in 1863; practiced in Boston for two years; was on the editorial staff of the "Post" one year; and was United States consul in Nantes, France, in 1866-'68, and in Bradford, England, in 1868-'70. Returning to Boston, he became managing editor of the "Commercial Bulletin" and foreign editor of the "Post." In 1877 he published monographs on the "Eastern Question," and edited Harvey's "Reminiscences of Daniel Webster," and in the following year began a series of biographical narratives of early explorers, under the title "Heroes of History." His "Life of Disraeli" appeared in 1879, and was followed by "Certain Men of Mark," dealing with European statesmen. In 1885 he began a "Timely Topics Series," treating European and Asiatic politics. He also published "Young People's History of England" (1886) and "Young People's History of Ireland" (1887); and at the time of his death had completed two of a three-volume series on "The Literature of the English Language." Since 1881 he had frequently appeared on the lecture platform. He was a Republican in politics, and had been a delegate to the National Convention (1888), a presidential elector, and a State Senator (1890 and 1891).

**Townsend, Edward Davis**, military officer, born in Boston, Mass., Aug. 22, 1817; died in Washington, D. C., May 11, 1893. He was graduated at West Point in 1837, and commissioned a 2d lieutenant in the 2d United States Artillery; was promoted 1st lieutenant, Sept. 16, 1838; captain, April 21, 1848; lieutenant-colonel, March 7; colonel, Aug. 3, 1861; and brigadier-general, Feb. 22, 1869; and was retired, June 15, 1880. He was brevetted brigadier-general, U. S. A., for faithful service during the war, Sept. 24, 1864, and major-general for distinguished service in the adjutant-general's department during the war, March 13, 1865. Gen. Townsend served in the Seminole campaign in Florida in 1837-'38; on the frontier during the Canadian disturbances in 1838-'41; was assigned to the general staff as assistant adjutant-general in 1848; was adjutant of the division of the Pacific for five years; and was chief of staff to Gen. Scott at the time of the latter's retirement in 1861. The greater part of his service and his most important work were performed in the adjutant-general's department, and through the civil war he was officially the principal executive officer of the War Department. Gen. Townsend published "Catechism of the Bible—the Pentateuch" (New York, 1859); "Catechism of the Bible—Judges and Kings" (1862); and "Anecdotes of the Civil War in the United States" (1884).

**Tracy, John M.**, painter, born in Illinois, about 1842; died in Ocean Springs, Miss., March 20, 1893. He served in an Illinois regiment in the civil war; studied painting in Paris in 1866-'76; and on his return established himself as a portrait painter in St. Louis. A bench show of dogs in 1877 led him to abandon portraiture for animal painting, and in this line he became widely known. He had painted all the famous dogs owned in the United States, had been frequently a judge in horse and dog shows, and was considered an authority on the anatomy of the horse and the dog. He had exhibited at the Paris Exposition, and was completing a painting for the Columbian World's Exposition at the time of his death. Besides his animal portraits he had painted "The Dairymaid," "Eastern Field Trials," "Home for the Holidays," and "Long Time between Drinks."

**Tupper, Henry Marty**, educator, born in Monson, Mass., in 1831; died in Raleigh, N. C., Nov. 11, 1893. He was graduated at Amherst College and at the Newton Theological Seminary; entered the ministry of the Baptist Church in 1862; and soon afterward enlisted as a private in the National army and served till the close of the war. In October, 1865, he went to Raleigh as an agent of the American Baptist Home

Missionary Society, and with the aid of the colored people there cut the timber and erected a building, which was used as a schoolhouse on week days and as a church on Sundays. Through his efforts Shaw University was chartered in 1866. The work of constructing the brick buildings of what is now one of the largest colleges for colored youth in the world was immediately begun, with the aid of money subscribed in New York and New England. Under Dr. Tupper's direction the students themselves mainly erected the buildings now constituting the university, and after the institution was well established Dr. Tupper gradually substituted Southern for Northern instructors. His administration as president was successful. At the time of his death the university had mechanical, medical, legal, and theological departments, grounds and buildings valued at about \$200,000, and 500 students of both sexes, and had graduated nearly 5,000 teachers, clergymen, and physicians.

**Unnever, John Gerhard**, sculptor, born in Copenhagen, Denmark, July 16, 1822; died in New York city, Feb. 12, 1893. He was a pupil of Thorwaldsen, under whose eye he produced many classical figures of merit, including Apollo, Hebe, and Venus. In 1853, when the figures of the Twelve Apostles were sent from Thorwaldsen's Museum in Copenhagen to New York, Mr. Unnever was selected as their custodian. He also received from Thorwaldsen the exclusive privilege of reproducing his figures and of using his models. Under this concession he opened a studio in New York city, where he duplicated in plaster many of his master's works. He also edited two illustrated books on Thorwaldsen's life and work.

**Upham, James**, clergyman, born in Salem, Mass., Jan. 23, 1815; died in Chelsea, Mass., May 4, 1893. He was graduated at Waterville College (now Colby University) in 1835, and at Newton Theological Seminary in 1839; was ordained to the ministry of the Baptist Church in 1840; held brief pastorates in Manchester, N. H., and Millbury, Mass.; was Principal of the Farmington Academy, and professor in the Baptist Theological Institution in Thomaston, Me.; and was a professor in the New Hampton (N. H.) Literary and Theological Institution for twenty years, and its president five years. Subsequently he was editor of the "Watchman and Reflector," in Boston; of the "Religious Herald," in Richmond; and of the Health Department of the "Youth's Companion," in Boston.

**Urner, Nathan Dane**, journalist, born in Cincinnati, Ohio, in 1840; died in New York city, Feb. 19, 1893. In 1862 he removed to New York city and became a reporter on the "Tribune." He first distinguished himself and exhibited his peculiar humor by writing a description of the burning of Barnum's Museum on July 13, 1865, which was thrillingly realistic. His particularization of the escape of the animals from the roof, through windows, and down the fire ladders, was most ludicrous from its sober and earnest tone. The report was widely copied, and Mr. Barnum incorporated it in his "Autobiography." Mr. Urner served the "Tribune" for some time as city editor, and was Horace Greeley's private secretary during the preparation of the first volume of his "American Conflict." Subsequently he engaged in general literary work. Several of his sketches and poems have been published in collections for recitation.

**Vermilye, Thomas Edward**, clergyman, born in New York city, Feb. 27, 1803; died there, March 17, 1893. He was graduated at Yale in 1821, and was ordained to the Presbyterian ministry in April, 1825. In January, 1826, he became pastor of the Vandewater Street Presbyterian Church in New York; in 1830 of a Congregational church in West Springfield, Mass.; in 1835 of the Dutch Reformed church in Albany, N. Y., and in 1839 of the Middle Dutch Church in New York. He maintained his connection with the Collegiate Reformed Dutch Church till his death, and was its senior pastor. On Oct. 29, 1889, the consistory of the Collegiate Reformed Dutch Church held a public service to commemorate his fifty years of serv-



ice in that church. He received the degree of D. D. from Rutgers and Union Colleges in 1839, and LL. D. from Jefferson College in 1856.

**Vose, Richard**, manufacturer, born in Whitesborough, N. Y., Sept. 2, 1830; died in Nyack, N. Y., Feb. 25, 1893. He commanded the 71st New York Volunteers in the civil war, and for many years remained at the head of the regiment after its reorganization as a part of the National Guard of the State. Col. Vose invented a number of car-spring appliances, and manufactured car-springs for forty years.

**Vought, Walter**, physician, born in Buffalo, N. Y., in 1862; died in New York city, Sept. 24, 1893. He was graduated at the Sheffield Scientific School in 1882, and at the College of Physicians and Surgeons of the City of New York in 1885; spent a year in special study in Heidelberg and Vienna; and on his return to New York was appointed chief of the clinic of nervous diseases in the Vanderbilt Clinic. He was in charge of the quarantine station on Fire Island during the cholera excitement of 1892, and contracted a fatal attack of typhoid fever while attending a patient. Dr. Vought was recognized in his profession as an exceptional diagnostician in nervous diseases, and had published "A Chapter on Cholera, for Lay Readers," "A Study of the Organisms found in the Blood after Malarial Fever," and a description of several cases of the rare disease known as acromegalia.

**Walker, Alexander**, journalist, born in Fredericksburg, Va., Oct. 13, 1819; died in Fort Scott, Ark., Jan. 24, 1893. He was graduated in law at the University of Virginia, and removed to New Orleans to practice in 1840. He soon became active in journalism and politics, was editor at various periods of the "Jeffersonian," the "Delta," the "Picayune," the "Times," and the "Herald," of New Orleans, and of the "Enquirer," of Cincinnati; was for some time a city judge; was a member of the Louisiana Convention that adopted the ordinance of secession; and was author of "Jackson and New Orleans" (New York, 1856), "Life of Andrew Jackson," "Butler and New Orleans," "The Battle of Shiloh," "Duelling in Louisiana," "The Story of the Plague, a History of the Yellow Fever Epidemic of 1852," and other historical works.

**Walker, John G.**, military officer, born in Cole County, Mo., July 22, 1822; died in Washington, D. C., July 20, 1893. He was educated at the Jesuit College in St. Louis; was appointed a lieutenant in the 1st United States Mounted Rifles in 1843; served through the Mexican War, in which he was wounded, and promoted captain; and was afterward employed in several Indian campaigns. In 1861 he resigned his commission, and was appointed colonel of the 2d Virginia Infantry in the Confederate service. He was wounded at Malvern Hill, commanded the division that occupied Loudoun Heights at the capture of Harper's Ferry, was promoted major-general, fought with his division at Milliken's Bend, Bayou Bourdeaux, Plaquemine, Pleasant Hill, and Jenkins Ferry, and commanded the district of Louisiana and the Department of Louisiana and Texas. After the war he was United States consul-general at Bogotá, and the special commissioner of the Department of State to invite the South American republics to send representatives to the Convention of American Republics in Washington. He was highly complimented by Secretary Blaine for the tact shown in this mission.

**Waters, Horace**, manufacturer, born in Jefferson, Lincoln County, Me., Nov. 1, 1812; died in New York city, April 22, 1893. He was engaged in mercantile business till 1847, when he began selling pianos for a Boston manufacturer. In 1850 he undertook manufacturing for himself in New York city; in 1855 failed in business; in 1858 began publishing the "Sunday-School Bell," the first hymn and tune book of its kind, with the profits from which he re-established himself; in 1875 again failed; and in 1884 organized a corporation to continue the business. Mr. Waters was an early antislavery man, an original member of the Prohibition party, a liberal supporter

of Baptist Church enterprises, and the chief promoter of the Waters Normal Institute in Winton, N. C.

**Waterston, Robert Cassie**, clergyman, born in Kennebunk, Me., in 1812; died in Boston, Mass., Feb. 21, 1893. Early in life he became superintendent of the Sunday school of Father Taylor's Bethel Church in Boston; subsequently he studied theology in Cambridge, and in 1839 he was ordained pastor of the Pitts Street Chapel, where he labored among the poor for six years. He was a member of the Boston school committee for ten years, and a pleasing extempore speaker. He was author of "Thoughts on Moral and Spiritual Culture" (Boston, 1842); "Arthur Lee and Tom Palmer" (1845); memoirs of Charles Sprague, George Sumner, William Cullen Bryant, and George B. Emerson; and numerous poems and hymns. He bequeathed \$40,000 conditionally, and, after the death of his widow, his library and collections of pamphlets, manuscripts, and autographs, to the Massachusetts Historical Society, and \$10,000 and his collections of birds, shells, fossils, and minerals to the Society of Natural History.

**Webster, Erastus Durnin**, journalist, born in Aurora, N. Y., April 16, 1827; died in Washington, D. C., March 22, 1893. He learned the printer's trade in the office of the Buffalo "Express," established an antislavery newspaper in Springville, N. Y., in 1849, founded the Omaha "Republican" in 1859, and was a delegate from Nebraska to the National Republican Convention in 1860. In 1861-'65 he was private secretary to Secretary Seward, and during this period he delivered Messrs. Mason and Slidell, the Confederate commissioners, to the commander of the British man-of-war "Rinaldo," and was sent on a secret mission within the Confederate lines in Florida and Georgia. In 1865 he was appointed United States consul at Bradford, England; in 1867, deputy surveyor of the port of New York; in 1868, assessor of internal revenue for the Thirty-second District of New York; in 1873, State superintendent of immigration; and in 1877, inspector of internal revenue. He was a delegate at large from Nebraska to the National Republican Convention in 1892.

**Weed, Harriet Ann**, amanuensis, born in Rochester, N. Y., Feb. 6, 1819; died in New York city, Nov. 1, 1893. She was the eldest daughter of Thurlow Weed, was educated at the Albany Female Academy, and from the time she left school till the death of her father was his private secretary. She had charge of all his extensive correspondence, and aided him in receiving the public men who for more than a generation thronged his home. In 1861 she accompanied her father on his secret mission to Great Britain and France, undertaken at the request of President Lincoln, for the purpose of creating a better feeling toward the National cause on the part of the governments of those countries. After her father's death, in 1882, she completed his unfinished "Autobiography" (Boston, 1882).

**Wellstood, John Geike**, steel engraver, born in Edinburgh, Scotland, Jan. 18, 1813; died in Greenwich, Conn., Jan. 21, 1893. He removed to New York city in 1833, was apprenticed to the trade of a bank-note engraver, and organized the firm of Wellstood, Benson & Hanks in 1847. Subsequently the firm name was changed to Wellstood, Hanks, Hay & Whiting, and it continued to be the principal bank-note engraving concern in the country till 1858, when it was merged in the incorporation of the American Bank-Note Company. Mr. Wellstood was superintendent of the lettering department in the corporation till 1871, when he withdrew, and founded the Columbia Bank-Note Company, of Washington, D. C. While president of the Columbia company he designed and engraved a large number of plates for the "greenback" notes. His skill was attested by the detail of the lathe work, the intricate pattern of the backs, and the execution of the letters and counters, or figures, no two of which were alike. In 1879, when the Government began engraving its own plates, he returned to the American Bank-Note Com-



pany, and remained with it till his death. He was an expert detector of counterfeit paper money.

**White, William Thomas**, physician, born in Richmond, Me., July 7, 1829; died in New York city, Sept. 17, 1893. He began studying medicine in Bowdoin College, and was graduated at the New York Medical College in 1855. He served in the hospitals on Ward's and Blackwell's islands for two years, and as surgeon in chief of the Panama Railroad Company, at Panama, for three and a half years, and at Aspinwall for five years, and settled in New York city in 1865. In 1866-'78 he was an attending physician at Demilt Dispensary; in 1876-'80, visiting surgeon to the Presbyterian Hospital; and from 1879 till his death he was a visiting surgeon to the Charity Hospital on Blackwell's Island. Dr. White was most widely known as editor of the "Medical Register," a post he had held for sixteen years.

**Whitehead, William**, naval officer, born in Philadelphia, Pa., in 1840; died at League Island Navy Yard, Philadelphia, Jan. 8, 1893. He was appointed an acting midshipman in the United States navy, Sept. 23, 1856; was promoted midshipman, June 15, 1860; master, Aug. 31, 1861; lieutenant, July 16, 1862; lieutenant-commander, July 25, 1866; commander, June 4, 1874; captain, Sept. 4, 1887; and since Nov. 26, 1892, had been commandant of the League Island Navy Yard. During the civil war he was attached to the "Dakota," "Sonoma," the ironclad "Passaic," on which he served in the attack on Charleston and in other actions on the Atlantic coast, and to the flagship "Pawnee" in the engagements at Stony river and at Tioga creek. In 1866 he accompanied the ironclad "Monadnock" on her perilous trip from New York city around Cape Horn to California. While in command of the "Quinnebaug," of the Mediterranean Squadron, in 1881-'83, he forced the authorities of Alexandria to surrender the wife of an American citizen, Stone Bey, under threats of shelling the city.

**Wiltse, Gilbert C.**, naval officer, born in Binghamton, N. Y., Nov. 26, 1838; died in New York city, April 26, 1893. He was appointed an acting midshipman in the United States navy, Sept. 20, 1855; was promoted midshipman, June 9, 1859; lieutenant, Oct. 31, 1861; lieutenant-commander, Jan. 6, 1866; commander, Nov. 8, 1873; captain, Jan. 26, 1887; and at the time of his death was on waiting orders. He was on duty on the "St. Lawrence" during the engagement between the Confederate "Merrimack" and the "Congress" and "Cumberland" in Hampton Roads in March, 1862, and took part in the engagement of the monitors with Forts Sumter and Moultrie in November, 1863. On Feb. 5, 1891, he was assigned to the command of the "Boston," and he was at Valparaiso when the mob attacked the men of the "Baltimore" in the streets of that city. His last active service was at Honolulu, where, on Jan. 16, 1893, marines were landed from his ship, the American flag was raised, and a conditional protectorate over the Hawaiian Islands was established in the name of the United States Government. Soon after this incident Capt. Wiltse was detached from his command and placed on waiting orders.

**Wolle, Francis**, botanist, born in Jacobsburg, Northampton County, Pa., Dec. 17, 1817; died in Bethlehem, Pa., Feb. 10, 1893. He was a nephew of Peter Wolle, at the time of his death, in 1871, the senior bishop of the Moravian Church in Europe and America; was educated in the Moravian school in Bethlehem; taught in the schools in Nazareth and Bethlehem; was vice-principal of the Moravian seminary for young ladies in 1857-'61, and principal in 1861-'81; and was ordained to the ministry of the Moravian Church in 1861. In 1852 he patented in the United States, and afterward in all the principal countries of Europe, a machine for making paper bags, the first of its kind. He derived a considerable income from royalties on the sales of the machine. During the greater part of his life he was deeply interested in botanical study. He published papers in the "Bul-

letin of the Torrey Botanical Club"; "Desmids of the United States, and List of Pediculars," with 1,100 illustrations on 53 colored plates, from original sketches (Bethlehem, 1884); "The Fresh-Water Algae of the United States," with 2,300 illustrations (2 vols., 1887); and "Diatomaceae of North America."

**Wood, Horace G.**, lawyer, born in Woodstock, Vt., July 9, 1831; died in Dublin, N. H., Jan. 8, 1893. He was educated and admitted to the bar in his native State; was a member of the Legislature for several terms, and acquired a large railroad and corporation practice. During a period of retirement from practice because of failing health he applied himself to legal authorship, and published, among other works, "Nuisances," said to be the first elaborate treatise on the subject; "Limitations"; "Landlord and Tenant"; "Master and Servant"; "Evidence"; "Mandamus"; and "Railroads." During the last eight years Mr. Wood practiced in New York city.

**Woolsey, Abby Howland**, philanthropist, died April 7, 1893. She was an original member of the New York State Charities Aid Association, and had been a member of its board of managers and librarian for twelve years, and a member of its committee on hospitals for twenty years. She was author of "A Century of Nursing, with Hints toward the Organization of a Training School" (1876); "Lunacy Legislation in England"; "Handbook for Hospital Visitors" (1877); and "Hospital Laundries" (1880).

**Wright, James**, photographer, born in England; died in Brooklyn, N. Y., Feb. 4, 1893. He served the British War Office as a photographer during the Crimean War, and the United States War Department in the same capacity during the civil war, and in the latter was attached to the headquarters of the Army of the Potomac. After the war he devised a method of photographing on wood, both direct and in enlarged and reduced reproduction, for the benefit of engravers on wood, and he had been employed since in his special work for the principal illustrated periodicals.

**Young-Man-Afraid-of-His-Horses**, hereditary chief of the Sioux Indian nation, born about 1835; died at Pine Ridge agency, S. Dak., July 15, 1893. He was a son of a famous warrior, A-Man-Afraid-of-His-Horses, who died in 1889, at the age of ninety-two, and whose life was intimately connected with the frontier history of the Northwest since the early days of the century. Besides his rank as hereditary chief of the whole Sioux nation, the son was the active chief of the Ogallala tribe. Within recent years he had become a thoroughly civilized and friendly Indian, had made frequent visits to Washington on business concerning his people, and had rendered valuable services to Gens. Crook and Miles, particularly to the latter during the "Messiah dance" excitement in 1890-'91.

**Webb, Eckford**, shipbuilder, born in New York city, April 8, 1825; died in Brooklyn, N. Y., Sept. 27, 1893. He was the eldest son of Isaac Webb, a noted shipbuilder; was brought up in his father's shipyard; and on the death of the elder Webb, in 1848, he established himself in the same business in Greenpoint. He not only built nearly all the East river ferryboats, but turned out several gunboats for the Government during the civil war, including the famous "Chippewa," and after the war built several of the Pacific mail steamers. In 1871 he constructed the caissons on which the towers of the East River Bridge rests, the largest work of their kind ever known. In recent years he retired from the shipbuilding business, and engaged in the manufacture of paints and oils.

**Young, William C.**, civil engineer, born in Youngstown, Ohio, Nov. 25, 1799; died in New York city, Dec. 22, 1893. In 1816 he was attached to the party that made a survey of the islands in Lake Ontario, and in 1817 to the one that made the first survey for the Erie Canal. He was graduated at the United States Military Academy in 1822, was assigned to the Third Artillery, and resigned in 1826 to engage in civil engineering. He became a pioneer in railroad construction; was the first to use cross ties in place of the stone blocks and foundations previously used to



anchor the rails; completed the Saratoga and Schenectady Railroad in 1839, later the line from Schenectady to Utica, and the Hudson River road in 1851; and was President of the Hudson River Railroad Company for two years. Next he was the builder and for some time President of the Panama Railroad, and afterward was superintendent of the western division of the New York Central Railroad. He was the oldest living graduate of West Point.

#### OBITUARIES, FOREIGN, FOR 1893.

**Adolf, Georg**, Prince of Schanmburg-Lippe, born at Buckeburg, Aug. 1, 1817; died there, May 8, 1893. He married Hermine, Princess of Waldeck-Pyrmont, and leaves several sons, of whom Georg, born Oct. 5, 1845, succeeds him.

**Alexander of Battenberg**, Prince, ex-Prince of Bulgaria, born April 5, 1857; died in Gratz, Austria, Nov. 17, 1893. He was the second son of Prince Alexander of Hesse and of Julie, Princess of Battenberg, a daughter of Count Maurice de Hauke, once Minister of War in the Kingdom of Poland. He was trained in the German military service, which he entered in 1870; joined the Russian army in 1877; accompanied the Grand Duke Nicholas in the Turkish campaign; and on April 29, 1879, was elected by the Grand Sobranje to be the first Prince of Bulgaria, and was approved by the Czar, the Sultan, and the powers. He incurred the displeasure of the present Czar by joining the National party of Bulgaria in refusing to submit to the tutelage of Russian officers, and a rupture took place after the Roumelian revolution and the union of the two Bulgarias. This led to the Servian war of 1885, which Alexander won by the rapidity with which he brought up the Roumelian militia at Slivnitza. A military conspiracy was formed against Prince Alexander by Russian sympathizers and hirelings in the army, and on Aug. 20, 1886, he was kidnapped. His captors liberated him, but he found his position intolerable, and abdicated. Prince Bismarck, in 1888, prevented on political grounds a marriage between Alexander and Princess Victoria of Prussia. In 1890 he abandoned his princely rank and title for the purpose of contracting a marriage with Johanna Loisinger, a singer.

**Ali bin Said**, Sultan of Zanzibar, born in 1855; died March 5, 1893. He was the brother of the Sultans Burghash and Khalifa, and succeeded the latter on Feb. 13, 1890. During his reign an arrangement was made between Germany and England whereby the latter established a protectorate over Zanzibar, and in October, 1891, assumed the administration.

**Andrae, C. C.**, Danish statesman, born in 1812; died in Copenhagen, Feb. 3, 1893. He was an officer of the army and professor in the military school in early manhood; entered the Folkething, and took a prominent part in its proceedings and those of the Landthing after 1848; was often called into the Cabinet; and in 1856 was Prime Minister. He was one of the first advocates of proportional representation, and was a mathematician of the first rank.

**Apolloni, Achilles**, Italian prelate, born in Agnani, May 13, 1822; died in Rome, April 3, 1893. He was educated at the College of Noble Ecclesiastics, and was appointed domestic chaplain to the Pope; became apostolic delegate to Macerata, and afterward canon of St. Peter's. In 1868 he was made auditor of the *rota*; in 1884, *vice-camerlengo*; and on May 24, 1889, was created a cardinal deacon.

**Ballance, John**, Premier of New Zealand, born in County Antrim, Ireland, in March, 1839; died in Auckland, April 27, 1893. He was educated at a national school, and was trained to the business of an ironmonger, which he followed in his own country and in Birmingham, England, until he emigrated to New Zealand in 1866. There he was first a sheep farmer, then opened a jewelry store in Wanganui, and finally succeeded with a newspaper, the "Herald," established in the same town. He was elected to the House of Representatives in 1875 as an advocate of a central administration; became Minister of Education in 1878, and afterward Colonial Treasurer;

resigned in July, 1879, because he could not approve the arbitrary proceedings of Sir George Grey; was Minister of Native Affairs and of Defense and Lands in the coalition Cabinet of Sir Robert Stout and Sir Julius Vogel in 1884-'87; led the Opposition against Sir Harry Atkinson, and became Premier in January, 1891.

**Birch, Charles Bell**, English sculptor, born in 1832; died in London in October, 1893. His busts, statues, and groups were very numerous. He executed a colossal statue of Lord Beaconsfield for the city of Liverpool, and one of Queen Victoria for India; also a monument of Jenny Lind.

**Bleichroeder, Gerson**, Baron von, German banker, born in December, 1822; died in Berlin, Feb. 20, 1893. The firm of which he was the head became connected with the Rothschilds as early as 1828. Under his management it grew from small beginnings to the leading banking house of Berlin before the war of 1866, during which it was intrusted by the Prussian Government with all its financial operations. Bleichroeder's financial knowledge was so esteemed by the Emperor Wilhelm I and Prince Bismarck, who was his friend, that they summoned him to Versailles to determine the amount of indemnity that should be demanded of France and the manner in which it should be paid. For this service he received the Iron Cross, a rare honor for a man in private life. He left nearly 100,000,000 marks.

**Brabourne, Edward Hngessen Knatchbull-Hngessen**, Baron, English statesman, born in 1829; died Feb. 6, 1893. He was the son of a Kentish baronet, was educated at Eton and at Magdalen College, Oxford, where he took his degree in 1850, and in 1857 was elected to Parliament as member for Sandwich. Under Lord Palmerston in 1859 and Earl Russell in 1866 he was a Lord of the Treasury, became Under Secretary for the Home Department in 1866, and again under Mr. Gladstone in 1868, and Under Secretary for the Colonies in 1871. In 1880 he was raised to the peerage, and almost immediately he deserted the Liberal party and became a strong Conservative. In later years he wrote and spoke against home rule, and was prominent in the Liberty and Property Defense League. He was the author of quaint books for children, fairy tales for the most part, including "Stories for our Children" and "Friends and Foes of Fairyland," also of a "Life of Cromwell" and many political pamphlets. His literary knack may have been inherited from his maternal great-aunt, Jane Austen, whose letters he edited.

**Broadwood, Henry Fowler**, English piano-maker, born June 6, 1811; died July 8, 1893. He was the grandson of John Broadwood, the first piano-maker of the name, who came to London in 1769. Henry Broadwood was one of the most skillful and scientific of piano-makers, and introduced many improvements in the art. He entered his father's factory at the age of twenty-one, and in 1836 became a partner in the Broadwood firm, devoting his attention at first to improving the structure of concert grands. In 1843 he produced a square piano with an iron frame, and in the same year a grand piano with iron frame, the first of the kind. His long life was given to the study of his art, and he was always ready to welcome the discoveries of others. He was liberal-minded in the conduct of his business, and his artistic sentiment was quite as marked a feature as his profound knowledge of music.

**Brown, Ford Madox**, English painter, born in 1820; died in London, in October, 1893. He was once one of the chiefs of the English pre-Raphaelite movement. His last works adorn the museum and the city hall of Manchester. His earlier pictures were marked by dramatic interest, as "Romeo and Juliet," "Elijah and the Widow's Son," "Lear dividing his Kingdom," and his later works, as "Haydée," "Picta," and "Farewell to England," in the pre-Raphaelite manner, were highly imaginative and original. In later life he neglected his art to propagate his philosophical theories and socialistic doctrines.



**Cabat, Nicolas Louis**, French painter, born in Paris, Dec. 24, 1812; died there, March 13, 1893. He studied with Camille Fiers, and joined Huet in abandoning the traditions of the classical school of Poussin and Claude Lorrain and introducing a new method of landscape painting. He devoted himself to the interpretation of the scenery of the banks of the Indre and the Meurthe and the landscapes of Normandy, and when he began to exhibit, in 1833, his canvases were criticised for their realism. After a few years he went to Italy, and there fell into the conventional manner, and when he returned others had outstripped him in realistic treatment.

**Calthrop, Claude**, English painter, born in 1854; died in London, April 11, 1893. He was a clever painter of costumes, and pleased the public with his sentimental and historical *genre* pictures.

**Carriere, Justus**, German biologist, born in Munich, in 1854; died in Strasburg, July 13, 1893. He was a son of Moritz Carriere and a grandson of Justus Liebig. He studied zoölogy, anatomy, and physiology in Munich, went to Strasburg after graduating, in 1880, as assistant in the Zoölogical Institute, became a tutor in the university there, and in 1885 professor. He devoted himself to minute biological observations. In 1885 he published a work on the comparative anatomy of the organs of sight in all orders of animals. Later he studied the development of a bee in all the least details and phenomena.

**Charcot, Jean Martin**, French neurologist, born in Paris, Nov. 25, 1825; died Aug. 18, 1893. He took his doctor's degree in 1825, was appointed on a hospital staff in 1856, became a professor in 1860, was called to the Salpêtrière in 1862, and in 1880 founded there the first clinic for nervous disease. Dr. Charcot was a physician of the highest scientific reputation, an author of treatises on the maladies of old age, nervous affections, and diseases of the liver when he first became known to the general public through his experiments in the Salpêtrière hospital in hypnotism and mental suggestion. His original writings on ataxy, lesions of the spinal cord, insanity, aphasia, hysteria, and general neurosis are scarcely less valuable than clinical experiments on hypnotic phenomena.

**Chretien, C. P.**, English theologian, born about 1820; died May 20, 1893. He was educated at Oxford, became a fellow of Oriel College, was ordained in 1844, was a tutor for many years, and took charge of a rural parish in 1860, from which he retired in 1875. He published a treatise on "Logical Method," and a series of university sermons on "The Letter and the Spirit," and a "Dialogue on the Divine Providence," in which he anticipated some of the conclusions of the higher criticism.

**Clark, Sir Andrew**, English physician, born in 1826; died in London, Nov. 30, 1893. He studied in Edinburgh and London, taught anatomy and pathology, intending to devote himself to the latter study, was compelled by circumstances to enter into practice, and became one of the busiest and most noted physicians in England. He lectured at the London Hospital, and wrote extensively, especially on diseases of the respiratory, renal, and digestive organs.

**Cole, Vicat**, English painter, born in Portsmouth, in 1833; died in London, April 6, 1893. He was the son and pupil of George Cole, a noted painter of landscapes, and began to exhibit in 1853. In 1860 he obtained a medal of the Society of Arts for "A Surrey Cornfield," and afterward exhibited similar subjects in the Academy, of which he became an associate in 1870 and a full member in 1880. Departing from his common range of subjects, he obtained a great success a few years before his death with his large painting "The Pool of London," which was purchased for the South Kensington Gallery.

**Colladon, Daniel**, Swiss physicist, born in Geneva, in 1802; died there, July 3, 1893. He was for some time a professor in the Paris École des Arts, and afterward Professor of Mechanics in Geneva. In 1826 he published his researches in photometry and on the effect of electric currents on the magnet. He gained emi-

nence by his researches into the propagation of sound in water and his experiments on the compressibility of liquids. He was also the inventor of the luminous fountain, in which light is reflected from the parabolic wall of water, and of the method of using compressed air in boring tunnels, having begun the study of this problem in 1849, and developed the apparatus that was used in the Mont Cenis and St. Gothard tunnels. He first lighted Geneva with gas in 1843.

**Considérant, Victor Prosper**, French author, born in Salino, Jura, Oct. 12, 1806; died in Paris, Dec. 27, 1893. He became a convert to the socialistic doctrines of St. Simon in early life, was a disciple of Fourier, and after the latter's death undertook to edit his paper, "La Phalange." After the revolution of 1848 he was a member of the Constituent Assembly and of the Legislative Assembly under the republic. In 1849 he went to Belgium, and afterward to the United States, where he hoped to propagate Fourierism. He did not return to France till 1869. Of his socialistic writings the principal ones are "Principles of Socialism" and "Theory of the Laws of Property and of the Laws of Labor."

**Cowper, Edward Alfred**, English inventor, born in London, Dec. 10, 1819; died there in May, 1893. He was the son of a professor of engineering who made useful improvements in the printing press. During his seven years' apprenticeship with John Braithwaite he invented the fog signals used on railroads, and in 1846 he invented an improved chair for rails. He helped to design the machines for making the iron framework of the great building for the exhibition in Hyde Park. He designed also the wrought-iron roof with a great span for the Birmingham railroad station. In 1851 he established himself as a consulting engineer in London. He invented a regenerative firebrick hot-blast furnace in 1857, which he continued to improve up to 1887; also a compound engine with an intermediate receiver, and in 1868 a bicycle wheel with rubber tire and steel spokes. In 1879 he produced an electrical writing telegraph.

**Cox, Samuel**, English theologian, born near London, in 1826; died March 30, 1893. He was educated for the Baptist ministry in the college at Stepney, and became pastor of a church at Nottingham, where he remained till 1888. After publishing a book entitled "The Private Letters of St. Paul and St. John," and a number of volumes on biblical exegesis and theology, he founded, in 1875, the "Expositor," which had on its staff the leading English writers on divinity and religion. He retired from the editorship in 1885. Among his numerous works the most widely read was "Salvator Mundi."

**Crawley, Richard**, English poet, born in 1843; died in April, 1893. He was educated at University College, Oxford, where he was graduated with honors in 1865, became a fellow of Worcester College, and in 1868 published "Horse and Foot," a satire after the manner of Pope that was considered brilliant. "Venus and Psyche" (1871) was not so much admired. In 1874 he published a translation of Thucydides. "The Younger Brother," an archaic drama of the style of the Elizabethan writers, was published in 1878. After that he devoted his attention to life insurance.

**Cumming, Sir Arthur**, English admiral, born in 1819; died in London, Feb. 20, 1893. He entered the navy in 1832, and during the war in Syria was made a lieutenant for his extraordinary courage and address in leading, as a volunteer, the Turkish landing party in the attack on Sidon. Not long afterward, in South America, he boarded a Spanish slaver, and before his men could follow their boat swung off, but he shot the helmsman, and with his pistol kept the crew at bay while he put the wheel about until his boat was once more alongside. He was promoted Commander in 1846, commanded a steamer on the coast of Africa, assisted in the blockade of the Gulf of Riga, and afterward commanded a floating battery in the Black Sea during the Crimean War, was admiral commanding in India in 1872-'75, became a vice-admiral in 1876 and an admiral in 1880, and retired in 1882.



**Darcell, Alfred**, French archæologist, born in Rouen, in 1818; died in Paris, May 28, 1893. He became attached to the Louvre in 1862, was appointed director of the Gobelins in 1872, and in 1885 was made director of the Cluny Museum, which he has enriched by judicious purchases and the encouragement of donations, and has thoroughly rearranged and classified. He was eminent as an authority on mediæval antiquities, on which he wrote numerous books, also a history of the national manufactures of tapestry.

**Delpit, Albert**, French *litterateur*, born in New Orleans, Jan. 30, 1849; died in Paris, Jan. 4, 1893. He was educated in France, and returned to Louisiana to take charge of his father's business, but soon went back to Paris, where he contributed to literary journals. In 1872 he published "L'Invasion," a volume of verse. He had served with distinction in the war of 1870, gaining the cross of the Legion of Honor. He wrote a score of novels, some of which were dramatized, but was more successful in the sketches and essays that he contributed to the "Revue des deux mondes," the "Gaulois," and "L'Événement," a volume of which was published in 1881 under the title of "Les Dieux qu'on brise."

**Derby, Edward Henry Smith Stanley**, Earl of, born at Knowsley, in July, 1826; died there, April 21, 1893. He was educated at Rugby and Trinity College, Cambridge, where he took several prizes and both classical and mathematical honors. Destined for a political career, he offered himself as a Protectionist candidate for Lancaster in March, 1848, the year of his graduation, and was beaten by a bare majority, but in December of the same year, while he was absent on a long tour of travel through the United States, Canada, and the West Indies, he was elected at King's Lynn, which he represented in Parliament till he became a peer. In 1849 he visited South America, and for many years he traveled frequently, studying foreign countries and all parts of the British Empire. His maiden speech in the House of Commons was a sober, closely reasoned plea for the protection of the sugar interests of the West Indian colonies, delivered on May 31, 1851. In 1851-'52 he visited India. When his father, the fourteenth Earl of Derby, became Premier for the first time, he was appointed Under Secretary for the Colonies, in March, 1852. Lord Stanley was not a very sound Tory. If he spoke or wrote on the politico-social questions that most interested him he expressed himself like a Radical of the type of Cobden or Mill, as when he pleaded for exempting Nonconformists from ecclesiastical taxation, or for opening museums on Sundays, or advocated a conscience clause for state-aided schools. Hence Lord Palmerston in 1855 offered him the office of Colonial Secretary, which he declined. This post fell to him in 1858, when his father took office as Prime Minister for the second time, but soon he exchanged it for the Secretaryship of State for India, and carried through the bill transferring the Government from the East India Company to the Crown, with much tact and skill. His reputation as a debater was enhanced by his arguments on the Reform bill and the Irish Church bill of the Liberal Government. When he took office again it was as Minister for Foreign Affairs. His efforts to preserve neutrality were severely criticised by those who believed in a strong and bold foreign policy, as in abandoning the Cretan insurgents to the mercy of the Turkish soldiery, and in attempting to settle the Luxemburg question by the temporizing expedient of a collective guarantee. The Alabama award was laid at his door, because he had yielded the position that Lord Russell had taken and admitted the principle of arbitration. Yet, on the whole, his two years at the Foreign Office were successful, and when Disraeli returned to power in 1874, Lord Derby, who had become a member of the House of Lords on the death of his father, in 1869, was called to his former post, in which he had to deal with a more difficult situation than before. Andrassy's note and the Bulgarian atrocities roused a strong public sentiment against his policy, and when all his efforts to preserve peace proved futile and his predictions

failed, after the Russians crossed the Danube, in June, 1877, differences arose between him and Lord Beaconsfield, who was bent on resisting the advance of Russia, and in company with Lord Salisbury he resigned. He returned to office for a short time, but withdrew when Lord Beaconsfield insisted on warlike preparations after the signing of the treaty of San Stefano. Having broken with the Conservative leaders, he soon became a professed Liberal, and took office under Mr. Gladstone as Secretary for the Colonies. His Radical sympathies and cautious temper caused him to withstand the popular drift toward Jingoism in South Africa, as elsewhere. He believed that there was work to do for civilization within the limits of the United Kingdom, and that the British Empire already had black men enough. After the fall of the Gladstone Government he took no prominent part in politics, and when the party divided on the home-rule question he parted from Mr. Gladstone, though he voted for the Irish land bill of 1870. Till Lord Hartington entered the House of Lords as Duke of Devonshire he led the Liberal Unionists in that Chamber. Lord Derby was an industrious member of several royal commissions, an earnest Chancellor of the University of London, and a liberal contributor to benevolent enterprises. He married the Dowager Marchioness of Salisbury in 1870, but had no children. His brother, Lord Stanley of Preston, Governor-General of Canada, succeeded to the earldom.

**Dhuleep Singh**, Maharajah, deposed Indian prince, born in 1838; died in Paris, Oct. 23, 1893. His father, Dhuleep Singh, who had united the Sikh nation, established his dominion over most of the Punjab, and created an army as powerful as that of the British in India, died when Dhuleep was less than a year old. He was proclaimed Maharajah in 1843 under the regency of his mother. Court intrigues and misgovernment had weakened the organization of the state. The Sikh army was eager for the inevitable conflict with the British, who had already invaded Afghanistan, crushed Sind, and attacked Beluchistan. In 1845 the Rani sanctioned the passage of the Sutlej by the ill-provisioned and disorganized troops, whose bravery and fanaticism made poor amends for the discipline and generalship of the discarded French officers. The British beat in every battle, and demanded the cession of much territory, and an indemnity in money which could only be settled by the cession of much more. In 1848 the British invaded the country on some pretext, and annexed it in 1849, deposing Dhuleep Singh, on whom a pension of £40,000 a year was settled. He went to England, embraced the Christian religion, obtained advances for the purchase and improvement of a country estate after he came of age, and dispensed magnificent hospitality until he was told that he had used up his fortune and could obtain no more funds from the Indian Government. He married a Christian in 1864, by whom he had two children. Dhuleep Singh considered himself robbed. The Indian Government had taken his family estates and private property, including the principal salt mines in India and the Kohinoor diamond, which was coolly handed over to the British Crown. In 1885 he made a formal demand for a settlement of his claims, and on its rejection he set out for India, but the Indian authorities stopped him at Aden.

**Dondukoff-Korsakoff**, Prince, Russian soldier and administrator, born in 1822; died in St. Petersburg, April 27, 1893. He entered the army at an early age, fought the mountaineers of the Caucasus, distinguished himself in the Crimean War, and rapidly rose to the rank of general. As Governor of Kieff he promoted Pan Slavist ideas, and after the peace of San Stefano, in 1878, was made Governor-General of the Principality of Bulgaria. In this capacity he sought to prevent the execution of the decision of the Berlin Congress to divide Bulgaria. He incurred the reproof of the Czar, but was retained in his post until Alexander of Battenberg was elected and installed as Prince of Bulgaria, the Czar having declined to



sanction his own election. On his return to Russia he was appointed Governor of Kharkoff, and in January, 1882, civil governor and commander in chief in the Caucasus.

**Dufour, Jean Étienne**, Swiss statesman, born near Geneva, in 1840; died in Yverdon, in September, 1893. He was a gardener's son, who grew up an active and intellectual youth and plunged into politics at the time when the Geneva citizens began to rebel against the Radical *régime* of Jean Fazy. The Conservative and Liberal coalition chose Dufour for its leader, and thus he became the president of the cantonal State Council and a member of the National Council when his party gained the ascendancy. He had been chosen president of the commission for the national exhibition at Geneva in 1896, and had done much of the preparatory work of organization when he was surprised by death.

**Edelsheim-Gyulai**, Baron **Leopold**, Austrian general, born in Carlsruhe, in 1827; died in Buda-Pesth, March 27, 1893. He entered the Austrian army as a cadet, rose rapidly, distinguished himself at Magenta and Solferino in 1859, held an important command in the war of 1866, and after its close was appointed inspector of cavalry and charged with the thorough reorganization of that arm of the service. Having completed this task, he resigned in 1875, and soon afterward he was appointed to the supreme military command in Hungary.

**Ernst II**, Duke of **Saxe-Coburg-Gotha**, born in Coburg, June 21, 1818; died at Reinhardsbrunn, Aug. 22, 1893. He was a year older than his only brother Albert, the Prince Consort of England. In 1842 he married Princess Alexandrine of Baden, who bore him no children. He succeeded his father, Ernst I, in 1844. In 1863 his name was proposed for the vacant throne of Greece, which he refused for state reasons. He was an earnest defender of state rights in Germany, a prince of liberal ideas, a great friend of art and artists, and a composer of no mean ability, as well as an author. In 1887 he published three volumes of memoirs. He is succeeded by his nephew Alfred, Duke of Edinburgh, Prince of Great Britain and Ireland, who is married to the Grand Duchess Marie Alexandrovna, sister of the Czar, and has one son, Alfred, born in 1874.

**Faider**, **Charles**, Belgian jurist, born in Trieste, in 1811; died in Brussels, April 12, 1893. He was the son of a Belgian functionary of the first empire, was admitted to the bar at Brussels in 1832, entered the magistracy, became Attorney-General at Brussels, and from Oct. 13, 1852, till March 30, 1855, held the portfolio of Justice in the Cabinet of Henri de Brouckere. He succeeded Matthieu Leclercq as Procureur-Général. In 1858 he presided over the congress on literary property at Brussels. He was learned in all departments of the law, and in the laws of all nations and ages, and was the author of many memoirs treating of provincial and communal institutions and their history, and of customary laws, primary education, and the civil status of religious corporations.

**Ferry**, **Jules**, French statesman, born in St. Dié, Vosges, April 5, 1832; died in Paris, March 17, 1893. He studied law in Paris, plunged into political journalism, becoming a writer for "Le Temps" in 1865, and made himself famous in 1868 by a satirical pamphlet on the extravagant outlay on the rebuilding of Paris, to which he gave the title "Les comptes fantastiques d'Hausmann," parodying "Les contes fantastiques d'Hoffmann." He had been an unsuccessful candidate for the Corps Législatif in 1863. After this hit he was elected in Paris in 1869 as a Radical Democrat, and was one of the Deputies who called for the dissolution of the Chamber and free elections, and in 1870 opposed the war with Germany. When the republic was proclaimed the Paris Deputies were all called into the Government of National Defense, to which he was appointed secretary, being charged also with the administration of the Seine. He displayed great energy and personal courage in contending with the insurgent National Guards and the Commune, and

when he succeeded Arago in the central mayoralty, on Oct. 31, 1870, he ordered the distribution of bread, and defended the Hotel de Ville against a body of National Guards who attempted to overthrow the Provisional Government. He resigned his official functions when, after the peace, he was elected Deputy for the Vosges. In May, 1871, he accepted the office of Prefect of the Seine, but his resolute proceedings during the siege had made him obnoxious to the populace, and within two weeks he was replaced. His unpopularity stood in the way of his appointment as minister to Washington. In the Chamber he could not work harmoniously with Thiers, and therefore he was appointed minister to Athens, where he remained till the fall of Thiers. After his return he became a leader of the Republican Opposition, being elected President of the Republican Left. He was prominent in every parliamentary crisis that occurred during the presidency of MacMahon, and was one of the foremost of the 393 Deputies who voted down the Duc de Broglie's ministry in 1877. He devoted himself especially to financial questions, serving industriously on the Budget Committee and as President of the Tariff Commission. When the Republic was made definitive and Grévy was elected President, Jules Ferry came to the front as one of the most important members of Grévy's first Cabinet. As Minister of Education he reopened the religious question, and exasperated the Catholics by proposing in 1879 his bill to regulate the right of the clergy to teach, and of the free universities to confer degrees, especially by the famous Article VII of the bill directed against the Jesuits, which prohibited teaching in public or private establishments by members of unauthorized religious congregations. The bill passed the Chamber by a large majority, but was rejected by the Senate on the recommendation of a committee containing several moderate Republicans, and having Jules Simon for its chairman. In 1880, when he was Minister of Education under M. de Freycinet, the bill was again brought in and lost by a small majority in the Senate. Ferry then proceeded to expel the Jesuits under old laws that had become obsolete. The Radicals in the Cabinet resigned because he did not proscrib the other unauthorized congregations as well. Ferry then formed a Cabinet, and rigorously carried out the principle of Article VII. He acknowledged the leadership of Gambetta, and was not less energetic and more combative than his leader in pursuing the ideal of a genuine republic free from socialistic tendencies, but purely secular and democratic, and safe from monarchical and clerical reactionary influences. When he was Premier, he planned with Barthélemy St-Hilaire the annexation of Tunis, knowing that Germany would not and that England and Austria could not object, that Turkey's protest would be futile, but that the friendship of Italy would have to be sacrificed. In November, 1881, having been a year in office, he retired on being attacked on account of the Tunisian expedition, willingly making way for the Gambetta ministry. When Gambetta died, in the following year, Ferry succeeded to the leadership of the Opportunists. He joined the Freycinet Cabinet as Minister of Instruction after the fall of Gambetta's ministry, then remained for about a year out of office, and on the defeat of the Fallières ministry assumed the premiership and the Ministry of Public Instruction. This he exchanged for that of Foreign Affairs. Capt. Henri Rivière having perished in Tonquin, the victim of his own foolhardy courage, the whole public clamored for the vindication of French prestige. Ferry saw in French India, as in Tunis, an outlet for the martial and ambitious spirit that was likely to plunge the country unprepared into another trial of arms with Germany. He hesitated at first, perceiving that operations in Tonquin would be useless unless they resulted in the conquest and organization of the country. When they were at last undertaken on an adequate scale, and the eyes of the French people were opened to the magnitude of the sacrifice that was required, then the strongest and deepest political senti-



ment of the nation recoiled from Ferry. He who was calculating and sagacious, and contemptuous of fitful gusts of political sentiment, and scornful of politic concessions or pretended concessions to popular passion, had offended every element that was moved by sentiment and passion—the Monarchists and Catholics, even the Radical freethinking foes of the Church, the Socialist opponents of a bourgeois republic, and finally the protagonists of revenge and the great body of people in every party animated by the sentiment of which they made capital. When Gen. Négrier's dispatch announcing the defeat at Langson, in 1884, was published, Ferry's Cabinet was overthrown. He, the "Ton Kinois," was execrated for having dissipated in distant colonial adventures the military strength that should have been husbanded for the recovery of the lost provinces, for having wasted blood and treasure, and involved the country in responsibilities that delayed for a long time the day of revenge, either tricked by Bismarck, or perhaps sympathizing with his policy, hence either a fool or a traitor. For the next eight years, while the republic moved more smoothly along the groove into which Ferry, more than any other man, had engineered, while his Tonquin policy was carried out, and the apostles of revenge were covering their cause with ridicule, while the policy of the Government grew more candidly pacific, and a war undertaken in the heat of passion became remote from the public mind, more reflecting after the recovery of financial strength and military equality with Germany than before, whenever the "Ton Kinois" raised his voice in public or in Parliament he was assailed with yells and insults that drowned his words. The thinking Republicans who had stood by his side in the political conflicts in which he had taken the most aggressive part, and exposed himself as a mark for hatred and abuse, gave him many votes for President of the republic when Grévy resigned. He received 212 ballots to Carnot's 303, and 148 given to Gen. Saussier, but withdrew from the contest rather than expose the republic to the danger of civil war. A few days later he was fired upon in the lobby of the Chamber by a man named Aubertin, who was found to be insane. From that time he submitted to ignominy and ostracism with scarce a protest, remaining usually silent in his place in the Chamber, to which his faithful constituents of the Vosges continued to elect him. He was a determined opponent of the pretensions of Boulanger, and stung him by the epithet of "St. Arnaud of the music halls" into sending a challenge, but the duel did not take place. In 1893 he was elected President of the Senate, and sober Republicans counted the reacquisition of his keen intellect and strong character for the service of the state almost a compensation for the losses resulting from the Panama exposure, but only a few weeks after his political rehabilitation he died.

**Fox, Sir William**, New Zealand statesman, born in Durham, England, in 1812; died near Auckland, June 23, 1893. He was graduated at Oxford in 1832 and called to the bar in London in 1842, emigrated to New Zealand, became an agent, and in 1849 the chief agent, of the New Zealand Company, went to England to press the claims of the colony for self-government, and when responsible government was conceded was the first Premier of the colony from May till June, 1856. In 1861-'62 he was again Premier, in 1863-'64 Colonial Secretary, in 1869-'72 Premier once more, and in March, 1873, assumed the premiership for the fourth time, resigning a month afterward in favor of Sir Julius Vogel. After retiring from politics he devoted himself to the propagation of temperance principles.

**Franceschi, Jules**, French sculptor, born in Bar-sur-Aube, Jan. 11, 1825; died in the beginning of September, 1893. He was the son of Italian parents, but became a naturalized Frenchman, and studied sculpture with Rude. He produced a large number of works that were well esteemed, among them a portrait of Mine. Carvalho, the singer, and won medals in 1861, 1864, and 1865.

**Francke, Adolphe**, French scholar and journalist, born in Liacourt, Meurthe, Nov. 9, 1809; died April 10, 1893. He was of Jewish extraction. In 1854 he took charge of the course on the law of nations and of nature in the College of France. For some time he was editor of the "Journal des Débats." His principal works are "Dictionnaire des Sciences Philosophiques" and "La Kabbala, ou la Philosophie religieuse des Hébreux."

**Froebel, Julius**, German journalist, born in Griesheim, in 1806; died in Zurich, Switzerland, Nov. 7, 1893. He was educated at Munich and Berlin, settled in Zurich in 1833, and for several years taught geography and natural science in the university, founded a Radical newspaper in 1839, and in 1844 a publishing office for contraband political writings, went to Saxony in 1845, was elected to the National Assembly at Frankfort in 1848, returned to Switzerland after the suppression of the revolution, and then emigrated to America, where he traveled extensively, founded a paper in San Francisco in 1855, and engaged in industrial enterprises in New York. Attempting to return to Germany in 1857, he was expelled, and went to England. In 1867 he started a Liberal paper in Munich, the "Süd-Deutsche Presse," and after 1873 was German consul at Symrna and subsequently at Algiers. He published a book of American travels.

**Galt, Sir Alexander Tilloch**, Canadian statesman, born in Chelsea, England, Sept. 6, 1817; died in Montreal, Sept. 19, 1893. He was educated in England and Canada, entered the Canadian Parliament in 1849, and from 1858 till 1864 was Minister of Finance. In 1867 he filled the same post for a few months. In 1880 he became Canadian commissioner in London, and in 1881 represented the Dominion in the monetary conference at Paris.

**Ghislanzoni, Antonio**, Italian poet, born in Lecco in 1824; died in Caprino Bergamaseo, Lombardy, in July, 1893. He was a singer in early life, and his barytone voice was admired in Italian cities and was heard at the Italiens in Paris in 1851. He was also a Republican journalist, and was imprisoned at Milan. He was one of a party that went to defend Rome when it was besieged by the French, and was arrested by them and deported to Corsica. Having lost his voice by bronchitis, he became a writer of romances, which were published in a Milanese magazine, and a librettist for Italian composers. He wrote more than sixty books of operas, including "Aida," "Lituani," and others, for Giuseppe Verdi.

**Giordani, Luigi**, Italian prelate, born in Codifume, Oct. 13, 1822; died in Ferrara, April, 1893. He was Archbishop of Ferrara, and was created a cardinal on March 14, 1887.

**Girardet, Paul**, French engraver, born in Neufchatel, Switzerland, March 8, 1821; died in Paris, in March, 1893. He was the son and the grandson of celebrated engravers. In 1842 he exhibited engravings of pictures painted by his brother Karl, and subsequently here produced Delaroche's picture of "Marie Antoinette au Tribunal," the "Escamoteur" and "Cinquantaine" of Knaus, Brion's "Noce en Alsace," Dubufe's "Enfant prodigue," and other paintings.

**Gonzalez, Manuel**, ex-President of Mexico, born near Matamoros, in October, 1820; died in the city of Mexico, in March, 1893. He first became known in 1843 as one of Father Javanta's ruthless guerrillas. During the revolutionary wars he won a high reputation for bravery and ability, and lost his right arm in battle. He was governor of the palace in 1867-'71; was arrested for complicity in the disappearance of Maximilian's plate, escaped, and joined the forces of Porfirio Diaz;





fought with Diaz again in 1876, and by his timely arrival with 3,000 cavalry won the battle of Lomas de Tecocoac, which made Diaz President. He became Minister of War, and in June, 1880, succeeded Diaz, who was not eligible for a second term. The disastrous financial experiments that marked his administration and his attempt to settle the English debt made him so unpopular that he resigned the presidency in favor of Diaz on Nov. 30, 1884.

**Gordon, J. E. H.**, English electrician, died in London, Feb. 3, 1893. He contributed papers to the "Philosophical Transactions" on electricity, lectured on that and other branches of physical science in university extension courses, and became subsequently an active electrical engineer. He was the author of "A Physical Treatise on Electricity and Magnetism" (1880).

**Hamley, Sir Edward B.**, English general and military writer, born in 1824; died in London, Aug. 12, 1893. He served as a captain in the Crimean War. In the campaign in Egypt against Arabi Pasha, in 1882, he commanded a division with which he broke through the center of the enemy at the battle of Tel-el-Kebir. He gained a high reputation as Professor of Military History. As British commissioner for the demarcation of the Turkish boundary after the treaty of Berlin he was not successful. Sir Edward Hamley was the author of a work on the military operations and career of Wellington and an account of the siege of Sebastopol, also of two romances and some books of literary biography. He was a Conservative member of Parliament for Birkenhead, and wrote much against Irish home rule.

**Hefele, Karl Josef**, German ecclesiastical historian, born in 1809; died in Rottenburg, June 5, 1893. Dr. Hefele became Professor of Church History in the Roman Catholic faculty of Tübingen in 1840. He wrote a life of Cardinal Ximenes, published in 1844. In 1855 appeared the first volume of his "History of the Councils of the Church," which has been translated into English and French. He was made Bishop of Rottenburg in 1869, and in the Œcumenical Council of 1870 stood out resolutely against the dogma of papal infallibility, yielding only after the promulgation of the decree.

**Higinbotham, George**, Australian statesman and jurist, born in Dublin, Ireland, in 1827; died in Melbourne, Victoria, Jan. 1, 1893. He was educated in Trinity College, Dublin; was called to the bar in London in 1853; went to Victoria in 1854; and, before he built up a successful law practice, wrote political articles for the "Argus," having been trained to newspaper work as law reporter for the London "Morning Chronicle." He discussed the problems of government that arose, and in 1860 entered the Legislative Assembly, where he distinguished himself as a bold and original political thinker who cherished high hopes for the future of Australia. He was Attorney-General in 1863-'68, when the Home Government persisted in vetoing the protective tariff, but at last gave way and recalled the Governor. In 1880 he was appointed a judge, and in 1886 Chief Justice.

**Holst, Hans Peter**, Danish poet, born in Copenhagen, Oct. 22, 1811; died there, June 2, 1893. He studied at the University of Copenhagen, became a teacher at the Academy of Cadets, and first became known as a poet in 1839 through an elegy on Frederick VI. Most of his subsequent lyric and dramatic works celebrated events connected with the history of his country or its sovereigns. He laid down his professorship in 1861 to edit the "Berlingske Tidende," and in 1875 he was appointed the official dramatic poet of the court theater. Besides poetry and plays he wrote novels after the model of Andersen. His best productions were his ballads.

**Jennings, Louis John**, English author and politician, born in London, in 1836; died there, Feb. 9, 1893. He was editor for a time of the New York "Times," in 1863-'68, and after his return to England was employed as reader for the publishing house of Murray and as the representative of the New York "Herald."

From 1885 till his death he represented Stockport in Parliament as a Conservative. He edited the "Croker Papers," and wrote "Field Patis," "Rambles among the Hills," and "Eighty Years of Republican Government in the United States."

**Jowett, Benjamin**, English Greek scholar, born in London, in 1817; died in Oxford, Oct. 1, 1893. He studied at Balliol College, Oxford, was graduated with honor, became a tutor of Greek, and attained a high reputation. He performed important services on the commission presided over by Macaulay, which determined the intellectual standards for admission into the East India service. From 1855 he was Professor of Greek at Oxford, and in 1870 he was elected master at Balliol. Soon after he was appointed professor his views on the inspiration of the Scriptures gave rise to a lively controversy; and in consequence he was finally excluded from the university pulpit. Prof. Jowett published a commentary on St. Paul's epistle to the Thessalonians, several theological treatises, and translations of the "Dialogues" of Plato and of some of the writings of Aristotle and Thucydides. He introduced the earnest study of Plato into Oxford University, and was accustomed to say, "Aristotle is dead, but Plato lives."

**Kemble, Frances Anne**, English actress, born in November, 1809; died in London, Jan. 15, 1893. She was the daughter of Charles Kemble, a graceful comedian, and a niece of John Philip Kemble and



Mrs. Siddons. Her father would not train his daughter for the stage, but when his management of Covent Garden Theater, in 1829, had brought him to bankruptcy he called for her services and those of her mother, who had retired long before. She played Juliet, and afterward Belvidera in "Venice preserved," and Euphrasia in the "Grecian Daughter," electrifying the London audiences and being greeted as a second Mrs. Siddons. In 1830 and 1831 she added the rôles of Lady Macbeth, Calista in the "Fair Penitent," Lady Townley in the "Provoked Husband," Mrs. Haller in "The Stranger," Mrs. Beverley in "The Gamester," and Juliana in "The Honeymoon." In 1832 she won admiration in the original parts of Julia in Sheridan Knowles's "Hunchback," and the Duchess de Guise in an adaptation of the "Henri III" of Alexandre Dumas, and produced a tragedy of her own called "Francis I." which was not well received. In the autumn of that year she went to the United States with her father, making her *début* in the Park Theater, New York, as Bianca in "Fazio," and entrancing the people of that city and those of Boston and Philadelphia still more. In 1834 Fanny Kemble retired from the stage for a long period, having become the wife of Pierce Butler, a



Southern planter. Her married life was not happy, and eventually she obtained a divorce and reappeared in London in 1847 at the Princess's Theater, only to discover that her prestige and her powers were gone; nor had she much better success at first in Shakespearian readings. From that time she lived most of the time in the United States, engaged in literary composition, and occasionally appearing in public as a reader. She was the author of "A Journal of a Residence in America," "The Star of Seville," "A Year of Consolation," translations of Schiller's "Marie Stuart," and Dumas's "Mademoiselle de Belle Isle," "Residence on a Georgia Plantation in 1838-'39," "Notes on Some of Shakespeare's Plays," and three remarkable autobiographical works entitled "Records of a Girlhood," "Records of Later Life," and "Further Records."

**Lacressonnière**, the stage name of **Louis Lesot de la Penneterie**, French actor, born in 1819; died in Paris, June 10, 1893. He was trained for a commercial career, which he abandoned for the theatre, spending a year at the Conservatoire after acting for a few months at the Gaiété. He performed various rôles in the provinces, achieved a success at the Ambigu, acted at the Théâtre Historique, and soon was intrusted with the principal parts in most of the new plays of Alexandre Dumas and François Soulié. He appeared later at the Porte Saint-Martin and the other chief theaters.

**Le Gendre, Léonce**, French painter, born in 1830; died in Tournai, July 10, 1893. He produced many remarkable paintings, which were acquired by Rothschild and other French collectors. At the time of his death he was director of the Academy of Design at Tournai.

**Leinster, Gerald Fitzgerald**, Duke of, born Aug. 16, 1851; died in London, Dec. 1, 1893. He was descended from a Florentine adventurer, one of the famous Gherardini family who accompanied the Normans to England. Maurice Fitz Gerald in the next century established the English rule in Ireland. The Fitz Gerald's were made Earls of Kildare in 1316, and Dukes of Leinster in 1766. The late duke succeeded his father in 1887, and is succeeded by Maurice, Marquis of Kildare, born March 1, 1887, the eldest son of his marriage with Lady Hermione Duncombe, a celebrated beauty.

**Locker, Arthur**, English journalist, born in Greenwich, July 2, 1828; died in London, June 23, 1893. He was the son of a civil commissioner of Greenwich Hospital, was educated at Charterhouse and at Pembroke College, Oxford, where he was graduated in 1851, was engaged for a short time in a mercantile employment at Liverpool, emigrated to Australia, where he wrote for the press, and after various adventures there and in India returned to England in 1861, and contributed reviews to the "Times" from 1865 till 1870, when the "Graphic" was founded and he became its editor, in which post he remained till failing health compelled him to resign, in 1891. He was the author of "Stephen Scudamore," "On a Coral Reef," and other works of fiction.

**Lonlay, Dick de**, the pseudonym of **Georges Hardouin**, French soldier, author, and artist, born in St. Malo, in 1845; died in Moscow, Oct. 1, 1893. He served in the imperial guard in France, afterward took service in a regiment of the Don Cossacks, and returning to France took part in the Tunisian campaign. He published many narratives of modern feats of arms, illustrating his own books. In 1883 he was editor of the "Drapeau," the organ of the League of Patriots. A critic of his book "Français et Allemands" accused him of compiling his works, upon which he brought suit in 1889, and after losing his case he went back to Russia.

**Lübke, Wilhelm von**, German art critic, born in Dortmund, Jan. 17, 1826; died in Carlsruhe, April 5, 1893. He was the son of a teacher of exceptional attainments, and he himself showed remarkable and versatile talents in his boyhood, playing the most difficult pieces on the organ, and carrying on anonymously a

religious controversy in the newspaper with the parish priest. He studied philology in Bonn and Berlin, became a writer for art journals, having given up his place as a teacher in the gymnasium to follow aesthetics as a profession, eked out his living by giving lessons on the piano and in singing, obtained commissions to draw and describe churches for atlases of architecture, and printed in 1852 a short introduction to the study of mediæval church architecture, and in the following year his work on mediæval art in Westphalia gave him a high standing among writers on art. In 1855 he published a handbook of architecture, the first illustrated book of the kind, and the first one that was intended for popular readers. It had a great sale, although it was free from all the literary embellishments and artifices that are used in popularizing technical subjects. In 1857, after having begun his "Denkmäler der Kunst," he was appointed tutor in the Berlin Academy of Architecture. In 1860 appeared his "Grundriss der Kunstgeschichte," of which ten large editions have been sold. It was followed by a work on the history of architecture, and in 1863 by one on the history of sculpture. In 1866 he went as professor to Zurich, returning in 1866 to Germany to lecture in the technical high school at Stuttgart. In 1868 appeared his treatise on the history of the Renaissance in France, and in 1873 that on the history of the Renaissance in Germany. In 1878 he published a work on the history of painting in Italy. In 1885 he left Stuttgart to accept the professorship of the History of Art in Carlsruhe.

**McCall, R. W.**, English missionary, born in 1821; died in Paris, May 12, 1893. He was the son of an Independent minister and theologian, and was a minister himself at Sunderland and other places, until he visited Paris in 1871, and was encouraged to return and devote himself to the propagation of evangelical religion by seeing the general revolt against the Catholic Church among the working people, and their tendency toward atheism. In this work he was supported by subscriptions from Great Britain and America. He established 43 missions in Paris, 89 in other French towns, and 6 in Algeria and Tunis. His benevolent and educational work among the debased population commanded general approbation, and won for him the ribbon of the Legion of Honor.

**Macpherson, William**, Scottish jurist, born in Aberdeen, in 1813; died in London, April 20, 1893. He was educated at Charterhouse and Trinity College, Cambridge, was called to the bar in 1837, and in 1841 published a learned treatise on the law of infants. He went to India in 1846, prepared while acting as master in chancery a standard work on Indian civil procedure, returned to Europe at the end of twelve years, and was invited by John Murray to take the editorship of the "Quarterly Review," which he held for six years, resigning then in order to devote his attention wholly to his duties as secretary of the Indian Law Commission. Subsequently he practiced law, writing a standard work on the practice of the Judicial Committee, and later was legal adviser and then judicial secretary to the India Office.

**Madrid, Marguerite**, Princess of Bourbon-Parma and Duchess of, wife of Don Carlos, the Spanish pretender, born in Lucca, Jan. 1, 1847; died in Viareggio, Italy, Jan. 29, 1893. She was the daughter of the Duke of Parma, who was assassinated in 1854, by Princess Louise of France, the sister of the Comte de Chambord, by whom her four children were adopted. In 1867 she married Don Carlos, head of the Spanish Bourbons, who was the nephew of the Comtesse de Chambord. After the collapse of the Carlist insurrection of 1873 she lived with her husband in France until he was expelled, in 1881. After the death of the Comtesse de Chambord she became the owner of Frohsdorf, where she spent her summers with her five children.

**Marshall, Arthur Milnes**, educator, born June 8, 1852; died in Cumberlandshire, England, Dec. 31, 1893. He was graduated at St. John's College, Cambridge, in 1874; studied at Dr. Dohrn's zoölogical station in



Naples in 1875; in that year and 1876 assisted the late Prof. Balfour at Cambridge in organizing the classes in comparative morphology; entered at St. Bartholomew's Hospital in 1877; was appointed Professor of Zoölogy in Owens College, Manchester. He was secretary, and afterward chairman, of the General Board of Studies, in organizing the courses of study for the Victoria University. He was the author of several papers in scientific journals dealing with the early stages of development of the nervous system of a book on the frog, and, jointly with Mr. Hunt, of a work on practical zoölogy. Passing the Christmas holidays at Westdale Head, Cumberland, he suffered a fatal fall in climbing the peak of Scafell.

**Martos, Christino**, Spanish statesman, born in 1832; died in Madrid, Jan. 18, 1893. He became a Republican journalist at an early age, was condemned to death for participation in the rebellion of 1866, and escaped to France; returned in 1868 after the dethronement of Queen Isabella, and took a prominent part in politics till the restoration in 1875, when he retired to devote himself to the practice of law, in which he was very successful. In 1879 he returned to the Cortes, declared for the monarchy of King Alfonso, and attached himself to Sagasta's party. He was a powerful, original, and independent speaker, not a docile partisan, but yet was intrusted with the portfolios of Justice and Foreign Affairs, and several times was elected President of the Chamber.

**Masius, Hermann**, German author and educator, born in Trebnitz, Jan. 7, 1818; died in Leipzig, May 22, 1893. He studied theology in Halle, became a country teacher, and wrote a book called "Naturstudien," in which he described with fine literary art the plants and animals of his country, and the scenes of nature in a picturesque, imaginative, and highly poetical style. He became director of the high school for girls in Halberstadt, and exhibited such power and skill to stimulate, interest, and instruct, and had given so much study to the art of teaching, that he was called to the University of Leipzig as Professor of Pedagogics. His principal other works, besides text-books of zoölogy and reading, are "Bunte Blätter" and "Deutscher Wald und Hain."

**Maupassant, Guy de**, French novelist, born in 1850; died in Paris, July 6, 1893. He was a descendant of an old Norman noble family, and when a clerk in



and cynical naturalistic poetry, "Des Vers" (1880), elaborated with exquisite art. In the next eleven years he turned out short stories and novels with astonishing rapidity, 30 volumes altogether, all ripe and finished products. In his later and longer stories he departed from the trivial and ignoble subjects and the graphic and dramatic treatment of the naturalistic school, to deal more analytically with deeper problems of human nature. Maupassant was

one of the masters of modern French style, free from every artifice or mannerism, producing his descriptive and dramatic effects with familiar words and phrases as simple and lucid as the language of Rousseau or Voltaire. The best of his other works are: "La Maison Tellier" (1881); "Mlle. Fifi" (1882); "Contes de la Bécasse" (1883); "Une Vie" (1883); "Claire de Lune" (1883); "Les Sœurs Rondoli" (1884); "Monsieur Parent" (1886); "Mont-Oriol" (1887); "La Petite Roque" (1888); "Bel-Ami"; "Pierre et Jean" (1888); "Fort comme la mort" (1889); "L'Inutile Beauté" (1890); "Notre Cœur" (1890). Incessant strenuous mental exertion resulting in nervous exhaustion, Maupassant resorted to drugs to stimulate his flagging brain until his mind gave way, and for the last two years of his life he was confined in an insane asylum. His comedy "La Paix du Ménage" was produced a few weeks before his death.

**Maus, Henri**, Belgian engineer, born in Namur, Oct. 22, 1808; died in Ixelles, July 18, 1893. He was employed in most of the great works of engineering executed during his active life in Belgium, and his invention and resources were sought often in aid of novel projects undertaken in other countries, such as the piercing of the railroad tunnels in Switzerland, for which he invented valuable appliances and machinery.

**Mazade, Charles de**, French author, born in Tarn-et-Garonne in 1820; died in Paris, April 27, 1893. He was the son of a judge and the grandson of a member of the Convention of 1792. Going to Paris after studying law at Toulouse, he wrote for "La Presse" and the "Revue de Paris," and afterward for the "Revue des deux mondes," to which he contributed the political chronicle from 1852 to 1858 and from 1869 till the time of his death. He published a history of the Franco-Prussian War and a biography of Thiers. He was elected to the Academy in 1862.

**Merivale, Charles**, English historian, born in Devonshire, in 1808; died Dec. 27, 1893. He was educated at Harrow and Haileybury, and at St. John's College, Cambridge, where he was graduated in 1830 with high honors, became a fellow and tutor, and in 1838-'40 was university preacher. He was Hulsean lecturer in 1861 and Boyle lecturer in 1865, chaplain of the House of Commons from 1863 till 1869, and in the latter year was appointed Dean of Ely. Dean Merivale was the author of "Fall of the Roman Republic" (1853); "History of the Romans under the Empire" (1850-'62); "Conversion of the Roman Empire" (1864); "Conversion of the Northern Nations" (1865); a translation of the "Iliad" (1869); and "A General History of Rome" (1875).

**Minto, William**, British educator and author, born in 1845; died in Aberdeen, in March, 1893. As professor of Logic and English in the University of Aberdeen he had a wide reputation, and he was also the author of numerous works, including several novels.

**Miribel, Marie Francois**, French general, born in Montbonnet, Isore, in 1831; died in Paris, Sept. 12, 1893. He studied at the Polytechnic School in Paris and the Artillery School in Metz, was commissioned a lieutenant of artillery in 1855, and departed for the Crimea. In the Italian war of 1859 he served in the horse artillery and was severely wounded at Solferino. He went with Bazaine to Mexico as a captain and received a disabling wound in the assault of Puebla, in consequence of which he was assigned to bureau duty in the War Office. Later he was military *attaché* of the embassy at St. Petersburg. When the Franco-German War broke out, Miribel, who held the rank of lieutenant-colonel, applied for an assignment to active service. His desire was not gratified till after the fall of the empire, when the Government of National Defense gave him a command. He was prominent in the defense of Paris, especially in the battles of Malmaison, Champigny, and Buzenval, and aided in the suppression of the Commune, after which he was made a colonel, and in 1875 a general. In November, 1881, when the Gambetta ministry was formed, he was selected to be chief of the newly organized general staff. This post he held till his death.



He worked out the plan for the mobilization of the French army in the event of war, and is supposed to have completed a plan of campaign to be followed in case another war with Germany should break out. His death was the result of a fall from his horse.

**Moleschott, Jacob**, Dutch physiologist and member of the Italian Senate, born in Bois-le-Duc in 1822; died in Rome, May 20, 1893. He studied natural science and medicine at Heidelberg, practiced medicine in Utrecht, returned to Heidelberg as Professor of Anatomy, Physiology, and Anthropology in 1847, resigned in 1854 on receiving a warning from the Government on account of the materialistic tendency of his writings, became Professor of physiology at Zurich in 1856, went in the same capacity to Turin in 1861, was nominated a Senator in 1876, and in 1879 became Professor of Physiology in the University of Rome. The Italians were proud of their adopted citizen, and in the Senate he influenced legislation by elucidating social questions with his scientific knowledge.

**Moore, Albert**, English painter, born in 1851; died in September, 1893. His delicate coloring, resembling the art of the Japanese, was appreciated by connoisseurs in England and on the Continent.

**Mortemart, René de Rochechouart**, Duc de, French statesman, born in Paris, March 10, 1804; died there, May 23, 1893. Descended from a feudal house of Poitou founded in the eleventh century, he was allied by blood with the Crussols, Montmorencys, and other ancient noble families. He was educated at the military schools of St. Cyr and Saumur, and received a commission in the lancers of the guard, which he resigned in 1828. Just before the abdication of Louis Philippe he had been elected a Deputy for the Rhône, and as such he sat in the Constituent Assembly among the members of the Legitimist Opposition. From 1851 till 1863 he sat in the Corps Législatif. He served in the Franco-German War as colonel and chief of staff in the First Army of Paris, was retired in 1871, and was elected Deputy for the Rhône in the National Assembly. He succeeded to the title and estates on the death of his great-uncle in 1875, and was chosen President of the Cercle Agricole.

**Mozley, Thomas**, English author, born in Gainsborough, in 1806; died in Cheltenham, June 17, 1893. He was educated at the Charterhouse school and at Oriel College, Oxford, where he took his degree in 1828, and in the following year was chosen a fellow, and was thus closely associated with the leaders of the Oxford movement for the revival of patristic theology and pre-Reformation religion. He accepted a college living in 1832, and in 1836 took charge of the decayed parish of Cholderton, resigned his fellowship, and married a sister of John Henry Newman. Having edited the "British Critic" for two years, and then become in 1844 a writer for the "Times" on religious and various other subjects, he resigned his pastorate in 1847 and went to London to devote himself entirely to journalism. He was an indefatigable writer, and the anonymous articles that he contributed to the "Times" till near the time of his death were as rich and choice as anything that appeared in that paper, owing their interest to their ingenious, versatile, witty, scholarly, and polished style rather than to sound and consistent reasoning. He undertook clerical work again at Plymtree, Devonshire, in 1868, retiring in a few years on account of infirmity and failing eyesight. His letters from Rome to the "Times" during the Vatican Council in 1869-'70 were published in book form. Not long before his death he published a volume of "Reminiscences" dealing with the Tractarian movement, and two volumes of introspective speculative theology entitled "The Word" and "The Creed, or a Philosophy," in which his charming tempered and refined style was first revealed under the author's name.

**Nettleship, Henry**, English classical scholar, born in Kettering, in 1839; died in Oxford, July 10, 1893. He was educated at Durham school and Charterhouse and at Oxford, where he took high honors, became a fellow at Lincoln, was assistant master at Harrow in

1868-'73, then tutor at Oxford, and in 1878 was elected Corpus Professor of Latin. He published lectures on "Ancient Lives of Vergil" and other classical subjects, and amassed materials for a great Latin dictionary which the Oxford press is expected to print.

**Nicholson, Alexander**, Scottish writer, born in the island of Skye, at Husabost, in 1827; died in Edinburgh, Jan. 14, 1893. He studied first theology, but abandoned his intention of entering the ministry of the Free Church on account of doctrinal difficulties, turned to the law, and was admitted as an advocate in 1860, having previously edited since 1855 the Edinburgh "Guardian," and assisted Sir William Hamilton in the chair of Logic and Prof. MacDougall in the chair of Moral Philosophy. As a legal practitioner he was unsuccessful, but he held the office of sheriff substitute, first in Dumfriesshire and then in Greenock, from 1872 till 1889. He was assistant commissioner in the Duke of Argyll's education commission of 1865, when he prepared an admirable report on the people of the Highlands, and in 1883 was a member of the crofters commission. He was one of the editors of the eighth edition of the "Encyclopædia Britannica," contributed frequently to the "Scotsman," wrote many delightful songs both in English and Gaelic, published a collection of Gaelic proverbs, and revised the Gaelic version of the Bible for the Society for Promoting Christian Knowledge.

**Nissel, Franz**, Austrian dramatist, born in Vienna, March 14, 1831; died in Gleichenberg, July 21, 1893. His first play was a drama of peasant life, "Ein Wohltäter," produced in the Vienna Court Theater in 1856. The heroic tragedies in verse that followed, "Heinrich der Löwe" (1858) and "Perseus von Macedonien" (1862), were not successful. "Agnes von Meran" obtained a prize, but on account of its repulsive theme was not well adapted for the stage. None of the managers cared for his plays because they were too grandiose for the modern taste, though his fellow-poets thought it hard that his rare merits should be thus neglected. When Wilbrandt became director of the Vienna Court Theater he staged the rejected "Zauberin am Stein," and it had a great success. His comedy "Ein Nachtlager Corvins" was also accepted. His select dramas were published in 1892. He left "Mahomet" and several others that have not been played or published.

**Otto, Paul**, German sculptor, born in 1847; died in Berlin, in April, 1893. He designed the Humboldt statue in Berlin and the statue of Victor Emmanuel at Rome, where he resided thirteen years, returning to Berlin in 1886. His design for a statue of Luther to be erected in Berlin gained the first prize.

**Palmer, H. S.**, English military engineer and explorer, born in 1838; died in Tokio, Japan, March 11, 1893. He was the son of a distinguished officer of the Madras staff, entered Woolwich in 1856, obtained a commission in the engineers, and was sent to British Columbia, afterward spent twelve years in the ordnance survey of England, and in 1869 took joint command of the Mount Sinai expedition with Sir Charles Wilson. In 1882 he went to New Zealand to make observations of the transit of Venus. Subsequently he took up his residence in Japan, where he was engaged in constructing water works.

**Parieu, Louis Esquirou de**, French statesman, born in Aurillac, April 13, 1815; died in Paris, April 9, 1893. He studied law, political economy, and natural philosophy in Strasburg and Paris; graduating in 1841. He was a member of the Constituent and National Assemblies, was made chief of the financial section in the Council of State after the *coup d'état*, presided over the same department in the ministry of Ollivier, after having been Minister of Public Instruction, and after the fall of the empire retired into private life. He was the author of important treatises on taxation, the monetary policies of France and Germany, political science, etc., and of a biography of Gustavus Adolphus.

**Paris, François Edmond**, French naval commander and writer, born in March, 1806; died in Paris, in



April, 1893. He entered the navy in 1820, accompanied Dumont d'Urville as ensign on his voyage of discovery in 1826, became a lieutenant in 1832, navigated to China the "Archimède," which was the first steamer that doubled the Cape, was promoted captain in 1846, and in the Crimean War commanded a vessel with such ability as to gain the grade of rear-admiral, and was made vice-admiral in 1864. He was the author of a dictionary of steam navigation and a treatise on the screw propeller.

**Parke, Thomas Heazle**, Irish African explorer, born in Drumona, County Rosecommon, in 1857; died Sept. 9, 1893. He was educated as a surgeon, received a commission on the medical staff of the British army in 1881, went to Egypt in 1882, and distinguished himself in the campaign, in the cholera epidemic, and in the expedition for the relief of Gen. Gordon. In 1887-'89 he crossed Africa with Henry M. Stanley, and performed an important part in the Emin Pasha relief expedition with skill and courage. He published several works, of which the last was "Guide to Health in Africa" (1893).

**Paulet, Lord William**, English general, born July 7, 1804; died in London, May 9, 1893. He was a son of the thirteenth Marquis of Winchester, was educated at Eton, entered the army in 1821, was promoted at the usual rate of speed, was made equerry of the Duke of Cambridge in 1851, served through the Crimean War, was commander at Scutari in 1855, and after that saw no more active service, but held high appointments at home and was employed in diplomatic capacities. He became colonel of the Durham Light Infantry in 1864, was made a general in 1874, and in 1886 a field marshal.

**Pearson, Emma Maria**, English philanthropist and writer, died in Florence, Italy, in June, 1893. She was the daughter of a naval officer, became a nurse of the Red Cross, and gained a reputation in the Franco-German War by her services in nursing the sick and wounded at Sedan and Orleans. Afterward she engaged in the same work in Serbia and elsewhere. She wrote much for the "St. James Gazette" and other periodicals, and published a book of travels.

**Pettie, John**, British artist, born in Edinburgh, March 17, 1839; died in Hastings, England, Feb. 21, 1893. He learned to paint in Edinburgh under the instruction of Robert Scott Lauder and John Ballantyne, and at the age of nineteen exhibited there a "Scene from the Fortunes of Nigel." At twenty-one he exhibited "The Armorers" at the Royal Academy, and the honor that he got from this picture determined him to establish himself in London. He was elected an associate of the Royal Academy in 1866 and an academician in 1873. Besides historical scenes based largely on Sir Walter Scott's novels, he painted some humorous compositions and many portraits. Among the best known of his works are "Jacobites," "Treason," "Hunted Down," "Juliet and Friar Lawrence," "The Flag of Truce," "Terms to the Besieged," "A Sword-and-Dagger Fight," "The Disgrace of Cardinal Wolsey," "Touchstone and Audrey," "Sanctuary," "The Death Warrant," "A State Secret," "The Vigil," "Interview of the Duke of Monmouth with James II.," "The Defiance," and "Bonnie Prince Charlie." The last two were exhibited at Chicago.

**Pike, Richard**, Arctic navigator, born in Carbonate, Conception Bay, in 1834; died in St. John, Newfoundland, May 4, 1893. He followed the sea from his early youth; first took command of a sealing steamer in 1869; and in 1881 conveyed the Greely expedition to its destination in the "Proteus." In 1883 he took the search expedition of Lieut. Garlington, which ended in failure. In 1891 he landed Lieut. Peary's exploring expedition to McCormack Bay, and in 1892 went north again with the expedition for Peary's relief.

**Place, Charles Philippe**, French prelate, born in Paris, Feb. 14, 1814; died in Rennes, March 5, 1893. He studied law, and took his degree in 1841; afterward entered the French diplomatic service, and soon abandoned this to take holy orders. He was an able

preacher, and in 1878 was made Archbishop of Rennes. He was created a cardinal on June 7, 1886, at the same time as Archbishop Gibbons.

**Potter, George**, English trade-unionist, born in Kenilworth, in 1832; died in London, June 3, 1893. He served his apprenticeship with a carpenter of Coventry; went to London in 1854; became a leader of the trade union, and was the directing spirit in the lock-out of the building trades in 1859. He also headed the workmen who welcomed Garibaldi. As editor of the "Beehive" and the "Industrial Review," and a contributor to various periodicals, he established a high reputation as a writer on social and labor reform and an exponent of the old trade-unionism. He opened the first trade-union congress in London in 1868; was an unsuccessful candidate for Parliament in 1874, and again in 1886; and was a member from 1873 till 1882 of the London School Board.

**Pratt, Anne**, English botanist, born in Strood, near Rochester, in 1806; died July 27, 1893. She published "Flowers and their Associations" at the age of twenty, and, devoting her life to the study of plants, wrote with a deep knowledge and love of nature "The Field, the Garden, and the Woodland," "Wild Flowers," "Catechism of Botany," "Poisonous Plants," "Common Things of the Seashore," and other books, which were illustrated with her own artistic sketches. Her principal work was one on "Flowering Plants and Ferns of Great Britain," illustrated with colored plates, which she revised for re-issue in a popular edition in 1880.

**Pritchard, Charles**, English astronomer, born Feb. 29, 1808; died in Oxford, May 28, 1893. He was graduated at Cambridge in 1830; was chosen a fellow of St. John's College; for many years was head master of Clapham Grammar School; and in 1870 was elected Savilian Professor of Astronomy at Oxford, where he superintended the new observatory. In conjunction with Prof. Pickering, of Harvard, he determined the magnitude of all the stars of the Northern Hemisphere that are visible to the naked eye, and received a medal from the Royal Astronomical Society in 1886 for his discoveries in stellar photometry, and was president of the society for that year. He preached often before Oxford and Cambridge Universities, wrote many astronomical articles in encyclopædias, described his experiments and discoveries in the "Transactions of the Astronomical Society," and published, in 1890, "Occasional Thoughts of an Astronomer on Nature and Revelation."

**Rae, John**, Scottish Arctic explorer, born in the Orkney Islands, in 1813; died in London, July 21, 1893. He studied medicine in Edinburgh, obtained his surgeon's diploma in 1833, was appointed surgeon on a ship of the Hudson Bay Company, began his geographical explorations in 1846 by surveying 700 miles of the northern coast of America, filling the gap between Parry's and Ross's discoveries, went with Sir John Richardson in search of Sir John Franklin in 1848, visiting the coast between the Mackenzie and Coppermine rivers, set out in command of an expedition in 1850 and explored Wollaston Land and the coast east of the Coppermine, with Victoria Land, and undertook a third search expedition in 1853, when he proved King William's Land to be an island, and found evidence that Franklin's ships were lost. Dr. Rae's narratives were not universally believed.

**Romaine, W. G.**, English administrator, born about 1825; died in the beginning of May, 1893. He was a barrister without practice, but with many friends, when the British army departed for the Crimea in 1854, and, being fond of travel and adventure, he obtained the appointment of deputy judge-advocate. There he devoted himself voluntarily to the task of making comfortable and feeding the wounded of both sides. On his return he presented himself as a Liberal candidate in Clapham, but was defeated by a few votes. From 1857 till 1869 he was permanent Secretary of the Admiralty, and then he was appointed Judge-Advocate General of India. In 1876 he went to Egypt as a member of the Conseil du Trésor,



of which he became president, and subsequently, under the joint control, he was the English Comptroller-General till 1879, when he retired.

**Ruchonnet, L.**, Swiss statesman, born in England, in 1835; died in Bern, Sept. 21, 1893. He was the son of Swiss parents, who sent him to Lausanne for his education. Embracing the profession of the law, he distinguished himself at the bar by his eloquence, and became chief of the Radical Democratic party. He passed successively through all elective offices, becoming President of the Council of State in 1878, then a member of the Federal Council, and in 1884 President of the Swiss Confederation. He was the representative of the Canton of Vaud, where he founded important credit and savings institutions, and regulated the waters of Lake Geneva. He was minister successively of Public Instruction, Commerce, and Justice and Police, and was the author of improvements in agricultural education, the management of railroads, and other branches.

**Schaaflhausen**, Prof., German anthropologist, died in Bonn, in February, 1893. He gained a world-wide reputation by his discoveries in the valley of the Rhine, which he thoroughly explored in search of prehistoric remains. He discovered the lake dwellings of Andernach and the famous Neanderthal skull. As professor at Bonn he made one of the completest collections of prehistoric skulls in existence.

**Scheurl, Christoph Gottlieb Adolf** von, German jurist, born in Nuremberg, Jan. 7, 1811; died there, Jan. 24, 1893. He studied and taught in the University of Erlangen, where he became extraordinary professor in 1840, and in 1845 ordinary Professor of Roman and Ecclesiastical Law. As a Deputy in the Bavarian Chamber in 1845-'49 he labored on the reform of criminal law procedure. His best-known works are "Lehrbuch der Institutionen" (1850); "Beiträge zur Bearbeitung des römischen Rechts" (1854-'86); and "Das gemeine deutsche Eherecht" (1882).

**Schmerling, Anton** von, Austrian statesman, born in Vienna, Aug. 23, 1805; died there, May 23, 1893. He studied law in the Vienna University, practiced in the provincial courts, became a councilor of the Court of Appeals in 1846, and in 1848 was sent to Frankfurt to represent his Government in the draughting of a German Constitution. He was chosen President of the Federal Diet, and afterward was elected a member of the German National Assembly. Opposing the Prussian hegemony, he resigned the post of Minister of the Interior at the end of 1848, took his place in the Austrian Imperial Assembly, and returned to Frankfurt as Austrian plenipotentiary. When the King of Prussia was elected German Emperor, in 1849, Schmerling returned to Vienna and became Minister of Justice in the Cabinet of Prince Schwarzenberg. Resigning for political reasons in 1851, he became President of the Court of Cassation. In 1861 he was called to the head of the Government as Minister of State, and endeavored to carry out a policy of constitutional reform and the unification of the empire as a single constitutional state. The Hungarians would not accept his programme of amalgamation, and in July, 1865, he had to retire. He became President of the Supreme Court, was a member of the Bohemian and the Lower Austrian Diets, was appointed a life member of the Upper House in 1867, and after 1879 was the leader of the Opposition to the federal policy of Count Taaffe.

**Schoelcher, Victor**, French statesman, born in Paris, July 21, 1805; died there, Dec. 26, 1893. He was the son of a manufacturer of porcelain to whom the industry is indebted for various improvements. Visiting the United States and Cuba in 1829, he became impressed with the inhumanity of slavery, and wrote several works advocating abolition. In 1848, as under secretary of the Ministry of Marine and the Colonies, he proposed the decree proclaiming the principle of emancipation in all French dominions. He was expelled from France after the *coup d'état*, and afterward from Belgium, took up his residence in England, and did not return to France till after Se-

dan. During the siege of Paris he served as a colonel on the general staff of the National Guard. After the establishment of the republic he was elected a Deputy for the Seine, and in December, 1875, was chosen a Senator.

**Schulz, Albert**, known also under the pen name **San Marte**, German philologist, born in Schwedt, on the Oder, May 18, 1802; died in Magdeburg, June 3, 1893. He studied law and followed a judicial career, devoting his leisure time to the study of old German, French, Celtic, English, and Polish literature. In 1837 a pamphlet criticising official regulations led to his transfer to Bromberg from Magdeburg, and after his return, in 1843, he was appointed to a post in the educational department of the province. He published a translation of "Parcival" (1832); a life of Wolfram von Eschenbach (1836-'42); "Die Arthur-Sage" (1842); "Grosspolens Nationalsagen, Märchen, und Legenden" (1842); "Beiträge zur bretonischen und Keltisch-germanischen Heldensage" (1847); "Die polnische Königsage," "Sagen von Merlin" (1853); also translations of "Gudrun," and other old legends, a treatise on mediæval arms, and a critical account of the old German heroic legends.

**Ségalas, Anaïs**, French poetess, born in Paris, in 1814; died there, Sept. 6, 1893. She was the daughter of an author, and published her first volume of verse when seventeen years old. She married not long afterward a lawyer, but continued to write, and was at one time very popular. Among her poetical works are "Les Algériennes," "Oiseaux de Passage," and "La Faune." She wrote also "Mystères de la Maison," "Magicienne d'Aujourd'hui," and other romances, many stories for children, and the plays "Loge d'Opéra" and "Trembleur," which were produced at the Odéon.

**Shepstone, Sir Theophilus**, South African statesman, born in 1817; died in Durban, Natal, June 24, 1893. He became interpreter of the Kaffir language for the Cape Government at the age of eighteen, served on the staff of Sir Benjamin D'Urban during the Kaffir War, accompanied the military expedition to Natal in 1838, and held various posts afterward under the Natal Government, becoming Secretary for Native Affairs in 1856. In 1873 he went to Zululand to install the King, and in 1874 was called to England to confer with the Colonial Secretary on native affairs. His advice coincided with the imperialistic policy of the Beaconsfield Government, and in 1876 he was selected to conduct negotiations between the Zulus and the Transvaal Republic, which ended in his annexing the Transvaal to the British Empire on April 12, 1877. He retired in 1879, but officiated at the restoration of Cetewayo in Zululand in 1883.

**Smith, Sir William**, English lexicographer, born in 1812; died Oct. 7, 1893. He compiled "Dictionary of Greek and Roman Antiquities," "Dictionary of Greek and Roman Biography and Mythology," and a useful Latin-English lexicon. He was till his death the publisher of the "Quarterly Review."

**Spaventa, Silvio**, Italian patriot, born in the Abruzzi, in 1823; died in Rome, June 20, 1893. He was educated at Montecassino and Naples; became Professor of Philosophy at Montecassino in his twenty-fourth year; returned to Naples in the following year to aid in the revolutionary movement; was compelled to flee to Tuscany; returned when the Constitution was proclaimed; bore a prominent part in the struggle for freedom; was condemned to the galleys, and only liberated in 1859 to be sent with others to South America. The prisoners mutinied, and forced the captain of the ship to set them ashore at Cork, whence Spaventa returned to Italy, where he took part in the war of liberation, and afterward became head of the Department of Jurisprudence.

**Stefan**, Prof., Austrian physicist, born near Klagenfurt, in 1835; died in Vienna, in January, 1893. He studied physics and mathematics, and was appointed Professor Ordinarius of the University of Vienna in 1866. He was distinguished in various branches of physical science. He was a member of the commis-



sion for the study of the physical conditions of the Adriatic Sea, President of the Scientific Committee in the Electrical Exposition, President of the International Conference on the Diapason, and secretary of the section of mathematics and physics in the Austrian Academy of Science.

**Symonds, John Addington**, English critic and historian, born in Bristol, in 1840; died in Rome, Italy, April 19, 1893. He was the son of a physician, who was known as a philosopher; was educated at Harrow and Balliol College, Oxford; won the university prize for an English essay on the Renaissance, and was elected a fellow of Magdalen College, where he plunged into the studies that had first attracted him, and produced an "Introduction to the Study of Dante," and essays on the Italian and Latin writers of the fifteenth and sixteenth centuries. He wrote "Studies of the Greek Poets," several volumes of original and translated poems, besides lives of Shelley and Sidney, translations of Cellini's autobiography and Count Carlo Gozzi's memoirs, "Michelangelo," a volume on "Shakespeare's Predecessors in the English Drama," "Sketches and Studies in Italy," "Italian By-Ways," and a "History of the Renaissance in Italy," supplemented by "The Catholic Reaction."

**Taine, Hippolyte Adolphe**, French philosopher and critic, born in Vouzier, Ardennes, April 21, 1828; died in Paris, March 6, 1893. He distinguished himself as a student in the Collège Bourbon, and entered the Ecole Normale with the ambition to become a



professor, but his thesis on La Fontaine's fables, with which he earned his doctor's degree in 1853, had such a success that he devoted himself to literature. An essay on Livy was crowned by the French Academy in 1854. Then a disciple of Hegel, he attacked the system of Cousin in 1856 in a short work on the French philosophers of the nineteenth century. Attracted by the English philosophers, he became engrossed in the study of English literature, and in 1864 published his "History of English Literature," in which he ingeniously attributes the character of every author and the style of his writings to his social and natural environment. This theory he expounded also in his lectures on the philosophy of art and taste, which he delivered as Professor of the History of Art at the Ecole des Beaux Arts. Bishop Dupanloup denounced his position as atheistic, and for a long time the French Academy was unwilling to admit him on that account. He published two volumes of Italian travels in 1866, and in 1867 a biting satire on French society, entitled "Vie et Opinions de Thomas Graindorge." In 1870 appeared the fruits of his philosophical and psychological reflections in the work "De

l'Intelligence." After the war he lectured on philosophy, and in 1871 went to Oxford to deliver a course on French literature, publishing "Notes sur l'Angleterre" after his return. When his name was presented to the French Academy, in 1874, the shallow and conventional Caro was elected instead by the Conservatives, who not long afterward glorified Taine for the searching criticism which he applied to revolutionary leaders and their actions in his great work on the French revolution, and the succeeding volumes of his still incomplete "Origines de la France Contemporaine." He was elected to the Academy in 1878, and exercised a strong influence in that body.

**Te Kooti**, Maori chief, born on the North Island of New Zealand, about 1830; died there, April 17, 1893. In 1865 he was arrested and exiled to Chatham Island, being suspected of sympathy with the Hau Hau uprising against the British. Escaping two years later, he collected 200 Maoris, who fought the British troops until they were driven into the mountains. In November, 1868, while the troops were suppressing an insurrection elsewhere, Te Kooti and his band descended on the white settlers who occupied their lands at Poverty Bay, and killed 32 of them. A price of £5,000 was put upon his head, but he cunningly evaded every attempt to capture him, and when the feeling of revenge had died out he was pardoned.

**Tirard, Pierre Emmanuel**, French statesman, born in Geneva, Switzerland, Sept. 27, 1827; died in Paris, Nov. 4, 1893. He was the son of French parents, and in 1846 went to Paris, where he followed the business of a watchmaker until he entered into municipal politics, in 1868. In 1871 he was elected a Deputy. He entered the Cabinet as Minister of Agriculture and Commerce in 1879. In 1882 he was Minister of Commerce in the Cabinet of M. de Freycinet, and when Duclerc formed a Cabinet he made Tirard Minister of Finance, a post that he retained in the two succeeding ministries of Fallières and Ferry. In 1883 he became a Senator. On the accession of M. Carnot to the presidency, in 1887, Tirard was called into his first Cabinet as Minister of Finance, and when it was defeated he formed a ministry, taking the portfolio of Commerce. In March, 1890, he went out of office. He wrote several works on politics and finance.

**Tréveneuc, Comte Henri de**, French statesman, born in 1815; died June 10, 1893. He entered the school of St. Cyr when it was open only to the Legitimist aristocracy, to which his family belonged, and with a dozen more was expelled on account of his liberal political principles. The electors of the Côtes du Nord chose him to represent them in 1848 in the Legislative Assembly, where he supported the Government of Gen. Cavaignac. After the proclamation of the empire his opposition to Louis Napoleon led to his incarceration in the prison of Vincennes. When the republic was restored in 1861 he was again elected a Deputy for the Côtes du Nord. He proposed in the National Assembly a famous law which provided that in case the Chambers are illegally dissolved or prevented from meeting, the councils general shall each delegate two of its members to meet and provide provisionally for the administration of the country. He was subsequently elected Senator.

**Troutowsky, Constantin**, Russian painter, died at an advanced age in Moscow, in April, 1893. His *genre* paintings were prized by collectors, and passed from his *atelier* into their hands without appearing at exhibitions. From 1871 till 1881 he was inspector of the School of Painting, Sculpture, and Architecture in Moscow.

**Tschaikowsky, Peter Il'tsh**, Russian composer, born in Wotkinsk, Wiatka, in 1840; died in St. Petersburg, Nov. 7, 1893. His father became director of the Technological Institute in St. Petersburg in 1850, and educated his son for the higher public service in the School of Jurisprudence. When he had completed the course of study, in 1859, he was appointed to a post in the Ministry of Justice. This he relinquished in 1862 in order to enter as a student the newly established Conservatoire of Music, where he learned



harmony and counterpoint under Zarenba and composition under Anton Rubinstein. Taking his diploma in 1865, and a medal for his cantata on Schiller's ode "An die Freude," he was called by Nicholas Rubinstein to the new Conservatory of Moscow, where he was Professor of Harmony, Composition, and the History of Music from 1866 till 1878, after which he devoted himself entirely to composition, living in St. Petersburg, Italy, Switzerland, and Kieff. His music is strikingly Slavonic in spirit and character, reproducing in an elaborate and gorgeous orchestration the melody and rhythm of popular songs and dances and the harmonic sequences of the old Russian Church music. Tchaikowsky died of cholera. His compositions include "Opritehnik," "Vakula," the "Enchantress," and six other operas and ballets, six symphonies, and numerous symphonic poems, concertos, suites, and other orchestral works.

**Uzes, Jacques Marie Gerard de Grasseol, Duc d'**, French explorer, born in Paris, Nov. 19, 1868; died in Cabinda, Portuguese Congo, June 20, 1893. He went to Africa with a well-equipped expedition, which he intended to lead across the continent. Ascending the Congo as far as Brazzaville, he found he could not proceed to the lakes on account of the Arab uprising. Hearing of the troubles of Liotard on the Ubangi, he placed his men and supplies at the disposal of the French authorities, joined the forces of Liotard, helped to chastise the aggressive tribes, and on Feb. 19 set out for the coast, suffering from fever and exhaustion, of which many of his party had died, but he also expired before he could embark.

**Van Rysselberghe, Francois**, Belgian electrician, born in Ghent, Aug. 25, 1846; died in Antwerp, Jan. 7, 1893. He was appointed a professor in the school of navigation at Ostend when scarcely seventeen years old, and taught physics in the industrial school of that place. At nineteen he obtained the diploma of hydrographic engineer, and already his inventive genius manifested itself in a meteorograph and other instruments that were immediately adopted and rendered important services to navigation. His original inventions attracted the notice of men of science, and he was attached to the Royal Observatory at Brussels. Thenceforth he occupied himself solely with electricity. His most famous invention was a system for telephoning to long distances over telegraph wires without interruption of the telegraphic service, which was first applied on Sept. 26, 1884, in the line between Antwerp and Brussels. His last was a hydro-electric system for lighting and distribution of power.

**Vizetelly, Henry Richard**, English publisher, born in London, England, June 30, 1820; died at Tilford, near Farnham, Jan. 1, 1894. He was the first to introduce the works of Edgar Allan Poe to English readers, and was also the original publisher in England of Mrs. Stowe's "Uncle Tom's Cabin." In 1843 he founded the "Pictorial Times," the pioneer journal of the British pictorial press, and afterward he became editor of the "Illustrated Times," in which capacity he opposed the newspaper stamp duty and ventured to publish his paper without the excise stamp (1855). It was largely through his efforts that this tax was abolished. Some years later (1858) he became secretary of the movement for abolition of the duty on paper, which was opposed as a tax on knowledge, and this was finally repealed (1861). In 1867 he published his "Story of the Diamond Necklace, told chiefly by the Aid of Original Letters." This work comprised a sketch of the life of the Countess De La Motte, and reached its third edition in 1880. Prior to the Franco-German War he became a contributor to the "Times" and the "Pall Mall Gazette," and also translated Topin's "Man with the Iron Mask." He was appointed special correspondent of the "Illustrated London News" at Paris in 1866, and held this place for ten years. He experienced all the horrors and privations of the siege of Paris. At the close of the war he turned his attention to the study of wines, and during the next seven years published several monographs on this subject.

He was appointed representative of Great Britain at the Vienna (1873) and Paris (1878) expositions, and acted on the jury for wine exhibits. For his services in Vienna he was created Chevalier of the Order of Francis Josef I, of Austria. In 1879 he published two volumes entitled "Berlin under the New Empire," the result of a prolonged stay in Germany. Subsequently he told the story of the siege of Paris in his work, "Paris in Peril" (2 vols.), and an exhaustive "History of Champagne" followed (1882). On his return from the Continent Mr. Vizetelly resumed publishing, and issued for the first time to English readers the novels of Count Leo Tolstoi, the Russian romanticist, and translations from eminent French authors. He also issued George Augustus Sala's and E. C. Grenville Murray's books, after which came the "Mermaid Series" of unexpurgated best plays by the old dramatists, those of Christopher Marlowe forming the initial volume. In 1883 he boldly ventured to place on the English market the realistic novels of Emile Zola, which he continued to publish uninterruptedly for seven years, when he experienced a systematic persecution that culminated in his imprisonment in Holloway Castle as a first-class misdemeanant. While there incarcerated Mr. Vizetelly began his reminiscences, "Glances back through Seventy Years" (2 vols., 1893), in which he records with a free hand the vicissitudes of his career.

**Wachtel, Theodor**, German tenor singer, born in Hamburg, in 1823; died in Berlin. He began life as a groom. When he was seventeen years old some one connected with the theater who heard him sing persuaded him to take lessons. In a few years he was one of the foremost German opera singers. He came to the United States in 1871, and again in 1875.

**Waldeck-Pyrmont, George Victor**, Prince of, born in Arolsen, Jan. 13, 1831; died in Marienbad, Bohemia, May 12, 1893. His father having died when he was thirteen years old, his mother became Regent. He married, in 1853, a niece of the Duke of Nassau, by whom he had two daughters, one of whom is the Queen Regent of the Netherlands and one the widow of the Duke of Albany, and a son, Friedrich Adolf, who succeeds him. He gave up his substantial sovereign rights to Prussia in 1867, retaining the Crown domains, which Prince Bismarck tried afterward to induce him to relinquish.

**Warnots, Henry**, Belgian singer, born in Saint-Trond, in 1829; died in Brussels, March 12, 1893. He won prizes at the Brussels Conservatory for singing, harmony, and the piano, went upon the lyric stage, and won success in France, not by the strength of his voice, but by the science of his diction and modulation and the warmth of his dramatic interpretations. Returning to Brussels he became first tenor in the Flemish opera, Professor of Singing in the Conservatory, and director of choral societies. In training a chorus he was excelled by none.

**Westwood, John Obadiah**, English entomologist and archaeologist, born in Sheffield, Dec. 22, 1805; died in Oxford, Jan. 2, 1893. He was trained as a solicitor and became a member of a London firm, but gave his mind up to science and literature. Having a high reputation as an entomologist, he was called to Oxford in 1858 to be curator of the collections which he and Hope had made, and in 1861 he was appointed a professor. He was an expert in the archaeology and palaeography of art, and wrote upon the illumination of Irish and Anglo-Saxon manuscripts, ancient illustrations in sacred books, inscriptions on stones in Wales, carved ivories, etc.

**Whipple, G. M.**, English astronomer, born in 1843; died in Richmond, Feb. 8, 1893. He was director of the observatory at Kew, and author of numerous treatises on solar physics.

**Yvon, Adolphe**, French painter, born in Eschwiller, Moselle, in 1817; died in Passy, in September, 1893. He was a pupil of Paul Delaroche, acquired a reputation as a painter of historical subjects and military portraits, was sent by the Government to the Crimea in 1855, and there painted the "Capture of the Mala-



koff Tower," which hangs in the Versailles museum with his "Retreat from Russia." He took the grand medal of honor at the exposition of 1857. Among his portraits those of the Prince Imperial (1861) and Paul Bert (1880) are noteworthy. His "Seven Capital Sins," after Dante, is a famous series of drawings.

**Zigliara, Tommaso**, Italian prelate, born in Bonifacio, Corsica, Oct. 29, 1833; died in Rome, May 10, 1893. He was the son of a fisherman, who showed such intellectual promise that he was educated for the Church, studying in Rome, where he became a naturalized citizen, and entered the Dominican order. He became a distinguished professor of theology, combating traditionalism and ontologism, was consecrated Bishop of Frascati, and on May 12, 1879, was raised to the cardinalate and made Prefect of the Congregation of Studies.

**Zorilla, José**, Spanish poet, born in Valladolid, Feb. 21, 1818; died in Madrid, Jan. 23, 1893. He was intended by his family for a lawyer, and for two years he tormented himself with the ungrateful study; then he quarreled with his father, and went to Madrid in 1837, starved, and wrote verses, gained some reputation by an elegy on the tragic death of the poet Larra, and in 1840 won success and fame with his admirable "Cantos del Trovador." In 1844, after producing several heroic poems and legends, he brought out his tragedy of "Don Juan Tenorio," the greatest dramatic success of modern times. Another drama, "El Zabatero y el Re," has also been extremely popular in Spanish-speaking countries. In his lyric poetry his extravagance of metaphor and sentiment, which mark him as a genuine Spanish poet of the old line, appeals less to the modern reader than the imagination and romantic passion, equally characteristic of the great age of Spanish literature, in his amatory and religious legends and national epics.

**OHIO**, a Central Western State, admitted to the Union in 1803; population, according to last census (1890), 3,666,719, it being the fourth in rank of the States. Capital, Columbus.

**Area.**—There is a discrepancy in the official reports of the area of the State. According to the latest report of the United States Geological Survey, the gross area is 41,060 square miles, of which 40,760 is land surface and 300 water surface. The annual report of the United States Land Office for 1892 gives the area as 39,972 square miles. The report of the Secretary of State of Ohio gives the surface, including Lake Erie to the boundary line, as 42,500 square miles. The chief topographer of the United States Geological Survey says the exact facts can not be obtained, since the position of the State boundaries on the east, west, and south is not known accurately, but the figures given in the Geological Survey's bulletin were determined with considerable care and are probably nearer right than any others.

**Government.**—The government during 1892 was as follows: Governor, William McKinley; Lieutenant-Governor, Andrew L. Harris; Secretary of State, Samuel H. Taylor; Auditor of State, Ebenezer W. Poe; Treasurer of State, William T. Cope; Attorney-General, John K. Richards; Commissioner of Common Schools, Oscar T. Corson; Judges of Supreme Court, Joseph P. Bradbury, Marshall J. Williams, William T. Spear, Jacob F. Burkett, Franklin J. Dickman, Thaddeus A. Minshall; Clerk of Supreme Court, Josiah B. Allen. All the State and Supreme Court officials were Republicans.

**Finances.**—During the fiscal year ending Nov. 15, 1893, the total receipts of the State were \$6,808,569.17. Of this sum, \$6,052,156.54 was

received from all sources during the year, and the remainder (\$756,411.63) was on hand at the close of business hours on Nov. 15, 1892. The total expenditure during the year was \$6,190,229.40. The total receipts of the sinking fund for the year ending Nov. 15, 1893, were \$511,234.98, which, with the balance remaining from the previous year, gives a total credit to that fund of \$995,051.27. The disbursements for the year, including the redemption of \$250,000 of the State funded debt, were \$597,230.89, leaving a balance of \$397,790.38. The total receipts of the State common-school fund for the year ending Nov. 15, 1893, were \$1,723,626.04, which, with the balance remaining in that fund, make a total credit of \$1,761,226.97. The amount distributed to the several counties on the *per capita* basis of \$1.50 for each school youth during the year was \$1,704,808.50, leaving \$56,418.47.

**State Institutions.**—The reports of the managements of the several State benevolent and punitive institutions for the fiscal year ending in November, 1893, show the inmates at the close of the year and the *per capita* cost of each during the year to have been as follow: Ohio Penitentiary, convicts, 1,756; *per capita* cost, \$146.79; earnings for the year, \$295,451.49. Columbus Asylum for the Insane, 1,120 inmates; *per capita* cost, \$154.99. Cleveland Asylum for the Insane, 863 inmates; *per capita* cost, \$155.96. Toledo Asylum for the Insane, 1,182 inmates; *per capita* cost, \$119.63. Athens Asylum for the Insane, 814 inmates; *per capita* cost, \$131.75. Dayton Asylum for the Insane, 788 inmates; *per capita* cost, \$145.81. Longview Asylum for the Insane, 897 inmates; *per capita* cost, \$160.79. Soldiers' and Sailors' Home, 1,101 inmates; *per capita* cost, \$141.25. Soldiers' and Sailors' Orphans' Home, 914 inmates; *per capita* cost, \$157.89. Ohio Institution for the Education of the Deaf and Dumb, 383 inmates; *per capita* cost, \$184.92. Ohio Institution for the Education of the Blind, 248 inmates; *per capita* cost, \$170.63. Ohio Working Home for the Blind, 31 inmates; *per capita* cost, \$151.45. Ohio Institution for Feeble-Minded Youth, 900 inmates; *per capita* cost, \$137.58. Girls' Industrial Home, 341 inmates; *per capita* cost, \$100.90. Boys' Industrial School, 726 inmates; *per capita* cost, \$78.34. The Board of State Charities reported that the total number of persons maintained during the year in State asylums, homes, penitentiary, reformatories, county homes, infirmaries, jails, workhouses, and by out-door relief and soldiers' relief commissions was 149,440, and the total cost \$3,939,139.15.

**Farm Statistics.**—The annual returns to the Secretary of State by the assessors of farm property include the following: Horses, 842,209, valued at \$44,160.679; cattle, \$1,339,569, value, \$22,312,002; sheep, 3,729,542, value, \$9,289,942; hogs, 1,139,551, value, \$5,331,283. Wheat—acres sowed, 2,632,548; bushels produced, 38,381,598; average yield per acre, 14.58 bushels. Corn—acres planted, 2,458,380; bushels produced, 81,892,100; average yield per acre, 33.31 bushels. Oats—acres sowed, 827,823; bushels produced, 22,351,473; average yield per acre, 27 bushels. Potatoes—acres planted, 118,189, yielding 8,839,136 bushels, an average of 74.79 bushels per acre. Tobacco was raised in 55 counties of the State.



The total acreage planted was 46,986, yielding an average of 865 pounds an acre.

**Mining.**—The report of the chief inspector of mines gives the year's product of coal as 14,599,908 tons, a gain of 1,549,721, compared with the preceding year. Ninety-one new mines were opened during the year, 30 remained suspended, and 46 were either worked out or abandoned. At the close of the year there were 892 mines in the State, and of these 832 were in operation.

**The World's Fair.**—The official report of the representation of Ohio at the World's Fair calls attention to the fact that the State had collective exhibits in every department of the exposition, prepared under the auspices and at the expense of the board of managers. Ohio was the only State, excepting Pennsylvania, that had exhibits in every department and section, and was the only State that was represented by an exhibit from every one of its public institutions.

**Legislative Session.**—The adjourned session of the General Assembly began on Jan. 3 and ended on April 27. It passed 374 acts, including the following:

Imposing a collateral inheritance tax.

Requiring certain qualifications of railroad conductors, locomotive engineers, and flagmen.

To provide for the safety of mechanics and others engaged in the work of constructing buildings.

To correct abuses existing in the way of retaining wages under various pretexts from minors.

To provide for a State Board of Arbitration for the settlement of differences between employers and their employees.

To establish a uniform system of keeping time throughout the State of Ohio, making ninetyeth-meridian time the legal time.

To prohibit the docking of horses.

To require railroad corporations to equip and furnish all cars used in their service with air brakes and automatic couplers, and their engines with power brakes.

To provide for cumulative sentences to workhouses.

Providing for return and taxation of gross premium and assessment receipts of foreign insurance companies and associations.

Establishing standard weights of a bushel.

To limit the manufacture of knit and woolen goods in penal, reformatory, and charitable institutions.

To tax the business of trafficking in cigarettes or cigarette wrappers.

To compel elementary education of children.

Amending the law of libel so that the defendant may prove the truth of the matter charged as defamatory.

To provide for the return for taxation purposes of the stock and business of express, telephone, and telegraph companies.

**Political.**—The first of the political conventions was the Republican, held at Columbus, June 7 and 8. The platform adopted by unanimous vote approved and reaffirmed the platform of the national Republican Convention of 1892, commended the administration of Benjamin Harrison as President, and of William McKinley as Governor of Ohio, and the action of the General Assembly of Ohio in passing certain laws. It also declared in favor of "biennial sessions of the General Assembly in obedience to the original purpose of the present Constitution." On national questions it said:

We favor the policy of full and adequate protection to American labor and industries. The best exemplification of the principle of protection and reciprocity

that has found expression in the statutes is the McKinley act. We cordially declare our adhesion to the doctrines of that great measure and favor such amendments thereto for protection as time and experience may show to be advisable.

We condemn the bill passed by the Democratic majority in the House of Representatives of the last Congress and the present avowed policy of the Democratic party to place wool on the free list as an unjust and ruinous attack on all the agricultural industries of the country. We insist on such full and adequate protection for the wool industry as will enable American farmers to supply the wool required for consumption in the United States.

We indorse the policy of the national grange "that all tariff laws shall protect the products of the farm as well as the products of the factory."

We believe in a free ballot and fair count, and we favor such legislation as will secure these results for every voter in the United States.

We adhere to the Republican policy of granting pensions to the wounded and disabled Union soldiers and sailors of the late war and the widows and orphans of such as are deceased, and we condemn the unfriendly and unjust policy already made manifest by the present Democratic Administration.

We favor honest money, composed of gold, silver, and paper, maintained at equal value and under national and not State regulation.

We denounce the avowed purpose of the Democratic party to repeal "the prohibitory 10-per-cent. tax on State bank issues."

The convention renominated all the occupants of the offices to be voted for—William McKinley for Governor, Andrew J. Harris for Lieutenant-Governor, William T. Cope for Treasurer of State, John K. Richards for Attorney-General, Joseph P. Bradbury for Judge of Supreme Court, Frank J. McCulloch for Board of Public Works, and F. B. McNeal for Dairy Commissioner.

The Prohibition Convention was held at Cleveland, June 27 and 28. There was a long and heated discussion of the platform, which as passed included the following:

The liquor traffic must and shall be destroyed. We utterly reject all plans for regulating or compromising with this traffic, whether such plans be called local option, taxation, license, or public control.

No citizen should be denied the right to vote on account of sex.

Tariff should be levied only as a defense against foreign governments which levy tariffs upon or bar out our products from their markets. The residue of means necessary for an economical administration of the Government should be raised by an equitable adjustment of taxes upon the property and incomes of the people.

Railroads, telegraph, and all other natural monopolies should be controlled, or if necessary owned, by the people, so as to fully protect the public from extortion or unjust discrimination.

We stand unequivocally for the American public schools taught in the English language, and are opposed to any appropriation of public money for sectarian schools.

The candidates nominated were: For Governor, Gideon P. Macklin; Lieutenant-Governor, Seth H. Ellis; Treasurer, Abram Ludlow; Attorney-General, S. E. Young; Judge of Supreme Court, J. A. Gallaher; Dairy and Food Commissioner, Seth H. Todd; Member of Board of Public Works, Enos H. Brosius.

The People's Party Convention was held at Columbus, July 4, and the following ticket was placed in nomination: For Governor, John T. Brocken; Lieutenant-Governor, M. B. Cooley;

Treasurer, William H. Taylor; Attorney-General, J. H. Rhodes; Judge of the Supreme Court, C. T. Clark; Member Board of Public Works, Matthew Baber; Food and Dairy Commissioner, Thomas N. Hickman.

The Democratic Convention was held at Cincinnati, Aug. 9 and 10. The platform included the following:

We hereby approve the platform of the Democratic party adopted by the National Convention at Chicago, and especially those portions of it referring to the tariff and to the currency legislation. We congratulate the country upon the early prospects of measures of relief as outlined by the President's late message to Congress, and we have confidence that the Democratic Congress will devise laws to furnish such relief.

The financial situation is the unfortunate legacy of Republican administration. It is the natural result of the McKinley tariff, the Sherman silver law, extravagance of the party lately in power, and the creation and fostering of trusts and corrupt combinations by that party, all combining to shake credit, to create distrust in the money of the country, and to paralyze its business.

We believe in a just and liberal recognition of the claims of the veterans, and favor granting them all that patriotism could ask, all that national gratitude would demand. But the granting of pensions on fraudulent claims for partisan purposes or on department decisions in contravention of law, as practiced under the last Administration, needs to be investigated and corrected.

We condemn the unbusinesslike administration of State affairs under Gov. McKinley.

The following ticket was nominated: For Governor, Lawrence T. Neal; Lieutenant-Governor, William A. Taylor; Judge of Supreme Court, John W. Sater; Treasurer, B. C. Blackburn; Attorney-General, John P. Bailey; Member Board of Public Works, Louis B. Wilhelm; Food and Dairy Commissioner, P. H. M'Keown.

The canvass was carried on almost exclusively on national issues, the identity of the Republican candidate for Governor with the new tariff making the election turn largely on the tariff question. The fact that the Democratic candidate for the same office was credited with writing the tariff plank in the last Democratic national platform still further emphasized that issue. The result was the largest Republican plurality in the State since 1863. The vote for Governor was: McKinley (Republican), 433,342; Neal (Democrat), 352,347; Macklin (Prohibition), 22,406; Bracken (People's), 15,563. McKinley's plurality, 80,995. The other candidates on the Republican ticket were elected by pluralities ranging from 75,043 to 77,794. A Legislature overwhelmingly Republican was also elected, the Senate standing 26 Republicans to 5 Democrats, and the House 85 Republicans to 22 Democrats. Two proposed constitutional amendments were defeated for lack of a constitutional majority. The taxation amendment received 322,422 affirmative and 82,281 negative votes, and the single legislative district amendment 322,877 affirmative and 81,481 negative votes.

**OKLAHOMA**, a Territory of the United States, organized by act of Congress approved May 2, 1890; area (including Greer County, claimed by Texas), 38,719 square miles; population (including Greer County), according to the census of 1890, 61,834. In 1893 the population was estimated by the Governor at 151,213, and that of the Cherokee strip at 100,000. Capital, Guthrie.

**Government.**—The following were the Territorial officers during the year: Governor, Abraham J. Seay, Republican, succeeded in May by William C. Renfrow, Democrat; Secretary, Robert Martin, succeeded in September by Thomas J. Lowe; Treasurer, Samuel Murphy, succeeded in January, 1894, by M. L. Turner; Auditor and Superintendent of Public Instruction, J. H. Parker; Attorney-General, Charles Brown, succeeded in July by Charles A. Galbraith; Chief Justice of the Supreme Court, Edward B. Green, succeeded in September by Frank Dale; Associate Justices, John H. Burford and John G. Clark, succeeded in June by Frank Dale, who was promoted in September to be Chief Justice, and was succeeded by Henry W. Scott. Late in December an act was passed by Congress providing for the appointment of two additional justices, thereby increasing the court to five members; but up to the close of the year, however, no appointment had been made.

**Finances.**—Up to April 1, 1893, Territorial warrants to the amount of \$47,184.89 had been issued, of which \$19,863.59 had been redeemed. At that date the treasury had not received returns from the Territorial tax levied in 1892. There was due the Territory \$34,455.54 from this source, and from insurance licenses \$1,500, making a total prospective revenue of \$35,955.54, with which to meet the warrants outstanding. The Territorial debt, incurred this year for constructing buildings for educational institutions, amounts to \$48,000. The county and municipal debts are heavy, owing to the necessity of extensive public improvements at the first settlement. The county debt is estimated at \$560,660, and the municipal debt at \$229,000. The title to much of the real estate in the Territory is still held by the United States, and it is not taxable. For 1893 the tax rate was fixed at 3 mills for general purposes,  $\frac{1}{2}$  mill for the Normal School, and  $\frac{1}{2}$  mill for the Territorial University.

**Legislative Session.**—The second Territorial Legislature began its session at Guthrie on Jan. 11, and adjourned on March 11. Politically, its members were divided as follow: Council—7 Republicans, 6 Democrats; House—12 Republicans, 10 Democrats, 4 Populists. An organization of the Council was promptly effected by the Democrats voting with and for W. A. McCartney, Republican, as president, and thereby defeating the Republican caucus candidate. In the House there was a long deadlock over the choice of a permanent presiding officer. After 149 ballots had been taken, in which J. M. Stovall, Democrat, generally supported the Republican candidate, the contest was ended by the action of M. L. Stanley, Republican, in casting his vote for T. R. Waggoner, Independent Democrat, giving him, with the aid of Democratic and Populist votes, the requisite majority. The legislative work of the session consisted chiefly in revising and correcting the hastily prepared code of laws enacted by the first Legislature. The Kansas civil code of court procedure was adopted in its entirety. A new revenue law was enacted, containing full provisions for assessment of property and collection of taxes, and for equalization of local assessments by a Territorial board. The annual tax rate for Territorial purposes was limited to 3 mills on the dollar,



with one half mill additional for the erection and support of a normal school and one half mill for the erection and support of a Territorial university. The homestead mortgage exemption and the tax on mortgages were eliminated from the law, and all barriers to the free influx of foreign capital were removed. An independent school-district law was passed, making provision for the issue of school-district bonds. The election law was amended so as to cut off unnecessary expenses attending its operation. A new township-organization law and a new road and bridge law were enacted. The sum of \$15,000 was appropriated to secure an exhibit for the Territory at the World's Columbian Exposition, and \$10,000 was set apart for buying seeds for distribution among needy settlers in the western counties. Arrangements were made to publish the Supreme Court reports, and the fund derived from the sale of these books was devoted to the establishment of a Territorial library. A committee was appointed to compile anew the Territorial statutes.

Other acts of the session were as follow:

To authorize cities, towns, and villages to construct water works.

Adopting the mistletoe as the floral emblem of the Territory.

To provide for the establishment and maintenance of a Territorial library.

Declaring gaming illegal.

Establishing a permanent grand seal for the Territory.

**Education.**—The Legislature this year authorized the issue of Territorial bonds to the amount of \$48,000 for the purpose of raising money to complete and furnish buildings for the higher educational institutions. For the university, at Norman, the issue of \$18,000 in bonds was authorized; for the normal school, at Edmond, \$15,000; and for the Agricultural and Mechanical College, at Stillwater, \$15,000. The university building was completed and opened on Sept. 6, and the normal-school building also was completed before the end of the year. The Agricultural and Mechanical College derives substantial aid from the Federal Government, in addition to the Territorial support. Each of these institutions had about 100 pupils at the close of the year.

**Charities.**—As there is no institution for the insane in the Territory, all patients are maintained at a private institution at Jacksonville, Ill. At the close of the year there were 53 Oklahoma patients in this institution. The cost to the Territory for their support in 1893 was \$9,351, and for transportation \$6,750.

**Prisons.**—At the close of the year 35 Oklahoma convicts were confined at the Kansas Penitentiary at Lansing. The Territory had paid up to Sept. 30 for transportation of these convicts \$1,185, and for their maintenance \$2,275.

**Agriculture.**—The acreage of the various farm products for 1893 is estimated to be as follows: Corn, 284,254 acres; wheat, 222,310 acres; oats, 109,374 acres; cotton, 21,311 acres; sorghum, 18,755 acres; millet, 14,121 acres; broom corn, 4,422 acres; potatoes, 6,890 acres. The total farm acreage was 2,372,482 acres, and the cash value of farms \$13,022,345. The number of horses in the Territory was 35,878; mules, 9,496;

milch cows, 27,145; other cattle, 96,072; sheep, 36,073; swine, 55,310.

**Settlement of the Cherokee Outlet.**—The tract known as the Cherokee Outlet or Strip embraces an area of 9,409 square miles, or nearly half of the whole area opened to settlement in Oklahoma prior to this year. It extends from the part of Oklahoma first settled north to Kansas, east to Arkansas river, and west to Beaver County. In December, 1891, a treaty was made, subject to the approval of Congress, between commissioners of the United States and the Cherokee chieftains, by which this tract was to be purchased and opened for settlement. On Jan. 16, 1893, a bill ratifying this agreement passed the House of Representatives, but in the Senate, where 2 other bills having the same object were pending, amendments were proposed and action was delayed until the last day of the session. Long before this time the people of the Territory and of the neighboring counties in Kansas and Missouri had become impatient at the delay, and, at a convention at Guthrie on Jan. 18, their representatives joined in resolutions urging immediate action by Congress. At that time it was estimated that nearly 20,000 people were temporarily living on the borders of the Outlet awaiting its opening to settlers. The bill authorizing the opening, which finally passed both Houses of Congress on March 3 in the form of a rider to the Indian appropriation bill, modified in many particulars the commissioners' agreement. By its terms, \$295,736 was appropriated to be paid to the Indians at once, and the Secretary of the Interior was authorized to contract with the Indians to pay \$8,300,000 in 5 annual installments, beginning on March 4, 1895, interest to be paid at the rate of 4 per cent. on these deferred payments. It was provided that the acceptance of any of the money appropriated should operate as a ratification by the Cherokee nation of its agreement of December, 1891, as modified by the act and as a complete relinquishment of its title; and that upon the payment of said sum of \$295,736 the tract should become a part of the public domain. The President was authorized, at any time within six months after the acceptance of the act by the Indians, to open the lands for settlement by proclamation. By the same act an appropriation of \$30,600 was made to the Tonkawa Indians for their reservation land, and \$80,000 to the Pawnees for a similar purpose. On May 19 a formal agreement was signed at Washington by the Cherokee chieftains and by the Secretary of the Interior, in which the modifications made by Congress were accepted and the territory ceded to the United States. On Aug. 23 President Cleveland issued his proclamation opening this tract and the Tonkawa and Pawnee reservations to settlement on Sept. 16, at 12 o'clock noon. This announcement was the signal for a rush of intending settlers to the borders of the Outlet. Before the day for opening arrived more than 100,000 people had gathered at points on the north and south boundaries, prepared to enter at the signal and eager to secure possession of the choicest lots. It is estimated that 30,000 people made the race from Arkansas City into the territory, 15,000 from Caldwell, 25,000 from Orlando, 10,000 from Hennessey, 7,000 from

Stillwater, 10,000 from Kiowa, 3,000 from Hunnewell, and from 5,000 to 6,000 from other points. The total number was nearly double the crowd that raced into Oklahoma when it was first opened. The greatest rush was into the eastern portion of the country, which contains by far the most fertile and best watered farming lands.

Seven counties were formed out of this tract by the Secretary of the Interior, and their county seats located before the settlement took place. The letters from K to Q, inclusive, were used to designate these county divisions until the settlers shall select names. After the first wild scenes attending the entry, the work of erecting towns and farmhouses began. A number of thriving villages soon sprang up at the several county seats, among them the villages of Perry, Enid, Alva, and Woodward. Before the end of the year Gov. Renfrow had appointed the various county officials, town officers had been chosen, and the machinery of local government was in full operation.

**Statehood.**—There appears to be some difference of opinion in the Territory as to the manner in which Statehood should be attained, or, in other words, whether the Indian Territory should form with Oklahoma one State, or whether Oklahoma alone should be admitted. On Aug. 8 a convention of representative citizens of Oklahoma met at El Reno for the purpose of considering this problem, at which, after prolonged discussion, a majority of the members declared themselves in favor of a single State for both Territories. A committee was appointed to confer with the governors of the 5 Indian tribes and to arrange, if possible, for a constitutional convention representing both Territories, which should frame a proposed government for the new State. This plan appears not to have been accomplished; but on Sept. 30 an interterritorial Statehood convention met at Purcell, in the Indian Territory, at which delegates from both Territories were present, and at which the following resolution was adopted:

That we favor the passage by Congress of an enabling act empowering a constitutional convention to be called creating a State from the present Territory of Oklahoma and the Indian Territory as provided in the Carey bill.

A memorial to Congress in favor of single Statehood was also adopted as representing the sentiment of the Indian Territory. On Oct. 28 a second interterritorial convention met at Kingfisher, in Oklahoma, at which the Choctaw and Chickasaw nations were represented by delegates. This convention also resolved in favor of a single State. In spite of these public expressions, a considerable number of Oklahoma people are opposed to any union with the Indian Territory whatever, while others prefer to wait until the lands within that Territory have been apportioned and held in severalty.

**The Sooner.**—By the term "sooner" is designated a class of persons who have entered and located claims upon any part of the public domain prior to the time fixed by law for its opening to settlers. At the first settlement of Oklahoma, and at each subsequent opening of reservation lands, those people who sought to

obey the strict letter of the law often found, on rushing over the border and reaching the nearest town site, that the best lots had already been located by "sooners." Much strife and litigation necessarily resulted from this condition. There could be no question, under the statutes authorizing these settlements, that persons wrongfully within the territory to be opened prior to its opening would forfeit all right to acquire title; but the question arose whether persons rightfully within the territory could, after the time for opening had arrived, proceed to locate upon it. This question was brought before the United States Supreme Court in the case of *Smith vs. Townsend*, and decided, on April 3 of this year, against the "sooner's" rights. The plaintiff was a section hand on the Atchison, Topeka and Santa Fé Railroad, whose right of way ran through the country opened on April 22, 1889. Being on that day rightfully upon this right of way, he stepped off after the hour of noon and located a claim on an adjoining tract of land. The Court said:

The evident intent of Congress was by this legislation to put a wall around this entire territory and disqualify from the right to acquire under the homestead laws any tract within its limits every one who was not outside of that wall on April 22. When the hour came the wall was thrown down, and it was a race between all outside for the various tracts they might desire to take to themselves as homesteads.

**Colored Convention.**—In April a Territorial convention representing the colored citizens of the Territory met at Guthrie, and, after a full discussion, organized a Territorial league for mutual protection and advancement. It declared that

The objects of the league are to protest against taxation without representation; to secure a more equitable distribution of school funds in those sections where separate schools exist; to insist upon a fair and impartial trial by a judge and jury of peers in all causes of law wherein we may be a party; to resist by all legal and reasonable means mob and lynch law whereof we are made the victims, and to insist upon the arrest and punishment of all such offenders against our legal rights; to resist the tyrannical usages of all railroad, steamboat, and other corporations, and the violent or unlawful conduct of their employees in all cases where we are concerned.

**The Indian Territory.**—This Territory, which may be admitted to the Union at an early date, either separately or as a part of Oklahoma, contains a population of about 250,000, of whom about 50,000 are members of the Indian tribes. The remaining 200,000 are citizens of the United States who have been invited there by the laws enacted by the tribes. They are tradesmen, mechanics, and farmers, to whom is largely due the progress that the tribes have made in recent years in the development of their resources. The area of the Territory is 30,913 square miles, divided among the five nations, as follows: Choctaws, 10,450; Cherokees, 7,851; Chickasaws, 7,287; Creeks, 4,750; Seminoles, 585.

**ONTARIO. Legislative.**—The Provincial Legislature was opened by Lieut.-Gov. Sir George Airey Kirkpatrick, April 4, in the new Parliament buildings, Toronto, and was closed May 27. Sir George was appointed Lieutenant-Governor in 1892, after the death of Sir Alexander Campbell. The new Lieutenant-Governor



has been prominent in Canadian public life for many years. He entered the Dominion Parliament in 1870, and was a member of that body until appointed to his present office, and was Speaker of the House in 1883-'86. He commanded the Wimbledon Rifle Team in 1876, was a commissioner at the Colonial and Indian Exhibition, London, in 1886, and was knighted in 1893. The following extracts from the Lieutenant-Governor's opening address include its chief points of interest :

It is to me a source of historical interest to remember that I am addressing the Legislative Assembly of this province in the first year of the second century of the existence of representative government in Canada. The progress of events from the first Parliament, opened by Gov. Simcoe, at Niagara, in 1792, to the opening of this Parliament to-day, shows what great strides have been made toward the development of the country and the enlargement of the privileges of citizenship under the Constitution given to us by the Imperial Parliament.

It affords me pleasure to state that the harvest of the past year, while not so abundant as that of 1891, was still a satisfactory one. The general awakening of agriculturists in the province to the importance of the dairy industry and its more extended development is apparent from the increasing number of creameries and cheese factories established during the year.

The salutary effect of the Insurance Corporations' act of last session have already been distinctly seen. A firm administration of the act has excluded from Ontario numerous fraudulent or speculative societies that professed to secure to persons of small means large sums in the form of endowment on life insurance.

The active work of the session was in the direction of modifying existing legislation rather than in passing new enactments. Private legislation comprised about half the work. Druggists, architects, embalmers, and milkmen were refused the special privileges which they sought, and a bill requiring the examination of railway engineers, conductors, and brakemen was withdrawn, owing to the feeling of opposition to it in the Legislature. Charitable organizations, which heretofore have found their sphere of usefulness narrowed by a lack of authority, have been empowered to enforce the acceptance of their benevolent acts.

The agitation for decentralizing the courts led the Legislature to extend to local judges the power to hear arguments on injunction proceedings with the consent of both parties, and judges were also empowered to enforce their orders when acting as arbitrators or in other semi-judicial capacities. Sheriffs were empowered to seize and sell mortgages, and the lien law was so amended as to prevent employers of labor from depriving workmen of their wages. The season for hunting deer was extended five days, and now exists from Oct. 20 to Nov. 15; the number of ducks that may be killed by one sportsman has been increased to 400, and any foreigner who has paid the license fee may now export 50 ducks. The system of minority representation adopted for the city of Toronto has been discredited, both because it had the appearance of securing party advantage and on account of the by-elections.

The question of prohibition was extensively discussed, and attained greater prominence owing to the fact of its being practically adopted

as a plank in the political platform by Sir William R. Meredith and the Conservative Opposition, of which he is the leader. The outcome of the discussion was the final adoption of a resolution that the subject be submitted to the people at the municipal elections in January, 1894.

Not the least important act of the session was the one providing for the establishment of a large national park of 1,466 square miles in the Nipissing district. It is to be at once a sanitarium, a game and fish preserve, and a forest reservation. The acts of the session of greatest general interest not referred to in the above *résumé* are :

To incorporate the Pembroke Southern Railway Company.

To incorporate the Sudbury and Nipissing Railway Company.

To incorporate the Lake Superior and Algoma Colonization Railway Company.

Respecting the Sault Ste. Marie and Hudson's Bay Railway Company.

To extend the time of vesting of estates in heirs and devisees.

To incorporate the Strathroy and Western Counties Railway Company.

For the relief of loan companies incorporated out of Ontario.

Respecting the erection of a lunatic asylum at Brockville.

The following cash bonuses were voted to railways :

To the Irondale, Bancroft and Ottawa Railway Company, \$45,000; to the Kingston, Napanee and Western Railway Company, for extension of the road to iron-ore deposits near the village of Tweed, \$90,000; and to the Central Counties Railway Company, \$96,000.

The following were the most important grants made for the year ending Dec. 31, 1893 :

To defray the expenses of the Executive Council and the Attorney-General's office, \$26,650; to defray the expenses of legislation, \$121,700; to defray the expenses of the Supreme Court of Judicature, \$56,750; to defray the expenses of miscellaneous criminal and civil justice, \$320,334; to defray expenses of public and separate schools, \$242,197; to collegiate institutes and high schools, \$100,000; inspection of normal, high, model, public, and separate schools, \$58,300; normal and model schools, Ottawa and Toronto, \$50,980; superannuated public and high school teachers, \$61,300; maintenance of the insane and repairs to buildings, \$645,577; hospitals and charities, \$64,582; in aid of agriculture, \$176,837; institutions for the deaf and dumb and blind, \$97,936; to defray the expenses of the Crown Lands Department, \$183,909.

To meet these and other sums voted, Parliament granted out of the consolidated revenue fund of the province \$3,651,789.65.

**Finances.**—The total receipts for the year ending Dec. 31, 1892, were \$4,662,921.57, and the total expenditure for the same year was \$4,068,951.68. The revenue of Ontario for the year ending Dec. 31, 1893, was estimated by the Treasurer at \$4,030,572.80, and the expenditure at \$3,559,185.

**Education.**—Objections have been urged against changes made in books used in the schools, notably in the history of England, from which certain passages, claimed to be offensive to Roman Catholics, were eliminated. Similar objections were made against the selected Bible readings issued some time ago by the Depart-

ment of Education for use in the schools of the province. It was claimed that Roman Catholics had their separate schools supported by Government and municipal grants, in which they could prescribe the books to be used and the course of study to be pursued, and that it was manifestly unfair to emasculate history and leave the teachings of the Bible doubtful, to suit the prejudices of those who rarely sent their children to the public schools, and, when they did so, did it to suit their own convenience.

From the last annual report of the Minister of Education, it appears that the number of children of school age in the province was 615,781; the number of those registered in the schools was 491,741: the average attendance of rural pupils was 48 per cent., of towns 61 per cent., and of cities 67 per cent. The number of female teachers was 68 per cent. of the entire number employed—8,280; the number of school-houses, 5,876; and the total sum expended for educational purposes for the year was \$5,189,062. As a rule, the schools throughout the province were kept open the full year; 57 per cent. of the public schools used the authorized Scripture readings, 37 per cent. the Bible, and 93 per cent. of all the schools were opened and closed with prayer. The number of separate schools in the province was 289.

The Minister of Education also reported that during the past ten years (1883 to 1892, inclusive) the mechanics' institutes and free libraries of Ontario issued 6,198,509 volumes of books, and that their total receipts amounted to \$1,039,692.

**Hospitals.**—The Inspector of Prisons and Public Charities, in his last annual report, stated that 29 hospitals received aid from the province, the amount in 1892 being \$99,341.79, or almost \$10,000 more than for the preceding year. The number of patients in the hospitals in 1892 was 11,404, an increase of 881 over 1891, and the daily cost per inmate was 79.31 cents. Two new hospitals were opened during the year—St. Joseph's, in Chatham, and the General Hospital at Stratford.

Of the entire expenditure of the province for 1892, nearly one dollar out of every four was for the maintenance of public institutions for the care of the dependent. In 1891 there were 3,888 patients in the insane asylums of the province, in 1892 4,072, and the *per capita* cost for maintenance for the year was \$135.15. At Mimico buildings were recently erected, where the chronic insane are provided with comfortable homes, and a new asylum is being built at Brockville.

**New Parliament Building.**—In the spring the new building erected for the provincial Parliament in Toronto was completed, at a cost of \$1,250,000. The plan of the building was by R. A. Waite, of Buffalo, and the work of construction was begun in 1886. The architectural design of the building is Romanesque, its principal frontage is 435 feet, with a depth of 260 feet, and the main plan forms a double letter E, inclosing within its walls over 76,000 square feet. The center façade measures 120 by 125 feet, and rises to a height of nearly 120 feet.

**Fisheries.**—Next to agriculture, the fishing industry is the most important of the province. The value of the product for 1892 amounted to \$2,042,198, and for the year before to \$1,806,389.

The most important fish were trout, of which the value for the year was \$633,755; whitefish, \$621,291; herring, \$372,686; pickerel, \$148,671; and coarse fish, \$107,377. During the year 2,790 persons were employed in the fisheries. The increase in the catch over that of the previous year was noticeable in almost every kind of fish taken, but especially in whitefish, salmon trout, and herring.

**Agriculture.**—The value of farm lands in the province is decreasing, notwithstanding the fact that farming operations have been generally rewarded with good crops. The chief cause is the lower prices received for farm produce and the opening up of Manitoba and the Northwest for settlement. The following table gives the area and produce of the principal field crops of Ontario for 1892 and 1893, with the yearly average for the twelve years 1882-'93:

CROPS.	Acres.	Bushels.	Yield per acre.
Fall wheat....	1893..... 913,954	17,545,248	19.2
	1892..... 966,522	20,492,497	21.2
	1882-'93.. 909,078	18,219,174	20.0
Spring wheat..	1893..... 556,721	4,186,063	11.7
	1892..... 651,302	8,290,395	12.7
	1882-'93.. 553,624	5,442,203	15.2
Barley .....	1893..... 467,315	9,806,038	21.0
	1892..... 499,225	12,274,318	24.6
	1882-'93.. 699,916	17,964,493	25.7
Oats .....	1893..... 1,936,644	58,584,529	30.3
	1892..... 1,861,469	64,758,053	34.8
	1882-'93.. 1,702,513	56,954,051	24.6
Rye.....	1893..... 68,486	994,771	14.5
	1892..... 78,073	1,132,504	15.5
	1882-'93.. 98,160	1,579,949	16.1
Peas.....	1893..... 738,741	14,168,955	19.2
	1892..... 774,732	14,494,430	18.7
	1882-'93.. 683,591	13,979,163	20.4
Buckwheat...	1893..... 133,828	2,380,456	17.8
	1892..... 125,104	2,521,214	20.2
	1882-'93.. 79,269	1,586,723	20.0
Beans.....	1893..... 48,858	664,310	13.6
	1892..... 83,249	535,931	16.1
	1882-'93.. 28,676	491,181	17.1
Potatoes.....	1893..... 142,601	12,911,212	90.5
	1892..... 145,703	12,289,817	84.3
	1882-'93.. 152,566	17,800,655	115.9

The value of the various kinds of live stock in the province in 1892 was as follows: Horses, \$55,812,920; cattle, \$45,548,475; sheep, \$8,569,557; hogs, \$5,479,093; poultry, \$2,091,450. The amounts received for the sale of live stock in 1892 were: Horses, \$4,280,132; cattle, \$15,979,135; sheep, \$2,640,190; hogs, \$8,775,852; poultry, \$778,308. The total wool clip for 1892 amounted to 5,643,706 pounds.

In 1892 there were 856 cheese factories operating in Ontario, the product for the year being 93,848,948 pounds, valued at \$8,959,939.

The area in orchard and garden in the province in 1893 was about 195,000 acres, and the yield of fruit for the year less than an average, excepting for grapes and small fruits, which yielded well.

There are in the province about 200,000 bee-hives, and the product of honey for 1892 was estimated at 6,853,770 pounds.

**Timber Sales.**—The sale of timber lands forms the most important source of provincial revenue. The mileage sold in 1892 was 633; the total price realized, \$2,315,000; the average price per mile, \$3.657; and the highest price per mile, \$17,500. The best average price per mile ever obtained before was \$2,859, and the highest



price \$6,300. These sums are paid for a yearly license to cut timber, and the purchasers, in addition to this, pay large sums by way of dues and ground rents.

**Loan and Investment Companies.**—Seventy-six loan, building, and investment companies doing business in Ontario made returns to the Government for 1892. The total capital subscribed for all the companies was \$80,278,277; liabilities to stockholders, \$45,893,742; liabilities to the public, \$77,727,428; total liabilities, \$123,621,170; secured loan assets, \$109,251,079; property assets, \$14,370,091. The loans granted by 54 companies reporting for 1892 amounted to \$19,768,025, and for 1891 to \$16,797,699.

**Manufactures.**—The chief manufacturing industries of Ontario are the making of agricultural implements, railroad rolling stock (including locomotives), cotton factories, woolen factories, tanneries, furniture factories, flax works, ordinary iron and hardware works, paper and pulp factories, and wooden ware. The number of manufacturing establishments in the province in 1893 has been estimated at 35,028, the capital invested at \$182,603,340, the number of men employed at 170,226, the wages paid for the year at \$53,207,710, and the value of the products at \$245,100,267.

**Political.**—Since 1872 the Liberal party has held the reins of power in the Provincial Government without interruption. But Ontario, though ever since then invariably returning a majority of Liberals to the local Parliament, has almost invariably returned a majority of Conservatives to the Dominion Parliament. In Dominion politics it has been generally Conservative, and in provincial politics Liberal. The Opposition in the Parliament of Ontario is led, as it has been for many years past, by Sir William R. Meredith (recently knighted).

**OREGON**, a Pacific coast State, admitted to the Union Feb. 14, 1859; area, 96,030 square miles. The population was 13,294 in 1850; 52,465 in 1860; 90,923 in 1870; 174,768 in 1880; and 313,767 in 1890. Capital, Salem.

**Government.**—The following were the State officers during the year: Governor, Sylvester Pennoyer, Democrat; Secretary of State, Auditor, and Insurance Commissioner, George W. McBride, Republican; Treasurer, Philip Mettschau, Republican; Attorney-General, George E. Chamberlain, Democrat; Superintendent of Public Instruction, E. B. McElroy, Republican; Adjutant-General, R. W. Mitchell, Democrat; Railroad Commissioners, H. B. Compson, I. A. Macrum, James B. Eddy; Pilot Commissioners, John F. Brown, B. F. Packard, and John Fox, Republicans; Chief Justice of the Supreme Court, William P. Lord; Associates, Robert S. Bean and Frank A. Moore, all Republicans.

**Finances.**—The total valuation of taxable property was \$168,088,905. A surplus of \$13,448.32 remained from the tax levy of 1893. The whole amount to be raised for 1894 is \$722,782.29, which amounts to a levy of 4 $\frac{3}{10}$  mills, and gives, with the surplus of 1893, \$736,230.61 for expenses of the coming year. Unexpended balances of the appropriation for 1891-'92 amount to \$47,624.50, of which \$42,478.53 was used for expenses of 1893, leaving \$5,145.97 that may be used for the expenses of this year.

**Mortgage Indebtedness.**—The Government bulletin on statistics of farms and homes gives the indebtedness of Oregon as averaging \$73 per head of population, and the ratio to assessed value as 8.11 per cent. The existing mortgage debt of Oregon Jan. 1, 1890, was \$22,928,437, of which \$15,983,361, or 69.71 per cent., is on acres, and \$6,945,076, or 30.29 per cent., is on lots. Of the 22,553 mortgages in force, 16,250, or 72.05 per cent., are on acres, and 6,303, or 27.95 per cent., are on lots. Mortgages in force cover 2,528,820 acres and 15,360 lots. The average rate of interest on the existing mortgage debt is 9.46 per cent.; on acres, 9.39 per cent.; on lots, 9.59 per cent. There was no legal limit to the rate of interest in Oregon until 1863, when all rates above 12 per cent. became usurious, and since 1880 the highest legal rate of interest was 10 per cent. The debt of over \$61,000,000 incurred in this State during the ten-year period bore 24 different rates of interest, and besides this, \$104,260 was not subject to any interest. The highest rate discovered was 36 per cent.

**Banks.**—From official data, it appears that 16 banks in the State suspended between Jan. 1 and Sept. 1, and none had resumed at the latter date. The Oregon National Bank was reopened soon afterward.

**Militia.**—The Adjutant-General's enrollment of men liable to military duty amounts to 44,444. The United States census of 1890 gives 88,000 in round members as the force of men in Oregon available for military duty. This difference is accounted for by the State exemptions for military duty. The State enrollment includes men from twenty-one to forty-five years of age, while that of the Government includes men from eighteen to forty-five, and allows no exemptions. The organized militia at the close of 1893 amounted to 1,406 men, with 175 officers. There are 3 regiments of infantry, 2 troops of cavalry, 1 battery of artillery, and 1 independent battalion of 2 companies. During the past year the National Guard has been equipped in a more complete manner than in any period of its history.

**State Institutions.**—The whole number of patients in the Insane Asylum at the end of the year was 920, of whom 635 were men and 285 women. The Legislature provided for a branch asylum in eastern Oregon. The bill appropriates \$165,000. A single building is called for by the bill, to be planned with a view to future additions.

The Legislature made provision for the establishment of a soldiers' home. The trustees decided to place it at Roseburg. This was contrary to the letter of the State Constitution, which requires that all public institutions provided for by the Legislative Assembly shall be at the seat of government, and Salem appealed to the courts to have the constitutional provision enforced. An injunction was granted, and an appeal was taken by the trustees to the Supreme Court.

The State Prison had 366 inmates at the close of 1893. The whole number of years of service, aside from life sentences, was 1,352 $\frac{1}{2}$ . Of the convicts, 31 were sentenced for murder. The earnings for the quarter ending June 30 were \$3,093.39, of which \$2,523.04 was for convict

labor furnished the foundry. The expenses for the same period were \$10,652.

An addition was built during the year to the State Reform School at Salem. An industrial building, to be used for shops exclusively, will soon be erected. There were 72 boys in the school at the time of the report.

**Education.**—At the close of the fall term in December the State University at Eugene had enrolled 88 students in the collegiate department and 115 in the preparatory course. J. W. Johnson, who has been president during the seventeen years of the existence of the university, retired in September, taking the chair of Latin, and Charles H. Chapman, from Johns Hopkins University, was inaugurated president.

Portland University received during the year a liberal bequest from James Abraham, to be used for founding and sustaining a school of theology.

The Legislature appropriated \$26,000 for improvements at the State Agricultural College at Corvallis. Of the first year's class of 130, about 100 were young men, and 69 of these were taking the mechanical course. A class of 18, the largest ever graduated, took their diplomas in June.

The total enrollment for the year at the State Normal School, at Monmouth, exclusive of the training department, was 262.

The Indian School, at Chemawa, had an attendance in March of 318, as many as could be accommodated. There are 6 teachers for the common and high school branches, and 15 for industrial teaching. The superintendent said: "The report that we give good board, clean lodging, and three square meals on Sunday is a great drawing card for the youthful Indian, and instead of drumming up pupils we have to turn away many who voluntarily make application to enter the school."

**Railroads.**—The Oregon Pacific was sold, Dec. 15, by the sheriff at Corvallis, for \$200,000, the buyers acting for a joint committee of the bondholders and holders of receivers' certificates. Just before the sale, attorneys representing the Giant Powder Company and the owners of the Willamette Valley and Cascade Mountain Wagon Road Company gave notice to intending purchasers of their claim in the property. On Dec. 26 the sale was set aside by Judge Fullerton, who said that those most interested in the confirmation or rejection of the sale were the labor and supply creditors, and that they seemed to oppose the confirmation.

The Coos Bay, Roseburg and Eastern Railroad had cars running in May to Coquille City from Marshfield and for some distance above Coquille City. Coquille City is 18 miles from Marshfield, and Myrtle Point is 9 miles above the former place. The distance from Myrtle Point to Roseburg is about 60 miles, with the Coast mountains intervening.

**Salmon.**—A dispatch from Astoria of July 26 says: "The total Columbia river salmon pack to date is 195,000 cases, with only thirteen days' more fishing to close the season. An approximate estimate of this year's total pack on the Columbia places the figures at 281,000 cases, inclusive of the catch at the Cascades. This, when compared with the output of the past four-

teen years, is the most startling falling off that has ever occurred in the history of the industry on the coast."

**Sugar Beets.**—The agricultural experiment station furnished to farmers in various parts of the State, in 1891, imported sugar-beet seeds with directions for cultivation. The analysis of the returns from 12 counties gave an average of 14.13 per cent. sugar, of an average purity of 78.08. Beets should contain not less than 12 per cent. sugar, the typical beet weighing about 600 grammes having 14 per cent. sugar and a purity of about 80.

**Wool.**—This year has been especially hard for the wool grower. The record of local sales was down in July and August to about 1,000,000 pounds a week, against a usual 3,000,000 to 4,000,000 for the same period, though the yield was unusually large. The report of the trade at The Dalles for the year, compared with that of 1892, was as follows: In 1892 5,532,000 pounds were received and paid for at an average of 16 cents a pound, making cash received \$865,120; mutton, 130,000 head, at \$2.25 each, \$292,500; wool pelts, at 11½ cents a pound, 6 pounds each, \$41,400; making a total of \$1,219,020.

In 1893 the amount was as follows: Wool received, 5,120,000 pounds, and placed at 7 cents a pound, \$358,750; mutton sheep, at average of \$1.50 each (170,000), \$255,000; wool pelts, 19,000, 6 pounds each, at 4 cents a pound, \$46,080; total receipts, 1893, \$659,830.

**Lumber.**—A report of the Consul-General at Melbourne gives some details of the trade in Pacific coast lumber in Australia:

What is known to the trade as Oregon has become a standard building timber, and the demand for it will keep pace with whatever building or improvement is done in the colonies. This is shown by the importations into the colony of Victoria during the past seven years, the greatest period of building and improvement the colony has ever known. The importations of Oregon, which amounted in 1866 to 31,341,179 superficial feet, rose to 55,487,694 superficial feet in 1888, but has since declined to 12,000,000 superficial feet in 1892, and it is estimated that there are in importers' and trade hands about 12,000,000 superficial feet, which, with from 3,000,000 to 5,000,000 feet afloat, will furnish a full supply for twelve months or more to come, as the normal consumption is not more than that amount per annum.

**The Capitol.**—The State Capitol, which was begun in 1873 on the site of the old State House, which had been burned, is now complete, the Legislature of 1891 having appropriated \$100,000 for the dome. This is of iron and steel, is 54 feet in the clear, and reaches a height of 100 feet from the ridge of the roof. The building is 275 by 136 feet, 3 stories in height, and is of brick and stone. The cost has come within the original estimate of \$500,000.

**Wagon-Road Lands.**—The Supreme Court decided in March, against the California and Oregon Land Company, to set aside and declare void the title of the Land Company to tracts in Oregon purchased by the company from persons acquiring title from grantees under what are known as the wagon-road land grants, under acts of Congress, and the decision of the lower court is affirmed. This is the end of a long series of suits looking to the forfeiture of the several land grants of the different wagon-road



companies. The decision covers nearly 5,000,000 acres of fertile lands in Oregon, affecting the interests of several thousand people.

**Tax Suits.**—Two cases of importance to cities in the State were tried in the circuit court at Astoria in May. The first case was brought by 15 property holders against the city for alleged excessive taxation. The tax list of 1891 was lost or stolen from the city offices, and in consequence of this no tax was collected in that year at all. As a result, the present tax was placed at 17 mills in order to cover the expenses of both years' taxation. Judge McBride held that before the plaintiffs could restrain the city from collecting the taxes assessed against them, they must show an unconditional offer to pay a reasonable sum as taxes. The complaints alleged that the plaintiffs had tendered certain sums, but had demanded receipts in full of their taxes as a condition of payment. The court held that nothing short of an unconditional offer to pay a certain sum was sufficient to give the plaintiffs standing in a court of equity. The demurrers were sustained and the injunctions dissolved.

The other case was brought by 5 residents of Court Street to restrain the chief of police from selling property on delinquent assessments for the improvement of that street. The complainants alleged objections involving the whole system of municipal law. This also was decided against the plaintiffs on the ground that they made no protest while the work was going on, although they knew that the authorities were proceeding, with the understanding that adjacent property would be liable for the expense.

This opinion is of the most vital importance to this city. Had it been in favor of the complainants, the municipality, it is said, would have been beggared.

**Opium Smuggling.**—A widespread conspiracy for smuggling Chinamen and opium into the country was alleged to have been discovered this year. The officials accused were mostly in Washington, but opium smuggling on an extensive scale, as well as bringing in Chinamen, was also charged against residents of Portland. The trial of William Dunbar for the alleged offense was going on in the Federal court at Portland in December. The principal witness against him was a former partner, who pleaded guilty, as did five others who were indicted. In all, more than 20 persons were under indictment in December.

Two additional revenue cutters were ordered to the Washington and Oregon coast.

**The Indians.**—The allotment of lands in severalty to the Indians on the Umatilla reservation has made some change for the better. The allotment was completed and the final report sent in Dec. 11, 1892, and the report was approved April 12, 1893. The total number of Indian men, women, and children who secured allotments was 1,033, not counting the married women.

**The State Grange.**—This organization met at The Dalles in May. Resolutions were adopted favoring the free coinage of silver, the right of women to sign petitions for and against the licensing of saloons, the re-enactment of the mortgage-tax law, the election of United States Senators by a vote of the people, and the open-

ing of Columbia river to free navigation; censuring President Cleveland for disregarding laws made by Congress, and signed by his predecessor, for the deportation of unregistered Chinese; condemning dealing in futures and demanding anti-option laws; advocating the ownership of railroads by the United States Government; in favor of the completion of the Nicaragua Canal with American funds.

**The World's Fair.**—The State had no building at the fair, but a very satisfactory exhibit. The display of fruits was especially fine. The prune-growing industry was well represented. The mineral and forestry and grain exhibits were also very good. The premiums included 17 for fruits, 23 in the department of agriculture, 12 in the fisheries department, 10 in the mining, 2 in the forestry, 4 in the educational, and 2 for a collection of Oregon flora. About \$25,000 was left of the appropriation made for the exhibit by the Legislature.

**Labor Troubles.**—The substitution of Japanese for white workmen on the Southern Pacific at Drain, in March, caused riotous proceedings on the part of the discharged workmen or their sympathizers. The Japanese were stoned while at work, and their houses were bombarded at night. They were removed to Roseburg, and an appeal made to the United States marshal. The section boarding house was covered with oil and set on fire. It was denied that either this or the persecution of the Japanese was the work of the discharged men. The marshal placed deputies at Drain to protect the property of the company. The Governor objected to the action of the marshal, on the ground that the Federal Government has no right to interfere so long as the sheriff is able to maintain peace, unless the United States mail is interfered with.

A demonstration against the Chinese employed in hopyards took place in September near Hubbard. Two hop houses where Chinamen were employed were burned, and 18 men were arrested for making a raid on the Chinamen.

**Storm.**—A heavy storm, on Nov. 25, caused great damage in and about Astoria. At one time the water line of the vessels in port was exactly flush with the level of the docks. Over 40 dikes were so damaged as to be made useless. The large jetty at the mouth of the river also suffered disaster. Large masses of piling, unable to withstand the enormous strain, gave way and were thrown headlong into the ocean, carrying with them over 1,000 feet of the railroad track and making a gap of nearly 1,200 feet in the line of the jetty. The rock work was left intact.

**Legislative Session.**—The Legislature convened Jan. 9, and adjourned Feb. 18. The joint ballot was divided by parties as follows: Republican, 54; Democrat, 28; People's, 4; Citizens'-Democrat, 3; Democrat-People's, 1; total, 90.

The mortgage-tax law was repealed, and the clause providing for deduction of indebtedness from assessments for taxation. This does not exempt mortgage notes from taxation.

Employees of business concerns that fail are protected by a law requiring receivers to issue certificates of indebtedness to employees for wages due.

An act was passed regulating the amount to be paid on a policy of insurance, called the "val-

ued-policy law." This law was protested against by insurance officers, on the grounds shown in the following extract from an opinion given by one of them: "The public good requires that no man should be permitted to profit by burning his property and endangering that of his neighbors at the same time. The Oregon law is similar to others, and its results are not likely to differ from those in Wisconsin and Ohio, where State officers are urging repeal. Fire losses have constantly increased in those States. . . . To inspect every risk is impracticable, for it would take an army of inspectors to do the work. This gives a person an opportunity to misrepresent and overinsure his property, and in 99 cases out of 100 where overinsurance occurs it is due to misstatements made to the companies."

The Pacific Insurance Union gave notice in June that an additional charge of 10 per cent. of the premium should be collected and remitted by agents for Oregon on policies taking effect on and after July 1, 1893, "to cover additional hazard created by the Oregon valued-policy law."

A joint memorial to Congress was adopted, asking for the issue of fractional currency to the amount of \$50,000,000, and one in favor of free coinage of silver.

Eight sections of the Penitentiary laws were repealed by a bill appropriating \$190,000 for establishing a jute-mill plant at the prison, \$40,000 of the appropriation to be expended for jute, together with whatever else remains of the \$190,000 after payment is made for the machinery, freight, buildings, raw materials, and the necessary skilled labor.

The fee system for county officers was abolished, and salaries were fixed for those officers in the various counties instead.

A portion of Clackamas County was detached and joined to Multnomah County, including the city of Sellwood.

A bill to insure purity in foods repeals exist-

ing legislation on the subject and makes it unlawful to sell or expose for sale any unwholesome, unclean, tainted, diseased foods or medicines.

It was enacted that women over the age of twenty-one years who are citizens of the United States and of the State shall be eligible to all educational offices within the State. Many maintain that it is in conflict with that section of the Constitution which provides that "no person shall be elected or appointed to a county office who is not an elector of the county."

An act regulating executions on dormant judgments supersedes the former statute.

The State Board of Charities and Corrections was abolished.

A bill appropriating \$60,000 for a World's Fair exhibit was passed, vetoed by the Governor, and again passed. No buildings were to be erected with it. An appropriation of \$40,000 for the equipment of the State militia took the same course.

The appropriations made a total of \$1,400,000, in round numbers, for the biennial period.

Other acts make the following provisions:

A dower bill amends the existing statutes by giving a widow one half instead of one third of the estate or inheritance; one half instead of one third of the residue from the satisfaction of a mortgage after her husband's death; one half of the rents on the estate she lives on after his death; one half of the mesne earnings of the estate when she has to sue other heirs for it.

It was made unlawful for any person over the age of sixteen years, with or without malice, purposely to point or aim any firearm, either loaded or empty, at or toward another person, except in self-defense, on pain of \$10 to \$500 fine or ten days' to six months' imprisonment, or both.

The road laws were amended so that county courts may in their discretion levy a tax upon all the taxable property in the county not to exceed 5 mills, and in addition a poll tax of \$2.

## P

**PANICS, FINANCIAL, OF THE NINETEENTH CENTURY.** During this century there have been 13 important crises in this country, including the panic of 1893. The direct influences exerted were, in the majority of cases, apparent at the time of the occurrences or were disclosed immediately subsequent thereto. But sometimes there were contributory causes which were not recognized as important until shown to be controlling factors after investigation into the reasons for the abnormally slow growth of confidence succeeding the crises, and then efforts were made to remedy the evil. But even these remedies were not always effective in preventing panics from similar causes. The theory of the periodicity of panics obtains with many writers, and the recurrence of these crises after regular intervals would seem to prove its correctness. As it has been shown by experience that panics are not preventable, measures have been devised to lessen their force. The most effective of these was adopted in the crises of 1873, 1884, 1890, and 1893, by the New York

Clearing House Association. Promptly upon the appearance of the panic, one of the standing committees arranged for the issue of clearing-house loan certificates, based upon 75 per cent. of the assets of all the banks in the association, which certificates were made available in settlement of balances, and were issued to such banks as applied for them, after examination into the condition of the institution. By this plan all the banks were united for mutual protection, and runs upon any one or more of them were unlikely to prove disastrous. The certificates served another and still more useful purpose in the panic of 1893. Foreign bankers desiring to import gold deposited securities with their banks, against which the institutions obtained loan certificates. The banks then loaned to the bankers for fixed periods, at an agreed-upon rate, money with which to procure the gold. The plan of issuing clearing-house loan certificates was successfully adopted in the last panic in Boston, Philadelphia, Pittsburg, and other cities, and doubtless it will become more general.



**Panics from 1800 to 1856.**—At the beginning of the century the principal banking institution was the Bank of the United States, chartered in 1791. The country had been drained of gold through its overvaluation by England, the bank of that country having been in a state of suspension since 1797, and the specie in circulation was chiefly silver, of which the bank held about \$15,000,000. The note circulation at this time was \$10,500,000, and coin \$17,500,000. The bank materially contributed to the prosperity of the country, raising public and private credit from a prostrate to a very high condition. The charter expired in 1811, and on the refusal of Congress to renew it, local banks in large numbers were organized. The embargo of 1808 reduced imports from \$78,856,442 for the year ending Sept. 30, 1807, to \$43,992,586 in the following year, and exports fell to \$9,433,546 from \$48,699,592 in 1807, partly because of nonintercourse, and also in consequence of agricultural depression, and serious commercial troubles followed. In 1809 imports fell to \$38,602,469, while exports rose to \$31,405,702, but during this and the succeeding year specie was heavily exported to adjust foreign balances, the excess of imports over exports for three years ending Sept. 30, 1810, having been \$60,397,837. The currency was redundant, bank notes amounting to \$26,000,000, and on the declaration of war with England the country was involved in all the embarrassments that naturally result from a disordered circulation. The war began in 1812, and the note issues had then increased to about \$35,000,000. In the absence of a national currency, the Government was forced to rely upon the local banks for loans, and these institutions, being unequal to the demands, were, with the exception of those in the New England States, forced to suspend in August, 1814, when the currency had been increased to nearly \$70,000,000, of which \$51,500,000 was paper. Treasury notes were then resorted to by the Government. These were issued in great volume, and, not being convertible into coin, soon began to depreciate, especially toward the Canada frontier, where the war raged and where money was most wanted. These Treasury notes could not legally be used as currency, and they were available only for the procurement of bank paper. After the war imports were largely increased, and exports were \$64,781,896 in 1816, against \$6,782,272 in 1814, the export movement being stimulated by bad crops in Europe. But the adverse foreign trade balance rapidly accumulated, amounting to \$182,695,896 between 1815 and 1819; the war had created a debt which at the end of 1817 was \$103,466,633; during the conflict the note circulation had been increased to \$77,000,000. Speculation had advanced prices of all agricultural products, and economical conditions were such as to precipitate another panic in 1818, and the local banks of the country, except those of New England, again suspended, causing widespread distress. A bill for a national bank with a capital of \$30,000,000 passed Congress in January, 1815, but was vetoed. In 1816 the application was renewed. The capital was then fixed at \$35,000,000, of which \$7,000,000 was to be subscribed by the Government, and the bill became a law April 10, 1816, the institu-

tion being known as the Bank of the United States. After some time spent in making preparations, which included imports of about \$7,000,000 in gold, business was begun, and when the panic of 1818 came the bank was obliged to meet the demands for specie, at the same time reducing its circulation and discounts. The operations of the bank attracted the attention of Congress, and an investigation disclosed violations of the charter in purchasing \$2,000,000 of the public debt and in not requiring full payment of stock in cash. This inquiry brought about a change in the bank's management, and it was then found that nearly \$100,000,000 of circulation had been issued by the institution and its branches. The change in the administration of the bank was followed by salutary reforms. The panic had been very severe, extending, according to the report of a committee of the House of Representatives, from the largest to the smallest capitalists and affecting every branch of business. After the panic there was a slow recovery, during which new banks were organized all over the country. In New York institutions with an aggregate of over \$50,000,000 capital were formed; new industrial and other corporations were founded the stock of which was largely oversubscribed for, and money became very plentiful. The bank mania was at its height when, in July, 1825, there came a commercial crisis caused by wild speculation in cotton, which had a depressing effect upon manufactures of that staple, and the trouble was intensified by the expansion of bank notes. In the following year there was a recovery, and no further disturbance occurred until 1828, when an excessive issue of paper money and drafts by the Bank of the United States and its branches indirectly affected the local banks and brought about a minor crisis. Then money again became abundant, and the country was apparently prosperous until November, 1831, when there was another minor crisis, resulting in monetary stringency, which was relieved by the issue of draughts by the Bank of the United States. This action of the bank, however, was severely criticised by President Jackson, and in 1832 the Secretary of the Treasury notified the managers that the Government intended, wherever it had representatives, to redeem half of the 3-per-cent. stocks in cash. The bank officials requested a delay of three months, which was granted, and the bank then began to foster land and other speculations, and at the same time made application for a renewal of its charter, which would expire in 1836. Congress complied, but the President refused to sign the bill, and in 1833 he ordered the withdrawal of the Government deposits from the bank, and they were so withdrawn after considerable opposition and delay. The business of the country was exceedingly prosperous, thus increasing the requirements for money, and the threatened liquidation of loans by the national bank in order to comply with the orders for the withdrawal of Government deposits was viewed with apprehension. The national revenues had increased so rapidly that \$28,101,645 was, by authority of an act passed June 23, 1836, distributed among the several States in proportion to the population; the public debt had been reduced to \$33,733 at

the beginning of 1835, and it was only \$37,513 on Jan. 1, 1836, against \$127,334,934 on the same date in 1816, which was the maximum. This generally prosperous condition fostered wild speculation in lands, mines, canals, and railroads, construction of the latter being 1,273 miles in 1836, against 23 miles in 1830; capital came in large amounts from England for investment, and the Bank of England, in order to check this movement, advanced its discount rate. This aided in precipitating the crisis of 1837. The conviction that a new national bank to take the place of the United States Bank would not be chartered led to the creation of local institutions with an aggregate capital of \$125,000,000, and there was a liberal issue of notes. Imports increased from \$103,208,521 in 1834 to \$168,238,675 in 1836, and the adverse trade balance that year was \$61,316,995. The advance in the Bank of England rate therefore had a startling effect. Banks generally suspended payment, notes fell as low as 20 per cent. discount, exchange on London and Paris rose sharply, gold and silver were hoarded, cotton was almost unsalable, failures were numerous and important, distress prevailed everywhere, and the panic was at its height in April, when the New York banks began to suspend payment. They soon resumed, but resumption was not general because of the suspension of the Bank of the United States, and it was not until the following year that specie payments were resumed in New York. After the panic there was a gigantic speculation in cotton, encouraged by the operations of Mr. Nicholas Biddle, of the Bank of the United States, who co-operated with foreign capitalists and advanced money to planters upon their crops, thus causing the investment of vast sums of money, reported as between \$150,000,000 and \$200,000,000. Then came a short crop of only 400,000 bales, one fifth less than was expected, and an advance in the price was looked for, but in vain. Europeans became alarmed and withdrew from their speculative ventures, and then followed the panic of 1839, which resulted in the complete liquidation of the Bank of the United States. The monetary stringency here caused a rise in interest rates to 20 per cent., and discounts for the best paper advanced to 15 and 25 per cent. The acute stage of the panic soon passed. The failures from 1837 to 1839 were 33,000, involving \$440,000,000, and 55 banks with a capital of \$67,036,265 suspended.

**Panic of 1857.**—The panic of this year found the country in an exceedingly prosperous condition. Railway extensions had been checked to some extent, and a more conservative feeling prevailed regarding these enterprises. There were no indications of the coming crisis, and a contraction of loans by the New York banks early in August attracted little attention, although one reason assigned therefor was that the failure of a heavy produce house revealed the fact that this line of business was not particularly good. Four years before, a law went into effect requiring every bank in the city to make weekly statements of its average condition as to loans, specie, circulation, and deposits, and this salutary law not only operated as a check upon reckless banking, but, aided by the operations of the New York Clearing House Associa-

tion, which was organized in October of that year, it kept the business public informed of the condition of the institutions, and tended to inspire confidence in them. The loans of Aug. 8 were reported at the then unprecedented amount of \$122,077,262. By the 15th they had been reduced to \$121,241,472, and in the interval there had been news of a defalcation in one of the leading railroad companies, which caused a slight flurry in the stock market. On Aug. 24 the announcement of the suspension of the Ohio Life and Trust Company had a startling effect in New York. It was not a bank of issue, neither was it a discounting house of bills, but it was a large borrower from other institutions, and its affairs were supposed to be conducted on the conservative plan of trust companies. The bankers and exchange dealers of Ohio and elsewhere extensively bought its draughts for remittance, and there was not a bank in New York with Western connections that had not these draughts sent in payment for collections or for deposit to be drawn against by remitters. The consequences of the failure were therefore widely distributed among the New York banks, several of which were large lenders to the company. The concern had borrowed also of individual bankers, exchange dealers, and stock houses, hypothecating not only its own collaterals, but the property of its dealers. The panic that followed the news of the failure was intensified by the disclosure that the entire capital of \$2,000,000 had been virtually embezzled. This induced the bank managers in New York promptly to adopt measures for self-protection; loans were called, and the panic spread rapidly. Money on call, and even on undoubted collateral, rose rapidly to from 3 to 5 per cent. a month, and on ordinary security and on mercantile paper money could not be obtained at any rate. By Sept. 5 the loans of the city banks had been reduced to \$112,221,365, nearly \$10,000,000 less than on Aug. 5, while the deposits had been drawn down an equal amount. The panic had then become general. The purchase and transportation of produce practically ceased; the failure of the Bank of Pennsylvania in Philadelphia was followed by that of other banks in that city, and by those in Baltimore and of other Southern Atlantic cities, and commercial business everywhere was suspended. On Oct. 14 the banks of New York suspended specie payments, and the acute stage of the panic was then reached. The banks resumed Dec. 11, and the abundant crops materially aided in a general recovery. After the New York banks suspended specie payments there was a unanimous agreement that they would receive and pay out notes as usual, and also would receive at par notes of all the banks of the State secured in the bank department at Albany, and likewise the notes of certain safety-fund banks. One effect of the panic was to reduce the Government's revenues below expenditures, and the report of the fiscal year showed \$68,969,212 receipts and \$71,274,587 expenses.

The news of the crisis here reached London toward the end of October, and on the 27th the Borough Bank of Liverpool, and on Nov. 9 the Western Bank of Scotland, were forced into liquidation, as it was known that they were largely involved in transactions in New York.



The bullion in the Bank of England was reduced to £6,484,095, and the minimum rate of discount was advanced to 10 per cent.

**1858 to 1867.**—After the panic of 1857 the recovery was comparatively rapid, aided by abundant crops. The public debt was increased by the issue of Treasury notes in 1857 from \$28,699,832 in that year to \$64,842,288 on Jan. 1, 1860. The largest amount of these notes outstanding at any time was \$52,778,900. In 1858 a 5-per-cent. fifteen-year loan amounting to \$20,000,000 was issued. In 1859 political movements indicated that the tension between the two great parties in the country was growing more severe, threatening speedy rupture. The presidential election of 1860 was the most exciting ever known in the country, and the choice of Mr. Lincoln was regarded in financial circles as almost certain to result in violent rupture of the Union. The outbreak of the civil war, in April, 1861, precipitated a panic in stocks, and, indeed, in every security in the country, and at the same time it had a paralyzing effect upon all business. The number of stocks then actively dealt in on the exchange was about 37, and the number of members fewer than 250. Speculative interest centered upon only a few of these stocks, notably Harlem, Erie, Lackawanna, Michigan Southern, Delaware and Hudson, Fort Wayne, Illinois Central, and Ohio and Mississippi. There were occasional wide fluctuations in some of these, and one feature was the Harlem corner, which culminated in June, 1864, when the price was forced to 285. The rapid increase in the public debt from \$58,496,838 on Jan. 1, 1860, to \$524,176,412 on the same date in 1862, and the expected authorization of an issue of \$150,000,000 demand notes, in addition to the \$50,000,000 authorized by the act of July 17, 1861, brought about a general suspension of specie payments, and speculation in gold began early in January, 1862. The movements in it thereafter during the war were influenced by the varying fortunes of the armies, by the increase in the public debt, and by the issues of paper currency by the Government. There were minor crises following important battles that resulted adversely to the national forces, and sharp declines succeeding victories; and even after the war was ended the speculation continued, at times assuming large proportions, affecting important interests, and embarrassing the Government. In April, 1864, the price of gold in currency advanced to 171, and Secretary Salmon P. Chase, regarding the advance as part of a conspiracy to depress the credit of the Government, asked Hon. Reverdy Johnson, chairman of the Senate Finance Committee, to introduce a bill prohibiting speculation in gold. A measure having this object in view passed the Senate April 16 and the House June 14, and it was signed by President Lincoln June 17. It forbade the making of contracts for future deliveries of gold, or upon any other terms than the actual delivery of the metal, imposed severe penalties for violation of the law, and declared void all contracts made contrary to the act. While the bill was pending gold continued to advance, touching 190 in May and 197½ June 16. The dealings in the metal up to this time were in the offices of the bullion dealers. Transactions then ceased there, but trading was conducted upon the street, and by the end of

June the price had reached 250. This continued advance deranged all business operations based upon gold throughout the country, and members of Congress were petitioned to repeal the gold bill. On June 22 Senator Reverdy Johnson introduced a bill to repeal the act. On July 1 he obtained unanimous consent for its consideration, asserting that the universal impression was that the prohibitory law was doing nothing but mischief; a vote was taken without debate, the bill passed the Senate, was sent to and concurred in by the House, and was signed by the President July 2. Then, speculation in gold again being free, trading was resumed. The price advanced July 11 to 285—the highest on record—influenced by the issue of new loans and by manipulation. On the surrender of Gen. Lee there was a sharp fall of 9 points, followed by a rapid rise on the news of the assassination of President Lincoln. Soon after the war the speculation in stocks became an important feature, stimulated by liberal additions to the list, by the inflation of the currency, and by the distribution of enormous stock dividends, and the tone was generally buoyant.

**1868 to 1872.**—In 1868 the list of active stocks embraced 108 issues. In that year the operations of Messrs. Jay Gould, James Fisk, Daniel Drew, Cornelius Vanderbilt, and Henry Keep exerted an important influence upon the speculation, and Erie stock began to be enormously increased, causing wide fluctuations. There were corners in Erie, in Chicago and Northwestern, and in Milwaukee and St. Paul. The most important event of 1869 was the Black Friday panic of Sept. 24, which resulted from an attempt by Jay Gould to corner gold, which rose to 162½, and then rapidly fell to 133 because of sales of the metal by the Government. Clearings at the Gold Exchange bank were made impossible, a receiver was appointed, and failures of stock houses occurred because of the stringency in money and the consequent derangement of business on the exchanges. The panic was brief, but it left the market feverish, and its influences were felt in the ensuing year when the speculation was comparatively quiet. The Chicago fire panic of Oct. 9, 1871, which resulted in a loss of \$150,000,000, caused a general decline in stocks and the suspension of several insurance companies. The Boston fire panic, Nov. 10, 1872, had a brief unsettling effect, as also did the Northwest corner Nov. 23, when the price of the stock was advanced to 230. The most sensational event of the year was the arrest of Messrs. Gould and Smith in the Erie suit, and the restitution by Mr. Gould of about \$9,000,000, claimed by the stockholders. The market was in a state of tension at the end of 1872, and speculators looked to the Treasury Department for relief, expecting that some portion of the \$44,000,000 legal-tender notes in the department would be reissued.

**Panic of 1873.**—In January the most important event was the formation of a syndicate to negotiate the remaining 5-per-cent. United States bonds. Manipulation of money in the following month, which forced the rate to the equivalent of 96 per cent. per annum, temporarily disturbed the markets, and this manipulation was renewed in April, when a rate equal to

276 per cent. per annum was recorded, causing failures of stock houses and a panicky market. In June there was an increase of about \$10,000,000 in bank reserves, which contributed to easier money, but in August loanable funds grew active again, and there was a partial corner in gold, which was broken by Government sales of about \$6,000,000. The great panic in September was precipitated by the suspension of the Warehouse and Security company, which had loaned money to a construction company engaged in building the Missouri, Kansas and Texas Railway, the Warehouse and Security company taking bonds of the road, which they were unable to sell because of the derangements in the money market. This was followed by a general shock accompanied by a rapid decline in stocks, which was accelerated by vigorous bearish demonstrations. Then came the suspension of Kenyon, Cox & Co., of which Mr. Daniel Drew was a special partner, and then followed the failure of Jay Cooke & Co., which brought about a general crash. On the 20th the Union Trust Company, of New York, suspended, partly in consequence of the announcement of a defalcation of \$400,000 by the cashier, but mainly because of the inability of the Lake Shore and Michigan Southern to pay a loan of \$1,750,000, and also the refusal of Assistant-Treasurer Thomas Hillhouse to buy \$1,000,000 Government bonds which were offered by the Trust Company two hours before the time named in his instructions for the purchase of bonds. Then followed the failure of the National Bank of the Commonwealth, and the excitement was so intense that the solvency of nearly every bank in the city began to be doubted. Bank officials suggested that under the circumstances, it would be well to close the Stock Exchange, and the governors of that institution thereupon decided to suspend the business. On the following day President Grant and the Secretary of the Treasury came to New York and conferred with business men, who asked that the Treasury transfer money to the banks and issue \$20,000,000 of the \$44,000,000 legal-tender reserve. This request was refused, and the only relief the Treasury was willing to give was through the purchase of bonds and the payment of legal tenders therefor; but this measure was ineffective because the banks had no bonds to sell. The savings banks, however, took advantage of the offer, and at the same time gave the customary notice to depositors intending to withdraw their money. The bank clearing house promptly made arrangements for an issue of loan certificates against 75 per cent. of assets of all the banks in the association, such certificates being applicable only for the settlement of bank balances, and eventually \$22,410,000 of these certificates were issued. The banks declined to pay legal tenders for checks, and sought to obtain these notes by collecting bonds from various sources for sale to the Government; but the Treasury soon after decided to suspend purchases of bonds, claiming that the currency balance was low and that there was no authority for encroaching upon the \$44,000,000 reserve. This decision served to intensify the gravity of the situation; legal-tender notes commanded a premium of from 2 to 3 per cent., the domestic and foreign exchanges were thrown

into confusion, and business generally was prostrated. The Stock Exchange reopened on the 30th, and the excitement then partially subsided, but the markets were feverish until the close of October, when there was a better feeling, aided by the receipt of about \$9,000,000 gold from Europe.

The crisis of 1873 broke up a large number of speculative combinations and discouraged non-professional operations. The passage by Wisconsin and other States of Granger laws had a disturbing influence, particularly as on appeals to the State courts the cases were decided against the railroads. Decreased earnings resulting from the depression in business, the freight war between the trunk lines, receiverships for the Erie and the Wabash, and other influences contributed to depress prices of stocks, and in many cases lower figures were recorded than during the panic of the previous year. Early in 1875 Mr. Jay Gould obtained control of the Union Pacific, and gradually the market improved toward the close of the year. In 1876 an unfavorable effect was produced by another trunk-line freight war, which continued throughout the greater part of the year, and by the collapse of the anthracite-coal combination, and depression prevailed until about the middle of 1877. There was no panic, but a general shrinkage of values. Commodore Vanderbilt died in January, and in March the trunk-line agreement of Dec. 16, 1876, which settled the principle of one rate to the seaboard, for which he had so vigorously contended, was abandoned and the strife was renewed. The Central New Jersey was placed in the hands of a receiver in February, the Reading had to obtain extensions, and the Lackawanna and the Delaware and Hudson were compelled to issue new mortgages. Railroad earnings showed a steady decrease, and the bears pushed their advantage to the utmost. In June the trunk lines made a new agreement on freight rates; reports of an abundant harvest were received in July; the telegraph consolidation was completed in August, and there was then a strong combination operating to advance stocks, and the rise was only temporarily checked by the serious labor strikes.

**1879 to 1883.**—Specie payments were resumed January 1, 1879, the Treasury having accumulated for the purpose \$129,485,563. An arrangement was made by which all draughts on the Treasury held by the New York Clearing-House banks, and those held by the Treasury on the banks, were paid in United States notes, thus aiding in establishing confidence in the ability of the Treasury to maintain specie payments with \$346,681,016 United States notes outstanding. Resumption was a complete success, and this fact tended to revive speculation in stocks. The winter of 1880-'81 was very severe, and the Northwest railroad traffic was obstructed until May. Then came a partial failure of the crops and a great drought in the West. Business on the Stock Exchange was unprecedentedly large during the first half of the year, and speculation was stimulated by consolidations and increases of capital stocks and bonds, and by the operations of bull combinations. President Garfield was shot July 2, 1881. Then followed a panicky decline in values, and the market was feverish



while he lingered. One feature in 1882 was the panic in Paris, resulting from the collapse of the Union Générale and of other similar concerns. This crisis caused an advance in the Bank of England rate of discount to 6 per cent. and started a drain of gold from New York, which continued until August. The requirements of the English Government for military operations in Egypt in July brought the Bank of England reserve down to £9,712,012 by Nov. 8, and a 5-per-cent. discount rate was maintained from Sept. 20 to the end of the year. Foreign bankers were under engagement to supply Italy with gold at the time and after the crisis in Paris, and they arranged to procure part of the gold from New York, materially contributing to the large shipments hence during the summer. In 1883 the market began very sensibly to feel the effect of the construction of many new railroads and of the consolidations and combinations during the previous two years, and the floating of vast amounts of new stocks and bonds upon which dividends or interest could not be earned. The public held the mass of these securities, but they did not realize their danger until after September, 1882, and many were lulled into security by the phenomenally large railroad earnings in the winter of 1882-'83.

**Panic of 1884.**—The panic of 1884 began on May 5, when the Marine National Bank suspended in consequence of the speculations of its president, James D. Fish, with the house of Grant & Ward, which for months had been carrying on a series of operations upon a fictitious basis, but which, it is claimed, were conducted solely by Ferdinand Ward without the knowledge of his partner. The markets were recovering from the shock of the bank failure and the disclosures regarding this firm, when there came news of the defalcation of John C. Eno, President of the Second National Bank, involving about \$4,000,000. These events created a very distrustful feeling, and from the fact that Mr. George I. Sency, President of the Metropolitan National Bank, was understood to be an extensive operator in stocks, deposits in that institution were withdrawn, precipitating its failure, on the 14th, together with that of Nelson Robinson & Company and six other brokerage firms. As an indirect result of the panic, the Erie defaulted upon its interest. The financial depression that followed the crisis lasted until the end of June, when a recovery began, and before the middle of July the immediate effects of the panic had disappeared, the banks of the city became stronger, and confidence was partially restored. This trouble was in no sense a commercial crisis. The coinage of standard dollars under the act of Feb. 28, 1878, had resulted in the accumulation at the end of January of \$123,474,748, and the certificates then in circulation against these dollars amounted to \$110,137,051, making the currency redundant. Then followed as another disturbing factor the decision of the United States Supreme Court in the Juilliard legal-tender case, finally settling the constitutionality of legal-tender paper money, which decision served to call the attention of the public to the fact that, as said by the "Financial Chronicle," "all reliance upon any constitutional inhibition to do anything whatever with

the currency which Congress may have a whim to do must be abandoned henceforth and forever." Early in April the House of Representatives passed the bill providing for the redemption of the trade dollar. A sharp fall in grain and provisions in March was followed by bank failures and suspensions of private banking firms in the West, the former being mainly due to speculations by managers of the institutions, but the decline in grain did not encourage the export movement; gold continued to move to Europe in moderately large amounts, and the net shipments for the year up to the end of April were about \$31,750,000. On the announcement of the suspension of the Metropolitan National Bank the Clearing House Association decided to issue loan certificates under regulations similar to those adopted in 1873, and the first issue was \$3,820,000 to the Metropolitan Bank on May 15 and the last June 6, when there were outstanding \$18,640,000 out of the total of \$24,915,000. The decline in stocks which followed the panic continued until the end of June. The grain crops of the year were abundant. The yield of wheat was estimated by the Bureau of Agriculture at 512,763,900 bushels against 420,154,500 in 1883, while that of corn was placed at 1,795,000,000 bushels, an increase of 244,461,537 over 1883, and the cotton crop indicated 5,900,000 bales, or 200,000 more than that of the previous year. But these large crops brought a shrinkage in prices, and in London wheat fell to the unprecedented figure of 31s. 6d. a quarter. The panic of 1884 may be regarded as an incident following the decline in stock values from the culminating point in July, 1881, and the crisis was precipitated by the exposure of financial frauds of almost unprecedented magnitude.

**1885 to 1889.**—Little progress was made in 1885 toward substantial recovery until June, when the negotiations for the settlement of the West Shore troubles began to be felt, and prices improved. On the announcement in August of the sale of the South Pennsylvania to the Pennsylvania Railroad Company, and of the foreclosure of the West Shore and its lease to the New York Central, the market advanced, and the rise was stimulated by the formation of a pool among the trunk lines for the maintenance of rates. In 1886 the market was dull and irregular, tending downward until the middle of May, influenced by labor strikes on the Missouri Pacific and other roads in the Southwest, in Chicago, Milwaukee, and New York, and the anarchist outrages in Chicago, May 4. Leading staple products were very low, imports largely exceeded exports, and gold flowed to Europe at the rate of about \$5,000,000 a month. The year 1887 opened with depression, influenced by the coal-handlers' strike, followed by that of the freight handlers in this city. The Interstate-Commerce bill and European war rumors had some effect, and the market was generally lower until the end of February. The Interstate-commerce law went into effect April 5, but the operation of the long- and short-haul clause was suspended for ninety days, and the tendency of the market was upward until June 14, when there came a collapse of the corner in coffee, followed on the next day by that of the

wheat corner in Chicago, which resulted in the failure of the Fidelity National Bank of Cincinnati. There was a fall of 41 per cent. in Manhattan Elevated, Mr. Cyrus W. Field being compelled to sell 50,000 shares to Mr. Gould. The market was thrown into a partial panic June 24, and it was very sensitive when the announcement was made of the failure of Henry S. Ives to perfect his deal in the Baltimore and Ohio. The boldness of this operation and the disclosures of the weakness of this railroad corporation exerted a very depressing influence. Late in August, Grovesteen and Pell, bankers of the Rome and Decatur, failed under circumstances that called for a close scrutiny of collaterals by money lenders.

At the opening of 1888 the strike on the Reading was a disturbing factor, and the market was very dull until March, when the strike of engineers on the Chicago, Burlington and Quincy sharply depressed prices, and then came the extraordinary blizzard, March 12, which caused a suspension of business for three days and great loss to the railroads. The first improvement in the market came after the announcement by the Secretary of the Treasury, April 17, that he would begin to purchase bonds daily on the 23d, but the advancing tendency was checked by the middle of May, and then followed a decline caused by the reduction in the Chicago, Burlington and Quincy dividend and the loss of earnings by the Atchison, Topeka and Santa Fé.

The most important event in 1889 was the formation, in January, of the Interstate Railway Association, for the maintenance of rates on the Western and on the trunk lines. This had a good effect until it was counteracted by the unfavorable financial situation of the Atchison, Topeka and Santa Fé. The plan of reorganization of that road was announced in October. It proved to be one of the most successful schemes ever presented, and it was virtually perfected before the end of the year.

**1890.**—The market grew strong after the money pressure relaxed early in this year, but there was a check to the improvement after the 10th, when it was announced that no interest would be paid on any of the Reading income bonds. This led to selling of these securities for European account, and the market was further unsettled later in the month by an attempt to wreck the Sixth National Bank, which resulted in the failure of 2 small institutions. A steady decline in the surplus of the city banks, the passing of the dividend on Chicago and Illinois, and a sharp fall in Tennessee Coal and Iron from 86 to 51 contributed to keep the market feverish in February, but in March the tendency was strongly upward.

In the middle of June the market began to be affected by exports of gold and by the switchmen's strike at Cleveland. The passage of the Silver-Purchase bill, which was signed July 14, had no immediate effect, and the market was unfavorably influenced by the advance in discounts in London, caused by the crisis in Buenos Ayres and by liberal selling of stocks for European account, which was the chief disturbing factor for the remainder of the summer and in the autumn. The Baring crisis, Nov. 15, affected

every financial center in the world. The house of Baring Bros., of London, had by 1889 become heavily committed to financial enterprises in the Argentine Republic and in Uruguay, and when the embarrassments of Argentine grew acute, about the middle of 1889, the fall in the securities of that country became rapid, and gold was so largely withdrawn from London that on the last day of that year the Bank of England advanced its rate of discount to 6 per cent. During 1890 there were eleven changes in the bank rate, from 6 to 3, and then to 6 again.

**1891-'92.**—The leading features abroad in 1891 were the successful negotiation by France of a loan for 868,750,000 francs, and by Germany of 400,000,000 marks; the return by the Bank of England, in the original packages, of the £3,000,000 gold borrowed of the Bank of France during the Baring crisis: a panic, March 6, at Buenos Ayres; a semipanic at Paris, March 12, caused by the embarrassment of the Société des Dépôts et Comptes Courants; the suspension, on the 27th, of the Bank of Leghorn; a movement of gold in April from the principal European centers to St. Petersburg caused by protests by Jewish bankers against Russian persecution of the Jews and the refusal of these bankers to negotiate a Russian loan, but later the Finance Minister of the Czar announced that only a part of the \$22,500,000 deposited at the European capitals would be withdrawn, and the excitement thereupon subsided. In November there was a crisis at Vienna due to war rumors, and a popular demonstration against President Fonseca of Brazil led to his resignation. The European crops of grain were largely deficient, while those in America were abundant, and while there were political and financial troubles in almost every other part of the world, the United States were peaceful and prosperous. Gold exports began in February and continued until the end of August, amounting to about \$65,476,000, chiefly to Berlin, and much of it was attracted by the virtual premium paid for it by foreign bankers who were strengthening their position in anticipation of the withdrawal by Russia of her balances at the European capitals. After August gold was returned to this country, and by the end of the year imports had amounted to \$32,957,000. Money was in fairly good supply, the exception being a flurry on Sept. 22, when 25 per cent. was recorded in consequence of the failure of S. V. White in his attempt to corner October corn. In 1892 the country felt in a more marked degree than in any of the preceding years the evil effects of the silver legislation of 1878 and of the silver-purchase law of 1890, and the efforts of the Treasury Department were from time to time during the year directed to the maintenance of the parity between gold and silver obligations. From February to the end of the year there was almost a steady movement of gold to Europe attracted by the demands of Austro-Hungary, which empire was preparing for placing the currency upon a gold basis. Twice during the year the passage by Congress of a bill for the free coinage of silver was defeated only by a combination of opposing interests, and each time the advocates of free coinage rallied for a further effort. These movements could not fail to attract attention in Eu-



rope, and they were regarded as positive indications that this country was rapidly approaching a silver basis. Consequently there was free selling of all classes of American securities, and an indisposition even temporarily to hold any of our railroad properties. The Brussels monetary conference was convened Nov. 22, delegates being appointed at the invitation of the United States for the purpose of discussing measures for a freer use of silver as currency; but after the consideration of various plans an adjournment was had until May of the following year. Our money market was comparatively easy until December, influenced by the supply of Treasury notes resulting from the monthly purchases of silver. Large exports of gold continued, and a low reserve of free gold in the Treasury caused an advance on the 19th to 40 per cent., but the final rate for the year was 5 per cent. On July 2 news of the passage in the Senate of a bill for the free coinage of silver had a depressing effect until the 13th, when the measure was defeated in the House of Representatives, and thereafter to the close of the month the market was strong.

The effect of the large crops of 1891 was shown in railroad earnings during the first half of 1892, the tonnage and exports of breadstuffs being very heavy.

For an account of the panic of 1893, see the article *FINANCIAL REVIEW*, in this volume.

**PARAGUAY**, a republic in South America. The Legislature consists of a Senate of 13 members and a Chamber of Deputies having twice as many. The President, who serves four years, is Juan G. Gonzalez, elected in 1890.

The population is about 330,000, living on an area of 253,100 square kilometres. There are about 17,000 alien residents, including 5,000 Argentinians, 2,500 Italians, 1,500 Spaniards, and 1,250 Germans. The number of immigrants in 1892 was 539. Asuncion, the capital, has 24,000 inhabitants. The standing army numbers 1,314 infantry and 347 cavalry and artillery, with 20 guns. The naval force consists of a single river-gunboat.

The receipts of the Government in 1892 amounted to 2,731,507 pesos, of which 2,130,741 pesos were derived from customs and 363,202 pesos from sales and leases of public lands. The total expenditure was 3,829,569 pesos, including 797,609 pesos of extraordinary expenditures. Of the ordinary expenditures, amounting to 3,031,960 pesos, 1,101,011 pesos were for internal administration, 943,583 pesos for war and marine, 519,059 pesos for justice, worship, and public instruction, 250,735 pesos for finances, and 217,572 pesos for foreign relations. The foreign debt on Jan. 1, 1893, amounted to 26,523,712 pesos and the internal debt to 746,841 pesos. Between 1890 and 1892 the Government issued 7,300,000 pesos of inconvertible paper currency.

Agriculture and stock-raising are the principal industries. In the autumn of 1893 promising copper mines were discovered. Manufacturing is carried on to a fair extent. The imports for 1892 were valued at 2,197,000 pesos, and the exports at 9,270,000 paper pesos, the premium on gold ranging from 600 to 660 per cent. About half of the imports are British manufactures, chiefly textiles.

Two hundred and eighty-four steamers and

86 sailing vessels, having a total measurement of 122,093 tons, were entered at the port of Asuncion from foreign ports in 1892. There are 252 kilometres of railroad, running from Asuncion to Pirapo. Besides the telegraph line erected along the railroad another was put up in 1884 from Paso de la Patria to Asuncion, placing Paraguay in telegraphic communication with other countries. Over this line 12,203 dispatches were sent in 1892, paying 18,832 pesos. The post-office in 1891 forwarded 470,185 domestic and 628,938 foreign letters; the receipts were 117,211, and expenses 183,299 francs.

**PARKMAN, FRANCIS**, American historian, born in Boston, Mass., Sept. 16, 1823; died there, Nov. 8, 1893. His ancestors on his father's side included Ebenezer, clergyman and author, and Francis, clergyman and founder of



FRANCIS PARKMAN.

a Harvard professorship of pulpit eloquence and pastoral care; and on his mother's side the eloquent John Cotton, and John, his son, a minister, who frequently preached to the Indians in their own tongue, and revised and corrected Eliot's Indian Bible; and Josiah, also a missionary to the Indians, who prepared a vocabulary of the Massachusetts tribes. Francis Parkman was graduated at Harvard College in 1844, after which he read law for two years. He had traveled in Europe in 1843-'44, and in 1846 he set out on a journey to the then trackless and unknown West, in company with his cousin, Quincy Adams Shaw. Although then but twenty-three years old, he had already formed a settled purpose which is best shown in his preface to the fourth edition, dated 1872, of his earliest volume, "The Oregon Trail." He says:

The following sketches appeared in 1847. A summer's adventures of two youths just out of college might well enough be allowed to fall into oblivion were it not that a certain interest will always attach to the record of that which has passed away never to return. . . . As regards the motives which sent us to the mountains, our liking for them would have sufficed; but in my case another incentive was added. I went, in great measure, as a student, to prepare for a literary undertaking of which the plan was already formed, but which, from the force of inexorable circumstances, is still but half accomplished. It was this that prompted some proceedings on my part which, without a fixed purpose in view, might be charged with youthful rashness. My business was observation, and I was willing to pay dearly for the opportunity of exercising it.

The hardships of that journey broke down a constitution that had been always delicate; but

the optimism of his nature appears in the preface to another volume, where he again mentions his hindrances from lack of health. He says:

For about three years, the light of day was insupportable, and every attempt at reading or writing completely debarred. Under these circumstances the task of sifting the materials and composing the work was begun and finished. The papers were repeatedly read aloud by an amanuensis, copious notes and extracts were made, and the narrative written down from my dictation. This process, though extremely slow and laborious, was not without its advantages, and I am well convinced the authorities have been more minutely examined, more scrupulously collated, and more thoroughly digested than they would have been under other circumstances.

To tell the story of the French in North America was the task he set himself; and, in spite of the great obstacles, the painstaking search was made which is described in the preface to his "Pioneers of France in the New World." He says:

The earlier period of New France was very prolific in a class of publications which are often of much historic value, but of which many are exceedingly rare. The writer has at length gained access to them all. Of the unpublished record of the colonies, the archives of France are of course the grand deposit; but many documents of important bearing on the subject are to be found scattered in public and private libraries, chiefly in France and Canada. The task of collection has proved abundantly irksome and laborious. . . . If at times it may seem that range has been allowed to fancy, it is so in appearance only, since the minutest details of narrative or description rest on authentic documents or on personal observation. To those who have aided him with information and documents the extreme slowness in the progress of the work will naturally have caused surprise. This slowness was unavoidable. During the past eighteen years the state of his health has exacted throughout an extreme caution in regard to mental application, reducing it at best within narrow and precarious limits, and often precluding it. Indeed, for two periods, each of several years, any attempt at bookish occupation would have been merely suicidal. A condition of sight arising from kindred sources has also retarded the work, since it has never permitted reading or writing continuously for much more than five minutes, and often has not permitted them at all.

With unflinching perseverance he set himself to the task of collecting until he had copies—from Europe, Canada, and the United States—of material to the amount of 3,400 pages, as well as magazines, newspapers, and books without number.

His "Oregon Trail," first appeared in the "Knickerbocker Magazine," and made an immediate reputation. His home was for many years at Jamaica Plain. His love of Nature, fostered from childhood, had served him as health restorer and recreation. He devoted himself to horticulture and gave us one new flower at least—a lily that bears his name. He published a volume entitled "The Book of Roses," and also a single novel, "Vassali Morton," and contributed many articles to contemporary literature. Mr. Parkman received the degree of LL.D. from Magill University and Harvard and Williams Colleges. He married, in 1859, Catherine Bigelow, who died in 1867. For many years he spent his winters in Boston and his summers at Jamaica Plain, and in pursuance of his historical studies he visited France

five times. His completed historical works, which can be read separately or as a series, are: "The California and Oregon Trail" (1849); "The Conspiracy of Pontiac" (1851); "Pioneers of France in the New World" (1865); "Jesuits in North America" (1867); "Discovery of the Great West" (1869); "The Old Régime in Canada" (1874); "Count Frontenac and New France under Louis XIV" (1877); "Montcalm and Wolfe" (1884); and "A Half Century of Conflict" (1892).

**PARLIAMENT OF RELIGIONS, THE WORLD'S**, met in Chicago, Ill., Sept. 11. The object of the assemblage was the presentation and discussion of the religious systems and creeds of the world by representative adherents thereof. The following religious systems and sects, among others, were represented: The Confucians; the Northern Buddhists; the Buddhists of Japan (five sects); the Jain Association of India; the Orthodox Brahmanical Society of India; the Brahmo-Somaj of India; the Theosophists of India; the Parsees and Zoroastrians; the Shinto, Tendai, and Shingen sects of Japan; the Mohammedans; the Christian Churches of the Latin, Greek, and Armenian rites; the Protestant denominations; the Hebrews; the Free Religious Association; and the Agnostics. The hymn "Praise God from whom All Blessings flow" was sung, and the Lord's Prayer was recited by Cardinal Gibbons at the opening of the parliament, after which addresses of welcome were made by President C. C. Bonney, of the World's Congress Auxiliary, and the Rev. Dr. J. H. Barrows, Chairman of the General Committee of the parliament. Responses were made by foreign delegates.

The general subject of the second day's session was "The Existence and Attributes of God," and was discussed in papers on "The Rational Demonstration of the Being of God," by Father Augustine F. Hewitt; "The Moral Evidences of a Divine Existence," by the Rev. Alfred Momerie, D. D., of London; "The Harmonies and Distinctions in the Theistic Teaching of the Various Historic Faiths," by Prof. M. Valentine; "The Theology of Judaism," by Rabbi Isaac M. Wise; "The Ancient Religion of India and Primitive Revelation," by the Rev. Maurice Phillips; "Idealism, the New Religion," by Dr. Adolf Brodbeck; "The Faith of Islam," by Justice Ameer Ali, of Calcutta; "The Religious Belief of the Hindus," by Mainlal N. Divedi, of Calcutta; and "The Argument for the Divine Being," by the Hon. W. T. Harris. On the third day, under the general heading of "Man's Place in the Universe, and the Immortality of the Soul," the principles of the Brahmo-Somaj were presented by Protap Chunder Mozoomdar; "The Foundation of the Orthodox Greek Church," by the Most Rev. Dionysius Latas, Archbishop of Zante; "Man from a Roman Catholic Point of View," by the Rev. William Byrne; "Human Brotherhood, as taught by the Religions based on the Bible," by the Rev. H. Kohler; "Confucianism," by Pung Quang Yu, of China; "Concessions to the Religious Ideas of Natives," by the Rev. T. E. Slater, Christian missionary in India; "Japanese Buddhism" and "The Real Attitude of Japan toward Christianity," by Zenshiro Noguchi and K. R. Harai; "Shintoism," by Shibata Relichi; "The Supreme End and Office of Religion," by the Rev. Father Elliott; "The Argument of Immortality," by the Rev. Philip Moxom, D. D.; "The Soul and its Future Life," by the Rev. S. N. Warner; and "The Brotherhood of Man, and Toleration for Various Religions," by Bishop Arnett, of the African Methodist



Episcopal Church. The papers of the fourth day concerned the views held of man in different religious systems, and the provision made in his behalf. They included: "The Needs of Humanity, and what the Catholic Church does in their Behalf," by Cardinal Gibbons; "Religion essentially characteristic of Humanity," by the Rev. Lyman Abbott, D. D.; "The Divine Basis of the Co-operation of Men and Women," by Mrs. Lydia H. Dickinson; "Religious Intent," by the Rev. E. L. Rexford, D. D.; "The Spiritual Forces in Human Progress," by the Rev. E. E. Hale, D. D.; "Orthodox Judaism, its Attitude and Relation to the Past, and its Future," by Rabbi H. Pereira Mendes; "The Certainties of Religion," by the Rev. Joseph Cook, D. D.; and "A History of Buddhism and its Sects in Japan," by Horin Toki. On the succeeding days papers were read on "What the Dead Religions have bequeathed to the Living," by the Rev. G. S. Goodspeed; "Comparative Theology," by Prof. T. B. Thiele; "The Points of Contact and Contrast between Christianity and Mohammedanism," by the Rev. George Washburn, D. D.; "The New Religion," by Mrs. Ormiston-Chant; "Confucianism," by Kung Hsien Ho; "Comparative Study of the World's Religions," by Mgr. C. d'Harlez; "Truthfulness of Holy Scripture," by the Rev. C. A. Briggs, D. D.; "The Catholic Church and the Scriptures," by the Rt. Rev. Mgr. Seton; "The Greatness and Influence of Moses," by Rabbi G. Gottheil; "The Need of a Wider Conception of Revelation," by Prof. J. Estlin Carpenter; "Christianity as Interpreted by Literature," by the Rev. T. T. Munger, D. D.; "Study of the Sacred Books of the World as Literature," by Prof. M. S. Terry, D. D.; "Influence of the Hebrew Scriptures," by Dr. A. Kohut; "Character and Degree of the Inspiration of the Christian Scriptures," by the Rev. Frank Sewall; "The Outlook of Judaism," by Miss Josephine Lazarus; "Jewish Contributions to Civilization," by Prof. D. C. Lyon; "Relations of the Catholic Church to the Bible," by Archbishop Ireland; "The Divine Element in the Weekly Rest," by the Rev. A. H. Lewis, D. D.; "Social Reform in India," by B. Nazaskar; "The Catholic Church and the Marriage Bond," by Prof. M. J. Wade; "The Influence of Religion on Woman," by the Rev. A. F. Eastman; "The Religious Training of Children," by Brother Azarias (deceased after preparing the paper); "The Sympathy of Religions," by T. W. Higginson; "The Historic Church," by Bishop Dudley, of Kentucky; "A New Testament Woman," by the Rev. M. A. Murdock; "The Law of Cause and Effect as taught by Buddha," by Shaku Soyen; "Christianity a Historic Religion," by Prof. G. P. Fisher; "Christ the Reason of the Universe," by the Rev. J. W. Lee; "The Incarnation Idea in History and in Jesus Christ," by Bishop J. J. Keane; "The Incarnation of God in Christ," by the Rev. J. K. Smyth; "The World's Debt to Buddha," by H. Dharmapala, of Ceylon; "Toleration," by Prof. Minas Teheraz and H. M. Field, D. D.; "The Greek Philosophy and the Christian Religion," by Prof. Max Müller; "Man's Place in Nature," by Prof. A. B. Bruce; "The Religion of Science," by Sir William Dawson; "Music, Emotion, and Morals," by H. R. Harweis, D. D.; "Hinduism," by Swami Vivekananda; "The History and Prospects of Exploration in Bible Lands," by Dr. G. E. Post; "Christian Evangelism," by James Brand, D. D.; "Islam," by Mohammed A. R. Webb; "Christ, the Saviour of the World," by the Rev. B. Fay Mills; "Reconciliation with God Vital and not Vicarious," by Rev. T. F. Wright; "The Essential Oneness of Ethical Ideas among all Men," by the Rev. Ida C. Huttin; "Religion and Music," by Prof. W. S. Pratt; "The Relation between Religion and Conduct," by Prof. C. H. Toy; "Christianity in Japan," by Harrischi Kozaki; "Religion in Peking" (China), by Prof. I. T. Headland; "The Relations of the Roman Catholic Church to the Poor and Destitute," by C. F. Donnelly; "Religion and the Erring and Criminal Classes," by the Rev. Anna G. Spencer; "Christiani-

ty and the Social Question," by Prof. F. G. Peabody; "The Women of India," by Miss J. Serabji; "Buddha," by Zitzusa Astutan; "The Influence of Mohammedanism on Social Conditions," by M. A. R. Webb; "Christianity as a Social Force," by Prof. R. T. Ely; "What has Judaism done for Women?" by Miss H. Szold; "United Action needed to accomplish Social Reforms," by Prof. C. R. Henderson; "Religion and Labor," by the Rev. J. M. Cleary; "The Churches and City Problems," by Prof. A. W. Small; "The World's Religious Debt to Asia," by P. C. Mozoomdar; "Religion and Wealth," by the Rev. Washington Gladden, D. D.; "What the Bible has wrought," by the Rev. Joseph Cook, D. D.; "Crime and its Remedy," by the Rev. Olympia Brown; "Christian Science," by Judge J. T. Hanna; "The Religion of the North American Indians," by Miss Alice C. Fletcher; "Religion in the Hawaiian Islands," by the Rev. E. P. Baker; "Missions," by H. Dharmapala, the Rev. G. T. Candlin, Mr. Norasemachanya, the Rev. R. A. Hume, Dr. George E. Post, and Dr. Hawarth; "The Religion of the Future," by Bishop J. J. Keane; "Christ, the Unifier of Mankind," by the Rev. G. D. Boardman, D. D.; "The Future of Religion," by M. M. Snell; "The Religion of Science," by Dr. Paul Carus; besides several papers bearing on the present religious condition of America and other countries, the present outlook of religion, the reunion of Christendom, the attitude of Christianity toward other religions, and the universal elements in religion.

Several of the papers were read in the absence of their authors. The following formula was adopted as a possible basis for universal religious co-operation: "Recognizing all humanity as one family, we welcome light from every source, and earnestly desire to grow in knowledge of truth and the spirit of love, and to manifest such growth by helpful service." Besides the general sessions, 48 special denominational congresses were held in connection with the parliament.

**PENNSYLVANIA**, a Middle State, one of the original thirteen, ratified the Constitution Dec. 12, 1787; area, 45,215 square miles; population, according to the census of 1890, 5,258,014. Capital, Harrisburg.

**Government.**—The following were the State officers during the year: Governor, Robert E. Pattison, Democrat; Lieutenant-Governor, Louis A. Watres, Republican; Secretary of the Commonwealth, William F. Harrity, Democrat; Treasurer, John W. Morrison; Auditor, Gen. D. McM. Gregg, Republican; Attorney-General, William U. Hensel, Democrat; Adjutant-General, Walter W. Greenland, Democrat; Secretary of Internal Affairs, Thomas J. Stewart, Republican; Superintendent of Public Instruction, D. J. Waller, Jr., till April, when his term expired and he was succeeded by Nathan C. Schaeffer; Insurance Commissioner, George B. Luper, Democrat; Superintendent of Banking, Charles Krumbhaar, Democrat; Secretary of Agriculture, Thomas J. Edge, Republican; Chief Justice of the Supreme Court, Edward M. Paxson, who resigned in February to take the receivership of the Reading Railroad; Associate Justices, James P. Sterrett, Henry Green, Henry W. Williams, James T. Mitchell, J. B. McCollum, and John Dean, all Republicans except Justice McCollum.

**Finances.**—The public debt at the close of the fiscal year ending Nov. 30, 1893, was \$8,288,061.28. The bonds and cash in the sinking fund aggregated \$5,883,064.61, which practical-



ly made the net debt \$2,404,996.67. The receipts for the year ending Nov. 30, 1893, were \$13,252,727.89. In reference to his estimates for the coming year the Treasurer says: "The estimates are conservative. Owing to the depression in business for the last six months of the fiscal year just closed, which has so seriously affected the business of all corporations and manufacturing companies, it is safe to assume that the revenues from these sources on capital stock and gross receipts will be greatly diminished, and if no revival in trade is soon experienced the decrease will be still more pronounced for the year 1894." The receipts for 1893, he says, are unprecedented in the history of the State, and can not be taken into account in making an estimate for the future, as the collections made through the Attorney-General's department, amounting to \$1,310,000, will not be repeated during the coming year.

The aggregate amount of revenues that will be paid into the treasury for the year ending Nov. 30, 1894, is estimated at \$11,805,500, and the expenditures at \$12,976,700. The personal-property tax is 4 mills on the dollar.

The accounts between the State and the city of Philadelphia, arising out of the defalcation of John Bardsley, late city treasurer, were settled Nov. 15, in accordance with a decision of the Supreme Court. The Philadelphia authorities paid into the State treasury \$525,962.43 and \$305,092.80 personal-property tax for 1890 and 1891 respectively. They also paid to the Commonwealth for the city of Philadelphia \$85,690.82, tax on loans for 1890, which the city had previously paid to Bardsley, but which he failed to pay to the Commonwealth and for which the Supreme Court held that the city was liable.

**Valuations.**—The schedule prepared for the use of the Board of Revenue Commissioners shows that in 1893 the personal property in the State subject to taxation aggregated \$607,320,458.83, the tax on which amounted to \$2,429,281.83, Philadelphia being the largest county in the State in wealth and population, naturally heading the list, its personal property aggregating \$299,391,627.50 and the tax \$1,197,566.51.

The annual report of the Department of Internal Affairs for the fiscal year ending Nov. 30, 1893, gives the assessed valuation of real estate in Pennsylvania for the year ending June 1, 1892, at \$2,308,767,431, or \$42,422,606 less than for the year ending June 30, 1893. This is estimated as about 60 per cent. of the actual value. It does not cover the property of those public corporations whose real estate is not taxed for local purposes, these taxes being paid direct into the State treasury, or include the valuation of municipal corporations, school districts, and property devoted to religious worship.

A census statement shows that the valuation of farms decreased from 1880 to 1890 by \$53,449,177. The amount at the latter date was \$922,240,233. There has been a corresponding decrease in the value of farm products in the estimate made in 1890 with that made in 1880.

**Banks.**—The report of the Superintendent of Banking for the fiscal year ending Nov. 30, 1893, shows that there are 80 banks, 16 savings institutions, and 82 trust companies under supervision of the banking department, an increase of 6 over

the previous year. Three banks—Farmers' Bank, Harrisburg, State Bank of Lock Haven, and Lebanon Trust and Safe-Deposit Bank—were forced to discontinue business. Of the 82 trust companies reported, two have gone into liquidation; a number of private banks, which were not subject to supervision under State laws, were swept out of existence by the panic.

The report shows that the amount of capital invested in the financial institutions of the State during the past year has increased \$1,946,545 compared with the previous year.

**The Order of Solon.**—The State Commissioner of Insurance gave out in December the result of an official investigation of this order. He has no legal authority or supervision over societies of this kind except under the act of April 6, 1893, authorizing him to examine their books and papers. He said:

The Order of Solon was incorporated in May, 1888, and contracted with its members to pay them \$25 per week sick benefits, \$500 in case of total disability, and \$1,000, less any sums that may have been paid on account of sick benefits or disability claims, at the end of seven years, and all for the small sum of \$2.50 per month, or \$210 for the whole endowment period of seven years. The management has not been strikingly able, but it has been able enough to make 10,601 persons residing in six different States—mostly in Pennsylvania—believe they could get something for nothing. That large number of presumably intelligent persons have paid into this concern in four and one half years the enormous sum of \$585,244.52. The outstanding contracts of the society, after deducting probable lapses, show a future liability of \$5,484,600, which will begin to mature in less than sixteen months. The net available assets of the society with which these millions are to be paid amount to \$144,549.06. The books and accounts have been loosely kept, the finances have been grossly mismanaged, and the whole affair, when fully known, will form one of the most interesting pages in the history of life insurance in Pennsylvania.

**Education.**—The Superintendent's report for the school year ending June 5, 1893, gives the following statistics: School districts, 2,386; schools, 24,012; graded schools, 12,304; male teachers, 8,245; female teachers, 17,718; whole number of teachers, 25,963; average salaries of male teachers per month, \$43.94; average salaries of female teachers per month, \$33.04; pupils, 994,407. Total cost of tuition, building, fuel, and contingencies, \$16,410,976.99.

The report of the State normal schools gives the whole number of students for the past year as 5,918; number graduated who intend to become teachers, 931; total value of property, \$2,626,103.93. The last Legislature enacted a law directing the Superintendent of Public Instruction to grant without examination permanent State certificates to all applicants therefor who are graduates of recognized literary or scientific colleges legally entitled to confer degrees, and have taught in the public schools for three full annual terms. This raised a question as to what constituted the legal power to confer degrees. Graduates of several small colleges applied for certificates. One college represented has six pupils and two teachers—the principal and his wife—and has conferred degrees. The question was referred to the Attorney-General.

**Insane Asylums.**—A joint committee appointed by the Legislature to investigate the con-



struction of the new State insane asylum at Wernersville reported that they believed the foundations would not bear half the weight to be supported. The contract provided that the walls should be constructed of local material, but it is said that much of the stone used was picked up in the fields in the vicinity of the asylum. Members of the committee said that in some places they were able to pull round stones out of the walls with their hands. They recommended that the entire structure be pulled down. The report caused surprise because the building commission appointed by the Governor had announced that the structure was well built and in good condition.

**School for Soldiers' Orphans.**—The Legislature made provision for an industrial school for indigent soldiers' orphans. The *per capita* rate of appropriation for the education and maintenance of the children admitted to the industrial school shall not exceed \$200 a year. Scotland, in Franklin County, was chosen as the site of the school. The ground will cost \$12,500. The commission expects to have the new school ready for occupancy within a year. Applications are already on file for the admission of a large number, including those now in the soldiers' orphans' schools, eligible to admission. At present the schools are almost filled to their capacity. There are 215 pupils at the Chester Springs school, 149 at Hartford, 177 at Uniontown, 1 in St. Paul's Home, Philadelphia, and 2 in the training school for feeble-minded children at Elwyn. The schools are in good condition and the children are reported to be happy and contented. The building now planned will accommodate 250 to 300 children.

**The Columbian Exposition.**—Pennsylvania's appropriation for her exhibit was \$300,000, of which all but \$3,438.86 was expended. The commission decided to sell the building. The highest bid for it was \$2,500, and it was sold for that. Sales of furniture and other articles brought up the amount to \$8,700.

**Rain and Floods.**—Heavy rains in May caused unprecedented floods in the northwestern part of the State. Meadville, Erie, Newcastle, and Titusville were among the places under water. Trains were stopped and business suspended, and immense damage was done to property.

**Mining.**—Reports of accidents for 1893 in the mining districts show that it was marked by a smaller number of fatal accidents than is usual, though the list is still very large. Six of the 7 anthracite districts (the seventh not having been reported at the end of the year) show a total of 1,291 accidents, and 352 lives lost.

**Labor Troubles.**—There was a general strike of the employees of the Lehigh Valley Railroad Nov. 18, which affected the whole line from New York to Buffalo, with the greatest trouble, apparently, at Wilkesbarre. The cause was explained to be that articles which were agreed upon at Bethlehem in August at a conference were not posted on the bulletin board and carried into effect. In addition to this, the chairman of the grievance committee said it was agreed that engineers in round-yard service were to have a uniform rate of \$3.25 a day; but the bulletin classified them at \$2.75, \$3, and

\$3.25 a day. The manager denied that any agreements made had not been posted. Later, it appeared that the superintendent refused to receive a committee of employees who desired to discuss the alleged disregard of the concessions granted at the conference in the summer. Three employees had been discharged, the committee said in their letter, without an investigation or a hearing. On the superintendent's refusal, the strike was ordered. Nonunion men were employed to some extent, but many of them were induced by the strikers to give up their places. The employees of the Erie road refused to handle Lehigh valley freight. The strike prevented the moving of coal, and thus threw many miners out of work. Trains run by the new men were stoned on certain parts of the road, and there were some wrecks by obstructions on the tracks which were attributed to the strikers or their influence. But on the whole the strike was conducted in an orderly manner.

The strike came to an end about Dec. 6. Concessions were made by both sides, the men succeeded in establishing the right for which they were contending—that of laying grievances before the representatives of the company by committee. The company's estimate of the loss incurred by the strike was given in the superintendent's report as follows: Damage to locomotives, \$46,000; damage to cars, \$19,000; damage to freight in wrecks, \$9,450; damage to perishable freight by delay, \$2,550. While the report contains no estimates of the general loss of traffic and increase of expenses, an official said that the company estimated the loss from those sources at about \$500,000, and the total cost of the strike at about \$600,000. It is also stated in the report that the assumption that the strike grew out of a refusal on the part of the officials to discuss grievances with its employees or to carry out the rules adopted and posted Aug. 7 is a misapprehension of the facts, to correct which a number of documents are submitted. One of these is a circular addressed to the members of the Order of Railroad Telegraphers by Grand Chief Telegrapher Ramsay, under date of Nov. 23, five days after the beginning of the strike, which says: "The chief cause of the strike is the refusal of the Lehigh valley officials to recognize Brother J. L. Hughes in his capacity as a member of the protective board of the Order of Railroad Telegraphers. In other words, the company's officials refuse to recognize the representatives of organized labor, the very object for which organizations are formed; hence the strike."

The Homestead poisoning cases were tried in January, and resulted in some convictions. Testimony was given to show that croton oil and arsenic had been taken by one of the men that died. Evidence was given implicating two of the union men by two cooks who confessed their own complicity. All four were sentenced to the Penitentiary. In July the two who confessed made another confession, in which they said that they had sworn falsely, and that no poison was administered. The charges against the officers of the company and the Pinkerton detectives were dropped in June, and all the strikers who had been arrested but not tried were released on their own recognizance.

A feud between the Italians and the Hungarians employed in the mines at Harleigh and Milnesville culminated in a fierce fight, April 15, in which four men lost their lives and several others were wounded.

**The State Grange.**—This body held its twenty-first annual convention at Harrisburg, Dec. 12. The reports showed that 18 new granges were organized during the year, and 5,000 new members added. About 500 granges were represented. The whole number of granges is 650, the aggregate membership about 55,000. The legislative committee declared in its report against the construction put upon the Boyer act by the Department of Public Instruction and many county superintendents, who contend that the increased appropriation to the public schools is for the purpose of lengthening the school term and increasing the salaries of teachers. The committee contends that the Boyer act was intended to lessen the burdens of local taxation as set forth in its title, and not to increase the school term and salaries of teachers.

Members of the Legislature who voted against the Niles Tax bill and the measure changing the method of electing members of the State Board of Agriculture were censured.

Resolutions were adopted demanding that Secretary of Agriculture Morton retract the utterances against the grange, alliance, and other kindred agricultural organizations, made in his speech before the World's Fair Congress.

**The Harmony Society.**—A bill in equity was filed in February against the president and members of this society, praying for the appointment of a receiver to wind up its affairs, an injunction to restrain the officers from selling or assigning the property, an order to them to pay to the receiver the amount of losses sustained under their management, and an order for the dissolution of the society and division of its assets. It is alleged that recently the society had property valued at \$4,000,000, but that a great deal of this has been lost, and that the petitioners now believe that the society is insolvent; that within six years Duss, the president, has sold two million dollars' worth of valuable stocks, ostensibly for the payment of debts, which debts were contracted through his own fraud, neglect, and mismanagement. It is also alleged that the principles of the society have become obsolete; that Duss and Sieber, a trustee, are living in luxury with their wives, whereas the main principle of the organization is celibacy.

It is further charged that Duss has given away large sums of money to support one Cyrus Teed, *alias* "Koresh," who claims that he is God, and who is surrounded by certain deluded women whom he calls his "angels"; that Duss has heretofore purposed to introduce Teed and his associates into the Harmony Society, and as a preparation for this end has erected a large and expensive residence on the lands of the society at Economy for Teed and his associates, at a cost of \$12,000. The complainants also charge that Duss has preached the doctrines of Teed, and that he has courted sympathy with one Michael K. Mills, commonly known as "Prince Michael," of Detroit, another pretender of divine attributes, who is now serving a term of imprisonment for the commission of a crime.

**The Field of Gettysburg.**—A trolley electric road has been built at Gettysburg, running around the National Cemetery and in the Emmittsburg Road. The first trip was made July 13. During the progress of the work complaint was made that the blasting and grading for the road were changing important features of the historic battlefield, and investigation was made in June by a member of the Gettysburg Battlefield Commission, who reported to the Secretary of War. He said:

When I left Gettysburg, workmen were engaged in blasting out a group of bowlders, covering a space 75 by 25 feet, which formed a portion of the defenses in front of the left of the Third Army Corps during the second day's battle. A variation of a dozen feet in the line, which there was ample chance to make, would have cleared those bowlders; but it was evident that they were being blasted for material from which to make filling for the road, which is swampy at that point.

The bowlders which covered the combatants in the desperate engagement between the Fourth Maine and Fortieth New York of the Union army and the Forty-fourth Alabama and the right of Benning's brigade of the Confederate army are already blasted, and the fragments broken under the hammer are covered with earth to form a roadbed, and it is this locality which has been turned into a park, to which cheap excursions are to be run from Baltimore and other cities.

This is the most wild and picturesque section of the field. For the distance of over one mile before reaching this locality the road cuts ruthlessly through the scene of some of the most desperate encounters of the battle, in which De Trobriand's, Tilton's, Sweitzer's, Zook's, Kelley's, Cross's, and Ward's Union brigades, and Kershwell's, Semmes's, Woolford's, Anderson's, and Robertson's Confederate brigades contended for hours.

The damage already committed by the electric road is very great, and can never be repaired; but the present desecration is but the commencement of what may be done if this company is allowed to invade other sections of the battlefield.

Citizens of Gettysburg applied to the Attorney-General of the State for a writ of *quo warranto* to take away from the Gettysburg Electric Railway Company its charter and exact a forfeiture of its rights, and the case was argued before the Attorney-General in August.

**Judicial Decisions.**—The question came before the court whether the Legislature can appropriate money to pay an official not provided for by statute. In the general appropriation bill passed at the last session of the Legislature \$4,800 was appropriated for the payment of an additional clerk in the office of the prothonotary of the Supreme Court for the eastern and western districts, respectively. When the man who had been serving as one of these clerks asked the Auditor to draw his warrant for salary, the Auditor refused, on the ground that he had no authority to do so, since the office had not been created by statute. The judge decided in favor of the Auditor.

The Supreme Court upheld the authority of a Sunday law, enacted in 1784, in a recent case, in which the publisher of a Pittsburg Sunday paper was convicted of violating the law.

The Attorney-General having given a decision that the Insurance Commissioner is entitled to all the fees in his department, the predecessor of the present incumbent applied for the amount of



the fees turned into the treasury during his term of eight years, and received \$16,000.

A taxation case of importance was decided in November. The State officers contend that under the act of 1891 the capital stock of corporations must be appraised arbitrarily at such sum as would at 6 per cent. yield the amount of net earnings reported, although the appraisal reached in that way may be higher than the actual value of the stock. In a great many cases the Auditor-General has, upon that theory, increased the valuation of stock made by corporate officers. The court of Dauphin County decided that the Auditor-General could not do this.

**Political.**—A State Treasurer and a judge of the Supreme Court were to be elected Nov. 6.

The Republican Convention nominated, Aug. 30, for Treasurer, Samuel M. Jackson, and for Judge, D. Newlin Fell. The resolutions affirmed adherence to the Minneapolis platform; demanded repeal of the purchasing clause of the Sherman act; favored expansion of the circulating medium till it should amount to \$40 *per capita* of the population; approved the proposition to issue to national banks notes to the par value of the bonds deposited to secure their circulation; declared that the obligations of the Government should be discharged in money approved and current in all civilized nations, and to that end that a largely increased reserve of gold should be gradually accumulated and maintained; expressed the belief that the financial distress in the country was due to the conviction that an attack was to be made on the American system of protection, and protested against any amendments to the McKinley bill until it should have been fairly tested and judged by its practical operation; condemned the pension policy of the Government; and demanded strict immigration laws. It was resolved that representation in future State conventions shall be based upon the vote cast at the presidential or gubernatorial election immediately preceding, one delegate being allotted to each legislative district for every 2,000 Republican votes, and an additional delegate for a fraction exceeding 1,000 votes, each district to have at least 1 delegate. The Legislature was commended for setting apart from the revenues of the Commonwealth an additional \$1,000,000 to defray the cost of public schools, thus increasing the appropriation for that purpose to \$5,500,000 per annum.

The Democratic Convention met Sept. 19. The nominees were: For Justice of the Supreme Court, Samuel G. Thompson; for State Treasurer, Frank C. Osburn. New rules were adopted for the organization of the party in the State, to take effect April 1, 1894. They do not change the basis of representation, but they give to the State chairman and the State executive committee the selection of all the temporary officers of a State convention. The platform approved the national Administration; demanded the repeal of the purchasing clause of the Sherman act; denounced the declaration made by the Republican State Convention in favor of an expansion of the currency; favored a currency of gold and silver coin, Treasury and bank notes sufficient for the business needs of the country, insisting that it shall at all times be kept at a parity of value;

approved the action of the Government in regard to pensions; attributed the financial disturbances to the legislation of the Republican party, and demanded tariff reform; approved the administration of Gov. Pattison, and condemned the last State Legislature; recommended a non-partisan judiciary; and urged thorough Democratic organization.

The Prohibition party nominated H. T. Ames for Judge, and J. S. Kent for Treasurer.

The People's party also placed candidates in the field.

The Republicans elected their ticket by large pluralities. Their candidate for Treasurer had 442,248 votes to 307,102 for the Democratic candidate, and their candidate for Judge of the Supreme Court had a plurality of 133,581. The Prohibitionists cast a vote of 21,358 for State Treasurer, and the People's party 6,979. Compared with the vote cast for President in 1892, the Republican vote was reduced 75,763, and the Democratic vote 145,162.

In Philadelphia the Republicans carried the city and county elections, their county candidates averaging pluralities of 52,000.

A call was issued for a conference to be held at Pittsburg, March 16, by persons interested in the forming of a new political party. The conference met in Lafayette Hall, where the Republican party had its beginning, and an organization was effected. The platform recognizes God as the author of civil government, equal right for all, without respect to race, color, or sex; abolition or suppression of the drink traffic, and such other moral, economic, financial, and industrial reforms as are needed in this country. A committee on permanent organization was appointed, and an adjournment was taken to June 6, at Harrisburg.

The officers of the electoral college were not paid for their services this year, the Auditor and Treasurer taking the ground that there is nothing in the law authorizing such payment. Four years ago the electoral college cost the State \$989.47. This amount was divided between the electors and the officers of the college. The expenses under the new decision were estimated at less than \$200.

**Legislative Session.**—The Legislature was in session about five months, from Jan. 3 to June 1.

The Governor's message, in referring to the insurrection at Homestead, said that the sheriff did not try to subdue it, and the county ought to pay the cost, \$430,000. The message further called attention to the inequality of taxation between real estate and personal property; renewed the recommendation that a revenue law be framed by which the entire cost of the State government be paid by a tax on corporations and collateral inheritance, and that other taxes be returned to the counties to relieve the real estate therein; urged legislation against combines, especially the coal monopoly, and favored free school books and renewed attention to quarantine. In reference to the public printing, the Governor called attention to the long delays in bringing out public documents, the printed report of a department often not appearing till the manuscript for the succeeding one was in the hands of the printer. He said precedence

was given to private contracts over government printing. This called out an answer from the public printer in the form of a letter to the Governor, who sent it to the Legislature. The printer said his delays are due to delay on the part of officials in furnishing the copy of their reports, and to their failure to return proofs promptly.

The following were named for the office of United States Senator: Matthew S. Quay, George Ross, George W. Childs, John Dalzell, and John B. Robinson. Mr. Childs declined to allow the use of his name. The Republican caucus made M. S. Quay the Republican candidate by a vote of 146 to 18 for Mr. Dalzell and 1 for Mr. Gobin. George Ross was the Democratic nominee. On the vote the House stood: Quay, 132; Ross, 66; Dalzell, 1; Harrity, 1. The Senate gave Quay 33, Ross 14, and Mutchler 1.

Bills were passed to the number of 452, of which 371 became laws.

The ballot law was changed in some of its details, though not as radically as was proposed. Following are the changes: The ballot is decreased to half its present size. Only one set of ballots and sample ballots is necessary. The percentage for party nominations is reduced from 3 to 2. The time allowed for printing the ballots is increased. It is provided that the printing of the ballots for spring elections shall be done under the supervision of the county commissioners. Certificates of nominations for members of the House of Representatives shall be filed with the county commissioners instead of the Secretary of the Commonwealth. One mark in a circle at the top of a column of candidates shall be a vote for every one in that column. Where the circle is not marked a mark for every candidate voted for is required. A screen or door must be placed on the front of each booth, thereby better securing privacy. Greater thickness of paper for ballots is provided for, and the corner of the ballot folded over shall be printed black, so that the number can not be seen through the paper. In case a voter votes more persons than he is entitled to, the ballot shall not be entirely thrown out, but so much of the ballot as is properly marked shall be counted. The disability clause of the act of 1891 is unchanged, but a penal clause is provided for any one who falsely represents his disability.

Other acts provide that polling places shall be within the territorial limits of the election districts; that electors shall vote where they are domiciled; and prohibit political committees and candidates from paying expenses of naturalization papers for aliens.

Election days are made legal half holidays from twelve o'clock noon till midnight. Vacancies in election boards are to be filled at any time before an election by judges of the Court of Common Pleas.

The sum of \$25,000 was appropriated for the purchase of the ground where the Continental army was encamped at Valley Forge. A commission of 10 citizens is to negotiate the purchase and adopt plans for improvement, preservation, and maintenance of the ground as a public park.

In the interests of labor, an act was passed in

regard to factory inspection. It forbids the employment of children under thirteen, and of any minors for more than twelve hours a day or sixty hours a week, and prescribes regulations to insure safety of employees. Another law provides for ventilation of bituminous coal mines. To provide arbitration in cases of variance between capital and labor, it was enacted that when differences arise it shall be lawful for either party, or for both parties jointly, to make application to the Court of Common Pleas wherein the service is to be performed about which the dispute has arisen to appoint and constitute a board of arbitration to consider, arrange, and settle all matters at variance between them. The persons so appointed shall not be connected with the interests of either party; they may send for persons, books, and papers, and enforce their presence, and their decision shall be final. It was made unlawful to employ Pinkertons in cases of labor troubles. The first Saturday in September, instead of the first Monday, was made Labor Day.

The legislation in regard to schools included a law granting free text-books, with an appropriation of \$500,000 annually for their purchase.

The re-equipment of the National Guard was provided for and a reorganization bill making some important changes was passed. A naval militia was also established.

The main bills affecting the agricultural interests were those creating the office of dairy and food commissioner and that prohibiting the use of oleomargarine in institutions receiving State aid.

Among other measures passed were these:

Authorizing the formation of co-operative banking associations.

Appropriating \$500,000 for a State library building, and \$125,000 for remodeling the Capitol.

Punishing dairy adulterations.

Creating a forestry commission.

Requiring the public records to be kept in the English language.

Making appropriation for the purchase of medals of honor.

A resolution was passed in the Senate directing the Judiciary Committee to inquire into the right by which the factory inspector was holding his office and drawing the salary, since his nomination by the Governor had been rejected by the Senate of 1891. His name was again sent to the Legislature of 1893. On the reception of the majority and minority reports of the committee, a resolution was passed declaring—

That the action of the Governor relative to the office of factory inspector, has been derogatory to the rights of the Senate as a co-ordinate branch of the Government, and has not been in accordance with the constitutional requirements relative to appointments which he is authorized by section 8, Article IV, of the Constitution to make.

An organization was formed early in the session among the members from the rural districts, irrespective of party, with the avowed object of promoting legislation favorable to the agricultural interests. The Pittsburg and Philadelphia members regarded the movement as a combination against them, but all such intention was denied.



**PERSIA**, an empire in central Asia. The Emperor, called officially the Shah-in-Shah, is Nasreddin, born July 18, 1831, who succeeded his father Muhammed in 1848. Muzafereddin, the heir presumptive, was born in 1853. The Grand Vizier is Ashghar Khan.

The revenue for 1889 was estimated at 55,369,516 krans (1 kran is worth 12 cents in gold at the present price of silver). Of this, 36,076,757 krans represent taxes paid in money, 10,100,983 krans taxes paid in kind, 8,000,000 krans customs receipts, and 1,191,776 krans other receipts. The budget of expenditure was 42,233,472 krans for ordinary purposes and 1,000,000 krans for the Shah's palace, leaving 8,000,000 krans to

Teheran, in expectation of the re-establishment of free transit through the Caucasus into Persia. The British have not been able to make much use of the Karun river, which they obtained leave to navigate through diplomacy, hoping that it would give them access to the markets of central Persia. When the trading firm of Lynch put steamboats on the river that could navigate the upper course, the Persians added artificial obstructions to the natural ones at Abbas.

The rich eastern province of Khorassan is accessible to Indian as well as to Russian trade. The finer grades of Indian black tea and Indian and English prints and muslin are in demand. The Russians have obtained a large share of



THE CITY OF KUSHAN, DESTROYED BY AN EARTHQUAKE.

cover the deficit of the preceding year and 4,136,054 krans surplus. The ordinary expenditures were 18,100,000 krans for the army and navy, 10,000,000 krans for pensions, 8,000,000 krans for the Shah's household, 3,233,472 krans for local expenses, including a subsidy of 600,000 krans for the Kajar tribe, 1,900,000 krans for worship and education, and 1,000,000 krans for foreign affairs. There is no public debt.

The annual value of the imports is about \$22,000,000, consisting largely of cloths, mostly cottons, besides which sugar, glass, paper, iron, copper, and tea are imported. The exports amount to about \$15,000,000, consisting of opium, pearls and pearl shells, tobacco, cotton, silk, carpets, skins, gums, cereals, legumes, wool, dates, rice, etc. Of the exports, 61.6 per cent. are food articles, 31.3 per cent. raw materials, and 7.1 per cent. manufactured articles. There are 4,155 miles of telegraph lines, with 6,450 miles of wire, but only 11 miles of railroad. This railroad, which was built in the environs of Teheran by a Belgian company, has been acquired and is being extended by Russians, who are also building a road for vehicles from the Caspian Sea to

the trade in piece goods, and take most of the cotton and wool and a large proportion of the other exports. The town of Kushan, in Khorassan, was destroyed by an earthquake on Nov. 17, 1893, and the fertile country of which it was the center, planted in vineyards and gardens, was inundated. By these calamities about 12,000 people lost their lives, and the property and means of subsistence of the rest of the population were taken away. The arched structures in the illustration are brick-kilns.

Earlier in the year there was great destitution at the opposite extremity of Persia in Shiraz, capital of the province of Fars. The people accused the authorities of forestalling grain, and broke out in the middle of May in a riotous demand for bread. The famishing people plundered the bazaars, and the soldiers who were sent to suppress the riots joined the rioters.

**PERU**, a republic in South America. The Senate has 40 and the Chamber of Deputies 80 members, elected indirectly for six years, one third retiring every two years. The President serves four years. Remigio Morales Bermudez is President for the term ending Aug. 10, 1894.



His Cabinet at the beginning of 1893 was composed as follows: President and Minister of the Interior, Police, and Public Works, C. M. Elias; Minister of Foreign Affairs, E. Larrabure y Unanue; Minister of Finance and Commerce, R. Quiroz; Minister of Justice and Worship, Dr. J. Puirredon; Minister of War and Marine, B. Morales Bermudez.

**Area and Population.**—The area of Peru is 437,000 square miles. The population is estimated at 2,980,000, including 350,000 uncivilized Indians. Lima, the capital, had 103,956 inhabitants in 1891. There are 18,000 Europeans and 50,000 Asiatics in the country.

**Commerce.**—The imports for 1891 were valued at 15,166,000 soles or dollars, of which 6,289,000 soles came from Great Britain, 2,865,000 soles from Germany, 1,576,000 soles from France, 1,323,000 soles from the United States, 1,103,000 soles from Chili, 539,000 soles from China, 468,000 soles from Belgium, 445,000 soles from Italy, and 558,000 soles from other countries. The total value of the exports was 12,371,000 soles, of which 5,811,000 soles went to Great Britain, 1,190,000 soles to Chili, 1,111,000 soles to Germany, 354,000 soles to France, 278,000 soles to the United States, and 3,627,000 soles to other countries. The values of the principal exports were: Sugar, 2,921,000 soles; silver in ingots and silver ore, 1,198,000 soles; cotton, 1,014,000 soles; wool, 887,000 soles; silver-bearing lead ore, 433,000 soles; rice, 150,000 soles; gold bars, 145,000 soles. The state railroads have a length of 760 miles and private railroads 125 miles. There are 1,415 miles of telegraphs.

The foreign commerce of Peru has fallen away, and business in 1893 was generally depressed and disorganized. When specie payments were restored in 1888 and an arrangement was made later with the foreign bondholders whereby the railroads could be operated properly and completed in the sections that were most needed, the prospects of trade and production seemed bright; but there has been nothing but disappointment, and in 1893 the approaching election of a President added the demoralizing effects of political agitation. Gen. Caceres, the most popular general in the war with Chili, who was elected President after the war in succession to Dr. Nicolas Pierola, was the official candidate, having placed Bermudez in the presidential chair in the expectation of returning to power in the succeeding term. This custom of employing the power and patronage of the Administration to perpetuate the personal rule which the provision making a President ineligible for the next term is intended to prevent is even less liked in Peru than in other Spanish-American republics. The former term of Caceres was considered successful at the time, though the results of his policy had been disappointing, but now his candidacy was exceedingly unpopular among the democratic masses, whose favorite was Pierola, formerly decried as a dictator, who was living in exile at Panama, having escaped from the prison where he was confined for a revolutionary attempt against the Government of Bermudez. Several other aspirants had their followers in the various political cliques. Caceres was accused of bringing back from Europe, where he was minister at Paris, a large quantity

of arms and of influencing the Government to adopt coercive measures. The policy of his former administration was denounced as the root of all the political and economic evils of the country. The mob in Lima wrecked the offices of the administration journals, and those opposed to the Government were suppressed by the police. Riotous demonstrations and assaults and assassinations were committed from political motives. Pierola, who was not permitted to enter Peru, conducted his canvass from one of the towns occupied by Chili.

At the end of February a new Cabinet was chosen by President Bermudez, as follows: Premier and Minister of Foreign Affairs, Gen. Velarde; Minister of War, Manuel Villavicencia; Minister of Foreign Affairs, Chacaltana; Minister of Justice, Zegarra; Minister of Finance, Salvador Caverro. The preaching of the clergy against the Freemasons led to riots in various places. At Mollendo, on March 25, the Masonic lodge was sacked and the American consular agent was wounded by a pistol-shot, while the police looked on with passive indifference. The American Government demanded an expression of regret and reparation. The subprefect of police was removed and reparation promised.

On May 11 the Velarde ministry was succeeded by another, composed as follows: Premier and Minister of Foreign Affairs, José Manano Jimenez; Minister of the Interior, Pedro José Zavala; Minister of Justice, Alfredo Gaston; Minister of War, Nicanor R. Somocurcio; Minister of Finance, Eugenio Marquezado. One ground of difference between the parties was the question of the provinces occupied by Chili. By the treaty of 1883 the people of Tacna and Arica would decide by a popular vote at the end of ten years whether they would continue under Chilean rule or return to Peru. But the Chilean Government demanded as a condition of the restitution of the nitrate fields that Peru should pay the war indemnity of \$10,000,000, and this was impossible in the bankrupt condition of the Peruvian treasury. Congress met to organize on July 13 and began its regular sessions two weeks later. In Congress the predominant party was the Union Civica, which was hostile to the Government and to Caceres, and looked with no favor on the candidacy of Pierola, but could not agree upon its own standard-bearer for the elections of April, 1894.

Upon the assembling of Congress Irigoyen, the director-general of finances, and Mendizabel, chief of the treasury, were suspended on charges of corruption in the collection of taxes. Other officials and adherents of Caceres were implicated in the frauds. In consequence of a vote of censure passed upon Minister Zavala for violating the liberty of the press he was forced to resign in the beginning of September, and the portfolio was taken by Gaston temporarily at first and definitely when the ministry was reconstituted on the resignation of Marquezado at the end of the month. Latorre Gonzales succeeded the latter as Minister of Finance and Pardo Figueroa became Minister of Justice. The Government was unable to pay the annuity of £80,000 sterling which it undertook to pay to the Peruvian corporation under the Grace contract, as the treasury was empty and salaries and other obligations were in



arrears. Before defaulting, the Government attempted to prove a breach of contract on the part of the corporation, and the courts imposed a fine of £5,000, which was not collected because the charges were frivolous. The Congress refused to authorize the Government to cancel the contract. It agreed to a proposition to increase excise duties 50 per cent., and passed a bill re-establishing the gold currency and prohibiting the importation of silver coins. The editors who had been prosecuted were allowed by act of Congress to print their newspapers again. Gen. Caceres was declared to be a traitor, and a bill was passed to deprive him of citizenship on the ground that he had granted to Ecuador a part of the Peruvian territory when he was President. A new boundary treaty with Ecuador was rejected. At the close of October the most serious rioting of the year took place. The followers of Caceres demanded the dissolution of Congress and an immediate election of a new President. The police countenanced the disturbances, but not the ministers, who threatened to resign if energy could not be shown in repressing disorder, and who prevailed upon the President to order out the military.

#### PHYSICS, PROGRESS OF, IN 1893.

**Constitution of Matter.** *Ether and Matter.*—Prof. O. Lodge (British Association) has continued his experiments to detect a possible drag exerted by matter on ether. He has been able to rotate two disks of tough steel a yard in diameter and an inch apart 3,000 times per minute without obtaining evidence of such drag. An oblate spheroid of wrought iron weighing a ton and magnetized by a current sent through a wire wound around it in a deep groove was also rotated without effect.

*The Fourth State.*—Lord Kelvin (London Royal Society, Nov. 24) has followed out the hypothesis that the phenomena of the Crookes cathode stream are caused by inelastic molecules whose energy, by impact on the tube, is spent entirely in heating the glass. Taking the mass of matter in 1 cubic centimetre as equal to  $10^{-8}$ , and the velocity to be 100,000 centimetres per second, the final temperature is  $375^{\circ}$ —about that found experimentally. The pressure would be about 100 milligrammes per square centimetre—ample for the observed mechanical results. The assumed velocity is too small to affect the optical color test, and Kelvin concludes that there is no objection to the Crookes doctrine of a cathode stream.

**Mechanics.** *Foundations of Dynamics.*—An extended discussion on the fundamental axioms of dynamics has been carried on by Prof. O. Lodge, Prof. McGregor, of Nova Scotia, and others, chiefly in the "Philosophical Magazine" and "Nature," one of the subjects of discussion being an attempt by Lodge to restate the laws of motion in terms of energy. In one of his new laws he asserts the continued identity of every portion of energy. This he upholds ("Nature," Jan. 16) on the ground that energy, like matter, is always passed on continuously through space. Heaviside, in reply, instances gravity as an exception, but Lodge asserts that even if gravity be passed on instantaneously, as if by a thrust of an incompressible body, it is none the less passed continuously.

*Potential.*—F. W. Dyson (at the meeting of the London Royal Society, April 20), in discussing the potential of an anchor ring, finds that a rotating ring is stable for fluted and twisted disturbances, but unstable for long, beaded ones. This has an important bearing on certain astronomical theories.

*Elasticity.*—G. F. Becker ("American Journal of Science," November) finds that if Hooke's law were exactly true, sensible changes of pitch would occur during the subsidence of vibration in strongly excited bodies. He deduces the following formula, which is not open to this objection:  $\ln(a^2h) = \frac{Q}{M}$ , where  $a$  = ratio of shear due to the traction  $Q$ ,  $h$  = ratio of linear dilatation,  $M$  = Young's modulus, and  $n$  = modulus of distortion.

*Grinding and Polishing of Solids.*—Lord Rayleigh (British Association), in experiments on the grinding and polishing of glass by emery, finds that the former process is not a scratching, as has been generally supposed, but a formation of isolated pits or depressions, and that the polishing then removes molecular layers till the level of the bottoms of these pits has been reached. The polishing was good when a thickness equal to  $2\frac{1}{2}$  wave lengths of sodium light had been removed, and was perfect when 4 wave lengths had been taken.

*Gravity.*—Mascart (Paris Academy of Science, Jan. 30) details the results of observations made at Parc St. Maur Observatory for many years, which show variations in the intensity of gravity. The instrument used was a barometer tube in which the mercury was balanced by hydrogen confined in an adjoining vessel. Daily variations were observed, as well as sudden variations which he thinks must have been due to displacements in the mass of the earth. Some of these lasted fifteen to sixty minutes, and caused a difference in the level of the mercury of .05 millimetre. D'Abbadie (ibid., Feb. 6) asserts that observations on falling bodies begun in 1837 in Brazil have made the constancy of gravity doubtful. He proposes to call Mascart's instrument a brithometer (Greek *brithos*, weight). Bouquet de la Gorge (ibid., Feb. 20), of the Dépôt de la Marine, has made observations with a similar instrument that indicates the change of the moon's position by an alteration of level of 46 millimetres. A. Berget (ibid.), using a similar instrument, which he calls a hydrogen gravimeter, has observed the effect of a change of level of 1 metre in a lake 79 acres in extent, reading the slight alteration of level in his instrument by a method depending on the use of interference fringes. He deduces as the value of the gravitation constant  $6.80 \times 10^{-8}$ , and as the density of the earth 5.41. Richarz and Krigar-Menzel have finished a series of observations on the density of the earth that have been carried on by them in the citadel of Spandau since 1887. By balancing two heavy masses at different vertical distances below the balance beam, and then changing their places, it is found that the difference between the values of  $g$  for a change in level of 2.26 metres is  $6.523 \times 10^{-6}$ . The value calculated from other data is  $6.970 \times 10^{-6}$ . The discrepancy is due perhaps to the presence of strata less dense than the average.

**Liquids.** *Solution.*—S. U. Pickering ("Philosophical Magazine," February) finds that the product of the molecular weight of a liquid by the square of the rate of diffusion is not constant, which shows that osmotic pressure in a solution is not due simply to gaseous impact of dissolved molecules, or else that perfection is not attainable in diffusion experiments. C. Dieterici (Wiedemann's "Annalen," October) has measured the vapor pressures of aqueous solutions by the movements of an aneroid box, the concentration varying from extreme dilution upward. The curves expressing his results are similar for all solutions, beginning at approximately the same angle, then falling steeply, and finally tending to become parallel to the axis of abscissas. Humburg ("Zeitschrift für physikalische Chemie," xii, 4) finds that the effect of electrolytic dissociation on the magnetic rotatory power of a solution is too small to be detected.

*Osmosis.*—Tammann ("Journal of the Chemical Society," December, 1892), with a view of testing the theory that precipitated membranes act as sieves, letting through water, but not the molecules of a dissolved substance, has experimented with 3 membranes, respectively of tannate of gelatin, zinc ferrocyanide, and copper ferrocyanide, and solutions of 17 acids and salts. He finds that the permeability is the same for all the membranes, and thinks that his results indicate the passage of the ions of the acids separately. The behavior of the salts, however, was anomalous.

*Crystallization.*—E. H. Amagat (Paris Academy of Sciences, Oct. 16), after melting ice by compression at a temperature below zero centigrade, caused the water to solidify in crystals by gradually lessening the pressure. This he calls crystallization by decompression.

*Expansion and Compression.*—E. H. Amagat (ibid., April 17) finds that with water kept at constant volume the pressure increases rapidly with the temperature. Thus, for unit volume, the coefficient increases fourfold between 10° and 100°, and the variation is probably more rapid between 0° and 10°. The same (ibid., Oct. 31) has investigated the compressibility of ether, alcohol, carbon disulphide, acetone, ethyl halides, and phosphorus chloride, and finds that the coefficient of compression always decreases regularly as the pressure increases. At 3,000 atmospheres that of water was reduced by nearly one half its ordinary value, and that of ether by two thirds. This diminution is greater the higher the temperature.

*Density.*—A. Hanal (Vienna "Berichte," quoted in "Nature," March 16) measures liquid density by the following simple method: Two glass tubes are joined by rubber tubing 30 by 1 centimetre. One, which has two marks 30 centimetres apart, is immersed up to the lower mark in the liquid to be measured, and the other tube is immersed totally in water. On pulling it out, the liquid in both tubes rises till that in the first tube reaches the higher mark. The height of the water column, on a suitable scale, then measures the density.

*Capillarity.*—Ramsay and Shields find a close analogy between the equation  $p v = R T$ , that holds good for gases, and a similar equation  $\gamma s = \kappa \tau$ , for the surface of a liquid,  $\gamma$  being the

surface tension,  $s$  the surface area,  $\kappa$  a constant, and  $\tau$  the temperature measured downward from a point about 6° below the critical point. This relation was found experimentally to hold good for several liquids. T. Proctor Hall, of Clark University, Worcester, Mass. ("Philosophical Magazine," November), has exhaustively studied methods of measuring surface tension. He employs three. (1) The weight of a thin horizontal bar having its extremities bent at right angles so as to touch the liquid was taken when a film extended between the bent ends, and also without such film. (2) With liquids where the film breaks before it is high enough (5 to 10 mm.) to give good results, a set of thin parallel vertical plates in a holder were weighed similarly. (3) With the bar used in the first method, the maximum of weight was taken just before the formation of a true film. This last method was found capable of almost incredible delicacy. Water showed great variations of tension, the averages running from 71.91 with glass to 73.29 with zinc—a smaller result than that obtained by Rayleigh from ripples. De Vries (Royal Academy of Sciences, Amsterdam, Feb. 25) has measured the variation of ascension of ether in capillary tubes from -102° C. to 193° C. The surface work, plotted as a function of the temperature, gives a curve with its convex side toward the axis of temperature and ending tangent to it. C. Maltezos (Paris Academy of Science, Nov. 14) finds that when a liquid spreads over the free surface of a denser liquid, microglobules are formed by inverting the liquids. If, on the contrary, a liquid rests in drops on a denser, in the inverted position the denser will spread over the less dense.

*Viscosity.*—Barus ("American Journal of Science," February) has found the influence of temperature, volume, and pressure on marine glue, and constructed curves showing his results. Among them are the striking preponderant influence of temperature on viscosity. He finds that in proportion as the viscosity increases with fall of temperature, its isothermal rate of increase with pressure also increases.

*Hydrodynamics.*—P. Rudski ("Philosophical Magazine," May) finds that there are two critical velocities for water in a straight pipe—a greater, making quiet motion impossible, and a smaller, making tumultuous motion impossible. When the liquid enters, the motion is tumultuous, but with a small velocity viscosity acts and the eddies die out. With increased velocity, however, the eddies break and reform. G. H. Bryan (ibid., April), in investigating the motion of a perforated solid in a liquid, finds that no forces act to maintain a screw motion whose axis is coincident with the central axis of the impulse.

*Gases. Resistance to Motion.*—Cailletet and Colardeau (Paris Academy of Science, July 17), using a receiver with a paddle wheel actuated by a weight, find that resistance offered to the motion of a plane is proportional to the surface, the square of the velocity, and the pressure and density of the gas. Two planes separated by a distance equal to the breadth of one met with only 1.1 time the resistance of one. Two planes 0.15 metre broad, even when one metre apart, did not meet twice the resistance of a single one.



**Concentration of Energy.**—G. J. Stoney ("Philosophical Magazine," April) remarks that if the universe is permanent, concentration of energy must go on somewhere to balance the dissipation of energy which we know to be continually taking place. He suggests that microbes may be its agents, as would be the case if they would assimilate only the swiftest of the moving molecules, thus continually sorting these out like the hypothetical "demons" of Clerk Maxwell.

**Kinetic Theory.**—Prof. L. Boltzmann (ibid., March), in discussing the equilibrium of *vis viva* in a gas, proves that the mean kinetic energies of a shell and an atom are equal, and Maxwell's law of the distribution of velocity between shells and atoms is thus satisfied without assuming impacts of shells and atoms on each other. If certain forms of central motion are suddenly disturbed by collisions, the same will be produced equally often elsewhere.

**Heat. Thermometry.**—E. H. Griffiths and J. M. Clark (Cambridge, England, Philosophical Society, Oct. 31), following the suggestion of Dewar and Fleming that the electrical resistance of a metal disappears at the absolute zero, find by extrapolation from the scale of a platinum thermometer that  $R = 0$  at the mean value  $-273.86^\circ$ . This agrees nearly with Joule and Thomson's thermodynamic value for absolute zero, which is  $-273.7^\circ$ . They suggest that these data be used in the graduation of a class of thermometers.

**Specific Heat.**—W. Voight (Wiedemann's "Annalen," No. 8), in a series of determinations of the physical constants of metals that have been subjected to the minimum possible amount of manipulation, finds that the specific heat of such metals especially differs from that of drawn and rolled metal.

**Radiation.**—B. Galitzin (ibid., 47, 1892) finds that the transfer of energy to new masses of ether is accompanied by expenditure of work in the case of reversible operations, and that in the case of adiabatic and reversible processes the amount of disposable energy is inversely proportional to the cube root of the volume throughout which this energy is distributed.

**Mechanical Equivalent.**—E. H. Griffiths (London Royal Society, Feb. 16) has endeavored to secure great accuracy in the determination of this constant by using a calorimeter that was practically suspended in the bulb of a huge thermometer, containing 70 pounds of mercury and showing a change of  $1^\circ$  centigrade by a rise of 300 millimetres. He finds that  $J = 427.45$  kilogrammetres in the latitude of Greenwich.

**Conductivity.**—It has been generally supposed that freedom from convection currents in measuring the conductivity of liquids was insured by letting the flow of heat take place from above downward, but R. Wachsmuth (Wiedemann's "Annalen") shows that this is by no means the case, using a solution of blue iodide of starch, which is decolorized by heat. He observed in the liquid strata with wavy outlines, in some cases cooler at the top than at the bottom, and obtained evidences of vortex motion. It seemed impossible to avoid these movements in the liquid.

**Temperature of Vapor.**—Sakurai ("Journal of the Chemical Society," June, 1892) has established the fact that the vapor from a boiling salt

solution has exactly the temperature of the solution, instead of that of the boiling point of pure water, as was formerly believed.

**Sound. Photography of Sound Waves in Air.**—C. Vernon Boys, in experiments having primarily for their object the photography of a moving rifle bullet, has obtained interesting records of the accompanying aerial waves. His apparatus, which was a triumph of delicate and ingenious construction, worked on the principle of making the bullet close an electric circuit in its flight, causing a spark to pass just as the bullet passed in front of the camera. The resulting photograph was really that of the bullet's shadow, being perfectly black. The air waves left their trace by refracting the transmitted light just at the crest where the variation of density was greatest. No waves at all appeared when the velocity of the bullet was less than the velocity of sound in air, and the inclination of the wave front to the vertical increased with the velocity of the bullet, both these facts being analogous to those observed when an object travels through water. See the illustration, which is a reproduction of one of Prof. Boys's photographs. Dr. Raps (Berlin Physical Society, Oct. 20) has gone further and photographed the vibrations in organ pipes, not directly, but by means of the displacement caused by the waves in a series of interference bands from an interference refractometer (see LIGHT, below). The results, as recorded on a moving sensitized surface, show sine curves corresponding to the fundamental when the pipe is sounded gently. When it is blown harder, harmonics appear superimposed on this, and finally the harmonics alone appear. Dr. Raps has also shown by this method the characteristic overtones of each vowel as they appear when sung.

**Vibrating Strings.**—The experiments of Raps and Menzel ("Annual Cyclopædia," 1892, p. 637) have shown in their photographic records of the movements of strings that during part of the vibration the velocity of the strings is constant, while during another part they are practically at rest, the photographs showing zigzag lines with straight, flat portions at top and bottom.

**Motion of Sound Waves.**—C. V. Burton (London Physical Society, Feb. 24) shows that always in the case of plane waves, and in all practically possible conditions in spherical waves, the motion involves a surface of discontinuity. If the front of an air disturbance is produced by an impulsion from a moving source, the wave front always moves faster than the source, even if the latter is moving faster than a feeble sound.

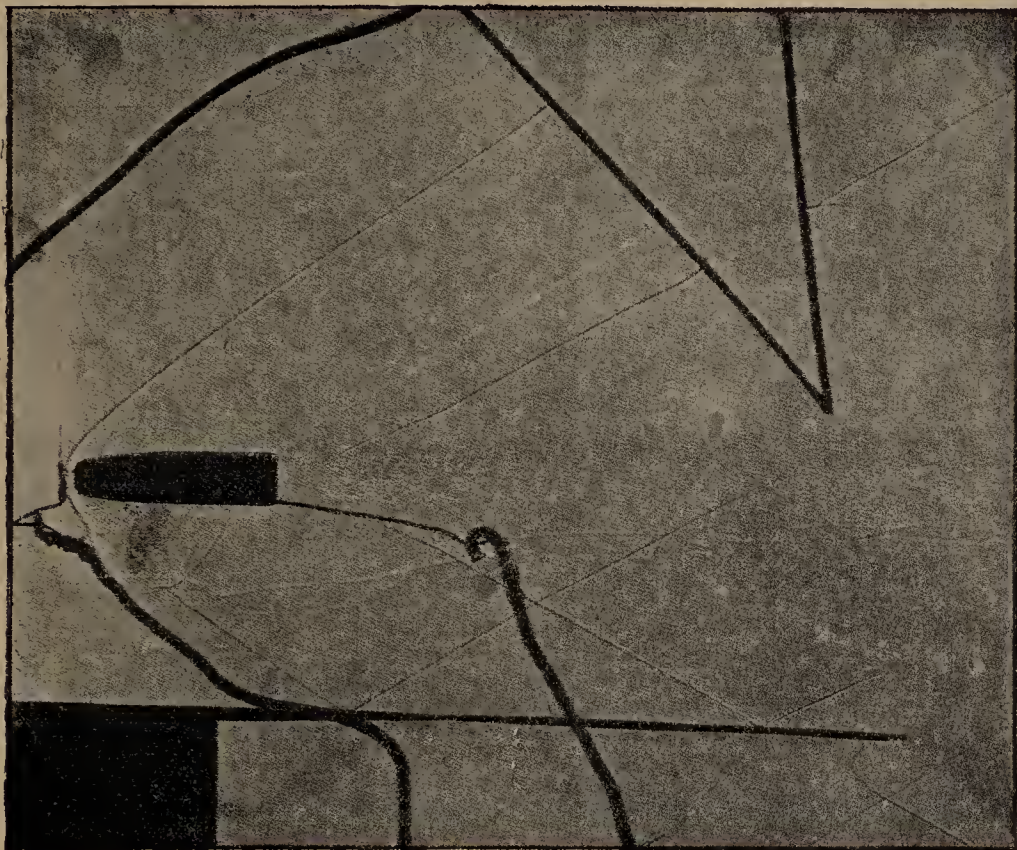
**Light. Diffusion.**—Chr. Wiener (Wiedemann's "Annalen," 12), in experiments on diffusion by rough surfaces, finds that Lambert's law that the brightness of the surface is independent of the angle is not strictly correct, the brightness at the edge of a rough surface being only six tenths that given by the law. At greatest brightness the angle of incidence exceeds that of reflection. W. E. Sumpner (London Physical Society, Dec. 9) thinks that the influence of diffusion in increasing the illumination of rooms and open spaces has not been sufficiently appreciated. In general, the light from the walls is much more important than that received directly, being in some cases twice as great. Ex-



periments on the percentage of light reflected by various diffusing surfaces resulted as follow :

MATERIAL.	Per cent. of light reflected.
Blotting paper.....	82
Cartridge paper.....	80
Tracing cloth.....	35
Tracing paper.....	22
Ordinary mirror.....	82
Ordinary foolscap.....	50 to 70
Tissue paper (one thickness).....	40
Tissue paper (two thicknesses).....	55
Yellow wall paper.....	40
Blue paper.....	25
Dark-brown paper.....	13
Yellow painted wall.....	20
Black cloth.....	12
Black velvet.....	0.4

and 1.2053. Olszewski and Witkowski (Cracow Academy, quoted in "Nature," April 27) have determined the refractive index of liquid oxygen by immersing in it a double glass plate inclosing a layer of air, turning it, and measuring the bright interference fringes at the borders of the field of total reflection. They find the relative index to be 1.2232 and the absolute index 1.2235. In the same experiments they ascertained that the maximum absorption of the liquid is between  $\lambda = 577$  and  $\lambda = 570$  where it is 84 to 89 per cent. for a thickness of one millimetre. P. Joubin (Paris Academy of Science, Dec. 12) thinks that he has established the law



PHOTOGRAPH OF RIFLE BULLET IN MOTION, WITH ACCOMPANYING SOUND WAVES.

The long object at the left is the bullet, moving from right to left. The irregular thick black lines just in front of it and some distance behind it are the waves between which it has just closed the electric circuit that caused the spark that took the picture. The waves are seen stretching diagonally back from the front and rear ends of the bullet. Each consists of a dark line with a light line within it, showing that both waves are waves of compression. The horizontal line near the bottom of the photograph and the V-shaped one at the top are reflectors. It will be seen that the waves are reflected like all similar disturbances, and that in the reflected wave the position of the dark and light lines is reversed, the wave of compression being reflected as a wave of rarefaction.

**Refraction.**—Kayser and Runge (Berlin Academy of Science) have measured the refractive indexes of the atmosphere for every part of the spectrum by the deflection caused by a prism introduced between a Rowland grating and a sensitive plate. For the normal temperature and pressure the indexes are as follow :

A, 1.0002902	F, 1.0002940	H, 1.0002975
D, 1.0002919	G, 1.0002959	N, 1.0003000
		236 $\mu$ , 1.0003217

Livinge and Dewar ("Philosophical Magazine," October) find that the refractive indexes of liquid nitrogen and liquid air are respectively 1.226

that the index of refraction is proportional to the square root of the quotient of the molecular weight by the number of constituent atoms.

**Dispersion.**—Rubens and Snow ("Philosophical Magazine," January) find that the dispersion of fluorite is exceedingly small in the visible spectrum and very great in the infra-red, so that it is peculiarly adapted to the production of heat spectra. It is, moreover, easily worked, and has a very permanent surface.

**Absorption.**—G. B. Rizzo (Turin Academy) has measured the absorption of light by platinum at different temperatures, a transparent



film of the metal being incased in nitrogen to avoid oxidation. He found that as the temperature increased the transparency also increased, so that since electrical resistance also increases with temperature, transparency and resistance increase together, as is required by the electromagnetic theory of light, which thus receives additional confirmation.

*Color.*—Capt. W. de W. Abney (London Royal Society, June 1), in a comparison of natural colors with pigments, finds that the blue of the sky is about wave length 4,800, and that of artists' cobalt about 4,812, so that painters in this case have chosen the proper pigment with remarkable exactitude.

*Effect of Light on Pigments.*—W. S. Simpson, acting on the report of a commission which in 1888 reported that water colors fade only when in contact with air, has devised an air-tight frame in which such pictures may be kept fresh indefinitely. An attached manometer enables a leak to be detected at once.

*Actinometry.*—H. Rigollot ("Journal de Physique," November, 1892) has constructed a chemical actinometer of two plates of oxidized copper in water containing one part in a thousand of a haloid salt of sodium. One plate is exposed to light, and the resulting photoelectric current is measured. On investigating the effects on this instrument of different parts of the spectrum, the inventor finds that it agrees with the eye in being most sensitive to red, not to violet, as are the salts used in photography.

*Polarization.*—Rubens and Du Bois (Berlin Physical Society, June 2) find that heat rays of long wave length are polarized by a grating of metallic wire, just as electro-magnetic radiation is. Such a grating will not polarize light, but the result shows that this is only because of the short wave length of the luminous radiation. The results show also that in the ultra-red waves, as in electro-magnetic waves, the vibrations are at right angles to the plane of polarization. The measurements were made with the bolometer. Emil Hirsch (Wiedemann's "Annalen," No. 3), in experiments on the circular ferro-magnetic polarization of transparent films of iron, nickel, and cobalt, finds that Kundt's constant (the ratio of the rotation of polarization to the increase of magnetization potential from one side to the other) is independent of the temperature.

*Diffraction.*—Gouy (Paris Academy of Science, Nov. 6) has succeeded in obtaining the image of an opaque object by diffracted light alone by intercepting the geometrical rays by a screen near the focus of the object glass. The diffracted rays form an outline of the object traced in a thin bright double line separated by a black interval due to the interference of the rays within the shadow with those without it.

*Photometry.*—Charles Henry (Paris Academy of Science, Jan. 16), in further tests of his phosphorescent zinc-sulphide photometer (see "Annual Cyclopædia," 1892, p. 640), finds that the sulphide emits at any given moment light whose intensity is independent of the intensity and duration of the primary illumination, and of the thickness of the layer, and not varying with the sample examined, thus fulfilling all requisites of a good photometric standard. Prof. A. M. May-

er, of Hoboken ("Philosophical Magazine," August), uses a rotating disk with translucent sectors for the photometric comparison of two lights of different tints on opposite sides of the disk. The result is to produce a nearly white light, which is made to appear quite white by the use of contrast colors. Lights of different tints, as lamplight and daylight, can thus be compared with good results. To the same end Prof. O. N. Rood ("American Journal of Science," September) has devised a photometric method, independent of color, that depends on the shock experienced by the retina when one surface is withdrawn and replaced by another. The two surfaces whose luminosities are to be compared are arranged as halves of a disk. When this is rotated a flickering sensation is perceived unless the luminosities are the same, and this sensation is entirely independent of color. A. P. Trotter ("Philosophical Magazine," July) has devised an improved photometer, using the principle of two screens set at such an angle, or in such a way, that each receives light from one and only one of the sources to be compared, while the observer can see both at once. He employs a plain screen and one in which there are numerous slots, through which the first can be seen. Slots are preferred to holes on account of their symmetry. The best material has been found to be zinc. S. P. Thompson (ibid.) discusses what he calls the vibration principle in photometry—namely, that a more exact measurement can be made when the intensity of one of the compared lights is made alternately greater and less than that of the other. To this end (1) one of the screens may be vibrated, (2) one of the lights may be vibrated, or (3) one of the lights may be caused to vary in intensity. The author puts the principle in practice by mounting the paraffin block of a Jolly photometer on a spring.

*Spectroscopy.*—J. R. Rydberg ("Philosophical Magazine," March) finds that the focal curve that passes through the center of curvature of a Rowland's grating is a circle, but has not the radius of curvature at the apex of the grating as a diameter. It is possible to make the proper adjustments, but the girder on which the telescope moves must be a diameter of the true focal circle. The fact discovered may result from the noncoincidence of the point of symmetry of the grating with the apex of the mirror, or from a systematic variation in the distances between the lines, due to an irregularity in the screw of the dividing engine. Prof. Rowland (ibid., May) has himself investigated irregularities or "ghosts" in his gratings. The effect of small errors of ruling, he finds, is to produce a diffused light around the spectral lines. This is subtracted from the light of the primary line, and its comparative amount varies as the square of the relative error of the ruling and the square of the order of the spectrum. Thus, a periodic error diminishes the intensity of a line, and surrounds it with a symmetrical system of lines called "ghosts," which are found most troublesome in spectrum photography. A periodic displacement of one millionth of an inch in the ruling produces visible ghosts, and sometimes the primary line is replaced by them altogether, but from a formula a table of the ghosts of

any particular grating can be made, so that they need not prevent accurate observation. Crova (Paris Academy of Science, March 27) has investigated the spectra produced by a grating of bichromated gelatin on silvered glass. The interference of the spectrum from the gelatin with that from its reflection in the glass produced straight or curved bands, sometimes of great beauty. No such bands were observed with transparent glass, since its refractive index is the same as that of the gelatin. W. B. Croft (London Physical Society, Dec. 9) has investigated the orders of colors in the so-called Newton's scale. The standard treatises imply that the number of bands in each order is the same as that of the order, but Mr. Croft finds that the first three orders have one band each, and the fourth three bands. The explanation is based on the numerical position of the wave lengths in the visible spectrum—that is, on the answer to the question whether a multiple of one wave length can be a multiple of another. B. W. Snow (Wiedemann's "Annalen," No. 10) has investigated infra-red spectra, using a modified bolometer and a galvanometer with a delicate quartz fiber. In the solar spectrum he finds numerous bands composed of fine lines, as far as wave length 20,620, the principal ones being between 7,000 and 7,700, 7,850 and 8,600, 9,000 and 10,000, 10,750 and 11,600, 13,700 and 15,000. The infra-red spectra of 5 metals—sodium, potassium, lithium, rubidium, and cesium—were examined, and maxima found as follow: For sodium, at 8,180, 11,270, 12,400, and 18,360; for potassium, at 7,670, 10,820, 11,580, 12,250, and 14,610; for lithium, at 8,070; for rubidium, at 7,910, 9,980, 13,120, and 14,760; and for cesium, at 8,380, 8,820, 9,980, 13,270, and 14,530.

*Interference Refractometer.*—This instrument, so named from its first uses, and called also by Michelson in one form a wave compiler ("Annual Cyclopædia," 1892, p. 639), promises to become one of the most valuable physical instruments. In a description ("Nature," Nov. 16) Prof. Michelson asserts that for certain purposes of measurement it surpasses and will supersede the telescope, the microscope, and the spectroscope. This is due to the fact that the limit of accuracy in setting a cross hair of a microscope on a fine-ruled line is about .05 micron, whereas the middle of an interference fringe, if it be broad and clear, can be determined to within  $\frac{1}{30}$  of the width of the fringe, or .01 micron. In actual practice it has been found that the average error is only about .01 of a fringe, or .003 micron. Thus, what is lost in distinctness is more than made up in accuracy in measurements of position. Similar considerations hold in the measurement of angles by the telescope. As a spectrometer, for which the form called a wave compiler is used, the instrument possesses no advantages over the ordinary spectroscope in clearness of definition; its great advantage lies in the ease with which the distribution of light can be inferred in a spectrum beyond the powers of either instrument to resolve perfectly. Not the least of the uses of the instrument is the comparison of material standards of length with that of a light wave, thus furnishing a permanent metrical standard, the same for all parts of the known universe.

**Electricity.** *The Voltaic Cell.*—Elster and Geitel, of Wolfenbüttel ("Zeitschrift für physikalische und chemische Unterricht," quoted in "Nature," Jan. 5), have devised an apparatus for measuring the difference of potential of a cell, based on the principle of Thomson's water-drop influence machine. Two jets enter 2 insulated metal vessels through 2 rings, one of them connected with the positive pole of the cell. The jet is charged negatively, and communicates its charge to the vessel and by induction to the other ring which induces on the other jet a positive charge that accumulates on the second vessel.

*Polarization of Cell.*—Bouty (Société Française de Physique) has experimented on polarization in melted electrolytes, dilute solutions of salts, and solid electrolytes. When a point electrode remains in a melted electrolyte for twenty-four hours it has for a given time a constant initial capacity of polarization which increases rapidly with the time, while the maximum polarization decreases. John Daniell ("Nature," Sept. 28) finds that when thin partitions of metal are immersed in a cell polarization takes place when the thickness of the partition exceeds a certain definite amount. With a current strength of not more than 0.1 ampère per square centimetre this thickness is between 0.00009 and 0.0004 millimetre for gold, and between 0.00015 and 0.0002 for platinum in sulphuric acid, copper sulphate, and common salt.

*Resistance.*—Fernando Sanford, of Leland Stanford University ("Philosophical Magazine," January), shows that the resistance of a metallic conductor varies with the dielectric in the field of force, but that probably only that part in direct contact with the wire is concerned in the action. The resistance of a copper wire in air being taken as unity, the resistance of the same in various dielectrics was as follows: Petroleum, 1.0018; bisulphide of carbon, 1.0009; benzene, 0.9998; absolute alcohol, 0.9981; wood alcohol and petroleum, 0.9973. J. H. Gray and J. B. Henderson (London Royal Society, March 2) have investigated the effect of stress on the electrical resistances of copper, iron, and steel, and conclude that for practical purposes they are not affected thereby. The smallest impurity produces a greater change in resistance than the severest treatment, an impurity of 0.4 per cent., for instance, lowering the conductivity by 13.5 per cent. As the result of experiments made at the Physikalisch-Technische Reichsanstalt, Berlin ("Nature," Jan. 5), a mercury standard resistance has been constructed that requires no renewal. V-tubes are filled with mercury *in vacuo*, sealed by fusion, and into each end are fused three platinum wires, connecting respectively with the main circuit, the secondary circuit, and the galvanometer. The wire is so thin that it conducts practically no heat. Each standard is immersed in petroleum in a brass box, and the box is placed in ice and water. Van Aubel ("Journal de Physique," September), in experiments on the resistance of bismuth, finds that neither sudden cooling nor compression affects it much. When the metal is pure, the resistance increases with rise of temperature, and this increase is regular between 0° and 100°, but a trace of impurity alters the property.



*Thermo-electricity.*—Henri Bagard, of Nancy (Paris Academy of Science, Jan. 2), has measured the thermo-electric force between parts of the same electrolyte in different stages of dilution, the parts being separated by a diaphragm of goldbeater's skin. With a 5-per-cent. solution and one of 45 per cent. the difference of potential varied from 78 at a temperature of  $17.9^{\circ}$  to 155 at  $73.5^{\circ}$ , the unit being 0.0001 of a Daniell cell. Three couples respectively of 5 and 25 per cent., 25 and 45, and 45 and 5 gave no deflection, showing that the law of intermediate bodies is fulfilled.

*Alternating Currents and Discharges.*—John Trowbridge ("American Journal of Science," September) has photographed the discharge of a current having 300 to 400 alternations per second, using a rotating mirror. The interval between the oscillations of the discharge was 0.00001 second. On each photograph 10 to 12 oscillations could be counted; after that there was a brush discharge. On intercalating a non-inductive water resistance and a vacuum tube, effects similar to those of the aurora were observed (see below). A. A. C. Swinton ("Philosophical Magazine," September) attached to one electrode of an alternating circuit of high frequency and potential a flat tin dish containing a half-inch layer of resin oil, and to the other a wire with its extremity 3 or 4 inches above the oil. The oil bubbled and foamed violently and crept up the sides of the dish, probably from the repulsion of air particles. Water did not act in this way, but showed an octopuslike branched spark. I. Pupin (ibid., April) obtains an alternating current of constant and easily determined frequency by means of a transformer whose principal circuit has for an interrupter a vibrating wire stretched between the pole pieces of two permanent horseshoe magnets, and having at its center a short wire dipping in a mercury cup. The tension is altered till its note is in unison with that of a fork of known pitch.

*Brush Discharge.*—Harvey and Hirsch ("Philosophical Magazine," July) find that in air and in oxygen positive electricity passes in brush discharge from a point to a neighboring conductor more readily than negative, while in hydrogen the opposite is true.

*Electro-magnetic Radiation and Oscillation.*—Augusto Righi (Academy of the Lincei) finds that ebonite, paraffin, and rock salt are perfectly transparent to electro-magnetic waves. Mica 1.7 millimetre thick absorbs 10 per cent.; glass 8 millimetres thick, 37 per cent.; and quartz (normal to the axis) 8 millimetres thick, 40 per cent. Reflection from paraffin indicated that the plane of polarization was at right angles to that of the electric force; from metal, that it was parallel. The refractive index of a paraffin prism was found to be 1.4. Bjerknes (Wiedemann's "Annalen," No. 9, 1892) finds that different metals have different absorptive powers for electric waves, increasing with electric resistance and magnetization. Iron and nickel show a marked damping effect. Sarasin and De la Rive ("Archives des Sciences Physiques et Naturelles") find that a circular resonator has a constant wave length to which it responds whatever be the dimensions of the oscillation; the strength of the induced spark only varies, attaining a

maximum for a certain length of oscillation. One half the wave length of such a resonator is equal to twice its diameter. They find also that in normal reflection from a metal mirror the first node is exactly on the surface. T. H. Blakesley ("Philosophical Magazine," May) shows that the ordinary equations of the discharge of a Leyden jar do not account for radiation, the assumption being that all the energy is expended in heating the circuit. He finds that the work is divided between the circuit and the field in the ratio  $R : \lambda$ , where  $R$  is the resistance and  $\lambda$  a quantity (constant or variable) depending, among other things, on the frequency. Thus, as the frequency increases, more and more energy is expended in the field. Janet ("Journal de Physique," August) finds that in a condenser with solid dielectrics, under the influence of rapid electric oscillation there is a lagging of the charges behind the differences of potential, or, in other words, for equal differences of potential the charges are smaller with increasing than with decreasing potential. R. Colson (Paris Academy of Science, Nov. 14) has experimented with a Ruhmkorff coil vibrating 130 times a second, with one terminal of which was connected a copper wire ending in a hook to which was suspended a linen thread 3 metres long, soaked in copper chloride, the lower end hanging free. A telephone connected with the thread ceased to give any sound at certain points. When both ends of the thread were put in connection with the terminal by fine copper wires two nodes appeared. When the thread was shortened these coalesced, forming a zone of extinction, which spread over the copper wires as the thread approached zero. This was apparently due to the interference of two waves meeting from opposite directions. G. H. Barton (British Association) finds that electro-magnetic waves in wires can be made to exhibit phenomena analogous to those of Newton's rings. Ludwig Boltzmann (Wiedemann's "Annalen," No. 1) removes an apparent contradiction between Maxwell's theory and Hertz's observations that even excessively thin metal plates do not transmit waves a few decimetres long, by showing that this is due to limiting conditions at the surface, which are deducible from Maxwell's formulæ. Patterson and Arnold ("American Journal of Science," November) call attention to a common ambiguity in stating the frequency of an alternating current, consisting in confusing the frequency of impulse with the frequency of oscillation. The latter depends on self-induction and capacity, and while the number of impulses per second is the same as in the primary coil, the number of oscillations may be greater or less. Nikola Tesla, in a lecture (Franklin Institute, Feb. 24) states that single-wire transmission is now practicable for a high electro-motive force and great frequency. Transmission without wires was also discussed, and, among the conditions, the possibility of ascertaining the earth's capacity. This could be done, the lecturer said, if we could find the period of oscillation of the earth's charge. If the earth were perfectly insulated its capacity would probably be less than a farad.

*The Hall Effect.*—Basset ("Nature," May 11), in a review of recent work, says that there seems

to be a fair amount of evidence that the Hall effect is intimately connected with the action of a magnetic field on light, though further evidence is required before it can be asserted that both are due to the same ultimate cause. He suggests as a desirable line of experiment the investigation of the effect of an electrified conductor on light reflected from it. Kundt (Berlin Physical Society, March 10), employing transparent films of iron, nickel, and cobalt, magnetized to 28,000 units, finds that the Hall effect increases with the rotatory power, and therefore with the magnetization. E. Lommel (Wiedemann's "Annalen," No. 12, 1892) remarks that iron filings on a plate arrange themselves along the lines of force, which are also equipotential lines, and therefore are at right angles to the lines of flow. If the plate is placed in a magnetic field these all change position, hence the Hall effect.

*Discharge in a Gas.*—J. J. Thomson ("Philosophical Magazine," October) remarks that the behavior of gas to the electric spark is analogous to that of a vapor condensing to liquid, to the freezing of a liquid, or to the deposition of crystals from a saturated solution. When a foreign substance, as water vapor, is present the potential difference supportable without discharge is approximately steady, but when the gas is carefully dried this difference becomes abnormally large. When the discharge once starts it falls to the normal at once, but if the gas is allowed to rest, still remaining dry, it rises again. These phenomena seem to point to the formation during a discharge of a modified form of the gas, perhaps by condensation of molecules to complex forms, which is hastened by nuclei, just as is the physical condensation of vapor to liquid.

*Phenomena of Exhausted Tubes and Rarefied Gases.*—Wiedemann and Ebert (Wiedemann's "Annalen," No. 9), discussing luminous phenomena in rarefied gases without electrodes, conclude that these are due to the displacement of tubes of electric force. Any metal plate, they say, in contact with a rarefied gas and exposed to slightly damped electric oscillations shows all the phenomena of a cathode. John Trowbridge ("American Journal of Science," September) concludes similarly that the aurora is due not to electric oscillations, but to the redistribution of lines of force produced by suitable earths. Leonard (Berlin Academy) caused the rays from an aluminum cathode to be projected on an aluminum window .003 millimetre thick, in a thicker plate. The rays passed through it and made the air faintly luminous with a bluish light, producing also a smell of ozone. Phosphorescent bodies glowed in the path of the transmitted beam as *in vacuo*. At a distance of 2.4 inches from the "window" it ceased to act thus, but its penetration varied for different gases. E. Goldstein (Berlin Physical Society, Dec. 16, 1892) finds that the anodic light of silver is brighter than that of aluminum. At the cathode the reverse is true. The effect is only seen in oxygen, and appears due to oxidation of the silver. Rimington and Wythe (London Physical Society, Nov. 25) find that when electrodeless tubes and bulbs are rotated in a constant electric field, a double fan-shaped image results, not symmetrical but displaced in the direction of rotation. This is a

direct transformation of mechanical energy into light. A. A. C. Swinton ("Philosophical Magazine," September) wound a vacuum tube with three turns of copper wire in a coarse spiral, one end of which was connected with a high-frequency induction coil, the other being free. Inside the tube appeared a blue spiral corresponding to the wire, but half a turn in advance of it. This he accounts for by the repulsion of the residual air within and consequent bombardment of the glass just opposite the wire. E. C. Rimington (London Physical Society, April 28) concludes that the luminous rings observed in exhausted bulbs and tubes when Leyden jars are discharged through coils around them are due rather to rapidly varying magnetic induction than to electrostatic action. When two loops are used so arranged that the electrostatic effects balance while the magnetic effects re-enforce each other, the luminous phenomena become brighter, while they disappear when the inverse arrangement is adopted.

*Dielectrics.*—G. Benischke (Vienna "Berichte," April 13) finds that the dielectric constant is independent of the strength of the electric field. He finds the constant to be: For paraffin, 1.89; for ebonite, 2.03; for sulphur, 2.42; and for glass, 4.17 to 4.52, the value for plate glass being 3.85. P. Janet (Paris Academy of Science, Feb. 20), in experiments on dielectric viscosity of mica, by comparison of the differences of potential and resulting charges during rapid oscillation, finds that the charges lag behind the corresponding potential differences analogously to Ewing's curves of magnetic hysteresis. Charles Borel (*ibid.*, May 23) suspended a disk of paraffined paper by the center before a plate which was charged alternately positively and negatively at intervals of 0.006 second. When an earthed glass rod was held between and on one side, the disk rotated, owing apparently to the mutual action of residual charges. With a conductor or a good insulator there was a feeble rotation in the opposite direction.

*Condenser.*—P. Curie (Société Française de Physique) has constructed a very perfect condenser of two plates of silvered glass separated by three blocks of quartz. The center was separated from the guard only by a narrow line from which the silver was removed.

*Electrolysis.*—W. C. Dampier Whetham (London Royal Society, Nov. 24) has measured ionic velocities in electrolysis by the motion of the junction between two salt solutions of different density and different color when the current was passed across it. The following are his results, compared with values calculated by Kolbaum from the electrolytic conditions of solution, with Hittorf's values of the migration constant:

SOLUTIONS.	Observed.	Calculated.
AQUEOUS SOLUTIONS:		
Copper. . . . .	{ .00026 .000509 }	.00081
Chlorine. . . . .	{ .00057 .00059 }	
Bichromates (group Cr <sub>2</sub> O <sub>7</sub> ) . . .	{ .00048 .00047 .00046 }	.000473
ALCOHOLIC SOLUTIONS:		
Cobalt chloride . . . . .	.000048	.000060
Cobalt nitrate . . . . .	.000079	.000079



*Color of Ions.*—Ostwald ("Journal of the Chemical Society," October, 1892), in experiments on the color of ions, finds that the spectra of dilute solutions of salts having the same colored ions are identical; for example, the permanganates give the same values for the absorption bands whatever the base.

*Electric Heating.*—Henri Moissan (Paris Academy, May 29) has succeeded in distilling the most refractory substances by the heat of the voltaic arc. Quartz and zircon were fused almost instantly, boiled in a few moments, and finally vaporized; tungsten was cast in ingots. Again (*ibid.*, June 12) 30 grammes of copper were volatilized in five minutes; silver distilled easily, condensing chiefly in globules varying from microscopic dimensions to the size of small shot, but partly in arborescent fragments. Platinum, aluminum, and tin were also distilled, the last condensing partly in a curious fibrous form. The distillation of gold is peculiarly interesting, the metal condensing in powder of beautiful purple sheen to the naked eye, but appearing under the microscope as minute spheres of the usual yellow color. On the cover of the furnace three annular deposits were found, of which the inner consisted of yellow globules of considerable size, the next of smaller ones, deep red, the outer of a purple sublimate. Carbon is first converted into graphite and then distills over, condensing in light semi-transparent brown plates, seeming to constitute a distinct allotropic variety. Even refractory alkaline earths, like magnesia and lime, have been distilled by this process. J. Violle (*ibid.*, Dec. 26, 1892), from calorimetric measurements with part of the carbon detached from the hottest part during the passage of the current, finds the temperature of the voltaic arc (and therefore that of the volatilization of carbon) to be 3,500°. This remains constant, no matter what power is employed. Lagrange and Hoho (Bulletin of the Belgian Royal Society, No. 2) produce an arc by using a graphite electrode in sulphuric acid. A layer of gas forms around the electrode, and since nearly the whole resistance is concentrated here, the whole of the energy is transformed into heat there. The temperature depends only on the strength of the current. By this process the heating is not only intense but rapid. When one electrode is a bar of steel one centimetre thick (Paris Academy of Science, March 13), the other having a large surface, it was found on breaking the current that the liquid, cooling the bar, had imparted a brittle structure only to a superficial layer, the rest not having been heated. J. Klemencic (Vienna "Berichte," March 16) has investigated the heating effect of electric vibrations and concludes that the resistance to the passage of very rapid vibrations depends on the magnetizability and the kind of wire.

*Photo-electricity.*—E. Branly (Paris Academy of Science, April 20) finds that a disk of polished aluminum slowly loses its charge, and that this loss is equal for positive and negative charges and independent of the kind of light. If the disk has been freshly polished the loss is rapid even in diffused light, and is only slightly diminished by orange glass. From experiments on the effect of light on silver (Asiatic Society of Bengal, May), it appears that sunlight has an oxidizing effect on that metal, whether in acids

or in alkalies, and that the exposed plates become relatively positive.

*Phenomena in Solutions.*—G. H. Zahn (Wiedemann's "Annalen," No. 4) finds that when a current is passed across the boundary between two solutions of different degrees of concentration, there is an alkaline reaction above the boundary in the dilute solution, in case the current passes from the concentrated to the dilute, and a deposition of solid hydrates. The salts experimented with were those of barium, strontium, aluminum, iron, manganese, and zinc.

*Magnetic Action of Induced Currents.*—Elihu Thomson ("The Electrician") has discovered an apparent attraction of a copper disk by an alternating magnetic pole when the diameter of the disk is smaller than that of the pole. At some distance from the pole the disk is repelled, but the repulsion diminishes as it moves nearer, and finally gives place to attraction. The explanation is that the induced currents in the disk, on account of its small diameter, do not suffer so great a lag as those in the rings that surround the pole; hence the repulsion is finally overcome by the attraction between the currents in the disk and the iron core.

*Piezo-electricity.*—Dr. G. Gore ("Philosophical Magazine," February) finds that when a long vertical tube is filled with an electrolyte a current traverses it. When the tube is reversed the current reverses, and there is no current when the tube is horizontal. The effect varies with the liquid and with the metal employed for the electrodes, being greatest with zinc and potassium chloride. In 91 trials, 41 currents were obtained, of which 39 were upward and 2 downward. It was proved that difference of pressure without difference of altitude would give rise to a current, and that the effect was not due to thermoelectricity. In all cases the current results not only from a difference of electro-motive force, but primarily from the influence of pressure on the electric potential of the metal alone and the liquid alone. There seems to be a direct transformation of mechanical into electrical energy, and a discovery of its mechanism would doubtless be a solution of the whole question of electro-motive force. A. P. Chattock (*ibid.*, December, 1892) thinks that the phenomena of pyro- and piezo-electricity are accompanied by relative motion of two sets of initially and oppositely charged molecules distributed throughout the crystal, and concludes that chemical affinity and ionic attraction are possibly the same. Kelvin (*ibid.*, October) has constructed a piezo-electric pile of 24 double plates of zinc and copper resting at the corners on India rubber. When the poles are connected with a galvanometer and a weight is allowed to fall on the pile, a considerable deflection results. The author (*ibid.*, November) suggests that a model of a crystalline molecule might be thus constructed.

*Effect of Points.*—Julius Precht (Wiedemann's "Annalen," No. 5) finds that points may be charged very highly, a lightning conductor taking 15,000 volts and the finest points 2,500. The ultraviolet rays favor such charge, but it is diminished by dust. A bundle of equal points requires a higher potential than a single one.

*Magnetism.* *Magnetization.*—H. Lehmann (Wiedemann's "Annalen," No. 3) has investi-

gated the magnetism of iron rings slit radially. The slit was 0.4 to 3.57 millimetres wide, and the strength of the magnetic field 1 to 300. He finds the demagnetizing factor constant up to about one half saturation, and the coefficient of dispersion—that is, the ratio of the mean induction to that at the slit—constant to the same point. The coefficient increased with the width of the slit, and finally decreased with increased intensity of the field, but was independent of the radius of the ring. The region of dispersion of force lines was limited essentially to the vicinity of the slit, and was narrower as the magnetization increased. G. M. Minehin ("Philosophical Magazine," August), in treating of the magnetic field of the electric current, states that its magnetizing effect is not the same at points near the surface of the conducting wire as if the whole current were concentrated in a thin filament at the center of the wire. Such an assumption is allowable only when the wire is straight or when it makes a curve of very large radius. Prof. Ewing and Miss Klaasen (London Royal Society, June 1), in experiments with Ewing's magnetic curve-tracer ("Annual Cyclopaedia," 1892, p. 642), find among other results that the time lag in soft, thick bars is immensely great. The work spent per cycle is a maximum at a particular frequency, which in such bars is very low. Heydweiller ("Sitzungsberichte der Würzburg Physical Society," March 11) proves the existence of a Villari point in nickel hitherto unknown. The magnetization used was very feeble, and the observing device very sensitive. The magnetization under 2 C. G. S. units shows a decrease with the smallest loads and an increase with the larger. The point seems to be between 765 and 246 grammes of load for  $I = 0.97$ .

**Magnetism of Oxygen.**—Dewar, in a Royal Institution lecture ("Nature," May 25), placed liquid oxygen in a cup of rock salt and drew it up with a magnet till the poles were connected by the liquid. Liquid air acted in like manner, but the oxygen and nitrogen were not separated by the action of the magnet. P. Curie (Société Française de Physique, April 21) finds that the magnetic permeability of oxygen is constant for forces varying between 200 and 1,350 units and pressures of 5 to 20 atmospheres. Between 20° and 450° it varies inversely as the absolute temperature.

**Chemical Action in a Magnetic Field.**—Lieut. G. O. Squier, U. S. A. ("Philosophical Magazine," June), finds that when iron is exposed to chemical action in a magnetic field there are two opposite effects: (1) A protective effect due to the direct influence of magnetism on the metal, and (2) the concentration of products of the reaction about the more strongly magnetized parts of the iron, tending to produce higher potential, and finally establishing permanent electric currents.

**Diamagnetism.**—P. Curie (Paris Academy of Science, Jan. 23) has measured the permeability of a series of diamagnetic bodies by inclosing them in an exhausted glass vessel exposed to a magnetic field and then repeating his experiment with the glass alone. Most of the bodies examined showed a constant coefficient, water and quartz not varying perceptibly with the temperature. That of potassium nitrate was the

same for the solid and the liquid form, but that of bismuth fell till the point of fusion (273° C.) was reached, when it suddenly dropped from .957 to .038, and then remained constant. Prof. Fitzgerald (London Physical Society, Oct. 28) says that diamagnetism corresponds to electrostatic induction, but that paramagnetism has no definite electric analogue, and is probably connected with an arrangement of material molecules, while diamagnetism depends on their electric charges.

**Magneto-rotatory Phenomena.**—Kundt (Berlin Physical Society, Feb. 10) has observed the change of magnetic rotatory power in metallic films with change of temperature. With nickel there was no change at first with rise of temperature, but above 300° there was a sudden diminution, which became greater as the temperature continued to rise, its relation to increase of temperature being the same as for the magnetic susceptibility of the metal.

**Residual Magnetism.**—Ewing ("Philosophical Magazine," October, 1892), in experiments on the influence of joints in reducing residual magnetism in iron, finds that the division of a ring 30 centimetres long into two half rings abutting against each other, with smooth joints, reduces it from 9,000 to 6,000.

**Magnetic Viscosity.**—Hopkinson, Wilson, and Lydall (London Royal Society, April 20) find that after a sudden change of the magnetizing force the induction sometimes does not attain its full value for several seconds, and that the difference between a ballistic curve of magnetization with complete cycles and a curve with considerable frequency is due to a true time effect.

**Miscellany. Magnetic and Electric Instruments.**—G. Quincke (Wiedemann's "Annalen," No. 1) has devised a novel form of instrument, which may be used either as a tangent galvanometer or as a magnetometer. A glass disk is supported vertically, and around the rim wires are clamped. In a hole in the center is a mirror with a magnet. This device has the advantage of great simplicity.

**Dimensional Units.**—Ostwald ("Journal of the Chemical Society," October, 1892) suggests the use of energy as a dimensional unit. The result would be in the direction of simplification, as the following table shows:

QUANTITIES.	Old dimensions.	New dimensions.
Energy.....	$m^{-2}t^{-2}$	$e$
Mass.....	$m$	$el^{-2}t^2$
Momentum.....	$mt^{-1}$	$el^{-1}t$
Force.....	$mt^{-2}$	$el^{-1}$
Surface tension.....	$ml^{-2}$	$el^{-2}$
Pressure.....	$ml^{-1}t^{-2}$	$el^{-3}$
Action.....	$ml^2t^{-3}$	$et^{-1}$

**Universal Reduction of Dimensions.**—J. Delbœuf (Belgian Royal Academy, No. 6) discusses what would happen if the entire universe were reduced proportionately in dimensions. It has been urged that such a process would not be perceptible to us, since all our means of estimating size are only relative, and hence, for aught we know or ever can know, the universe may be expanding or contracting at any rate of speed. But M. Delbœuf shows that we would have several ways of detecting such a change. For instance, if the universe should shrink to half its



present linear dimensions, work done, being proportional to mass and the square of length (see table above), or (since mass is proportional to the cube of length) to  $l^6$  would be reduced  $\frac{1}{32}$ , whereas muscular power being proportional only to mass, or to  $l^3$ , would be reduced  $\frac{1}{8}$ . We could therefore lift four times as much weight as before. From similar considerations he shows that the velocity of sound would be changed, and that life altogether would become more rapid. In short, real space differs from geometrical space, and all its properties can not be increased or diminished at once in the same proportion. M. Delbœuf's critics, however, assert that he has not gone far enough. For instance, he has forgotten to take into account the molecule in his calculations. The distances between molecules must be affected by the assumed proportionate shrinkage; in other words, all bodies must be supposed to grow denser, and this would affect his results. It is claimed, therefore, that the outcome of this interesting discussion is to leave matters in the same status as they were before—that is, a state of ignorance on our part as to whether the universe is expanding, shrinking, or standing still.

*Registering Instruments.*—A. Blondel (Paris Academy of Science, April 10) generalizes all registering instruments by saying that all consist of a movable piece capable of displacement by a force proportional to the physical quantity to be measured, and opposed by a force proportional to the displacement, by the inertia of the moving parts, and by a damping force usually proportional to the velocity. The desideratum is that the periodic motion of the moving piece should follow a law as closely approximating that of the phenomenon as possible, so that the deflection shall at any instant depart as little as possible from a value equal to the ratio of the force to be measured and the opposing force. The problem of how best to attain this he calls the problem of integral synchronization.

**PHYSIOLOGY.** In his British Association address on biology last summer, Prof. Burdon Sanderson, after reviewing the early history of physiology, said that as a science it first became endowed with vitality by the labors of five great experimentalists—Brücke, Du Bois-Reymond, Helmholtz, and Ludwig in Germany, and Claude Bernard in France. By each and all of them it was recognized that, complex as the phenomena of life are, they may be to a large extent, if not wholly, referred to and explained by well-known chemical and physical processes, rendering it unnecessary to invoke any new force for their manifestation; and hence the analysis of a vital process into its physical and chemical constituents brings these constituents into measurable relation with physical or with chemical standards, which is the only mode of investigating them that can lead to satisfactory results. Thus, if muscular contraction be the subject on which we seek for information, it is obvious that, in order to measure its duration, the mechanical work it accomplishes, the heat wasted in doing it, the electro-motive force which it develops, and the changes of form associated with these phenomena, special modes of observation must be used for each of them, and each measurement must in the first instance be separately made under special conditions and

by methods specially adapted to the required purpose. Nor is this sufficient. The guidance of experiment must again be sought for the purpose of discriminating between apparent and real causes and of determining the order in which the phenomena occur. The speaker then discussed the question of the specific energies of the organism, or the special action which each part performs, illustrating it by examples drawn from the eye and visual perceptions. From this he passed to the subject of physiological or experimental psychology, a borderland between two methods of questioning that are closely related, the results of which tend to show that the processes concerned are as truly functions of organism as the contraction of a muscle or the changes produced in the retinal pigment by light. Although this branch has, in the opinion of Prof. Sanderson, no technical action, it has exercised, and will exercise in future, a helpful influence on the science of life. He next considered the influence of light in directing the movements of freely moving cells—called phototaxis—and similar phenomena in which the directing cause of movement is not physical but chemical, which are grouped under the general heading of chemiotaxis. This property was familiar in pathology as a constituent phenomenon of the process of inflammation long before it was understood. The hypothesis by which its explanation was attempted gave way to this as soon as it was made clear by Pfeffer. Only one principle—that of adaptation—separates biology from the exact sciences, and the author insisted “that organism is a fact which encounters the biologist at every step in his investigations; that in referring it to any general biological principle, such as adaptation, we are only referring it to itself, not explaining it; and that no explanation will be attainable until the conditions of its coming into existence can be subjected to experimental investigation so as to correlate them with processes in the nonliving world.”

**Respiration.**—Is the high temperature in cases of febrile disease, asks Prof. Rosenthal, of Erlangen, the result of greater heat production? Are we to assume that certain poisons taken into the body or produced in it by microbes stimulate the nervous system, or directly influence the tissues in such a way as to cause greater oxidation, and thus to produce more heat? That is the opinion of many medical men, but it is met with the great difficulty that neither the expiration of carbonic acid nor the excretion of oxidized nitrogenous matter is increased in so great a degree as to account fully for the rise of temperature. Therefore Traube suggested that the rise of temperature in fever is caused not by greater heat production, but by greater retention of heat. Experiments by the author in producing fever in animals by the injection of various putrid substances gave results directly in accord with Traube's theory. Yet he can not say that heat production is never augmented in fever. There are great difficulties in the way of making satisfactory experiments on man. In a few cases—including one in intermittent fever, some in abdominal typhus, some in pneumonia, and some in cases of fever caused by the injection of Koch's tuberculin—he found a small but real augmentation of heat

production, and is therefore inclined to suppose that the question is not yet solved. On measuring the heat production of the same animal in cold and warm air, the author found it smallest in air of medium temperature, becoming greater in lower and in higher temperatures. In this case regulation of the animal temperature can be effected only by changes of the coefficient of emission of heat from the skin caused by changes of circulation. But for longer periods that regulation is insufficient. Animals produce more heat in winter than in summer. If nourished with the same food—sufficient to maintain their weight constant in winter—they do not oxidize the whole in summer, and therefore they gain in weight. Richly nourished animals produce less, sparsely nourished animals more heat than the calculation gives. Between the cases is a third one—in animals sufficiently nourished, or such as take in as much nutriment as serves to maintain their weight unchanged for a long time. In their case only, the amount of heat produced is really equal to that calculated upon the combustion of the constituents of food. But in these cases also variations are observed, caused by changes of temperature, muscular motion, etc. Thus, if a well-nourished animal is starved, the heat production remains unchanged for three or four days, the animal burning its stored-up materials and losing much of its weight; only then is it suddenly reduced to a lower amount. If now food is given again, heat production remains small, the weight increases, and then three or four days later the heat production increases and reaches its former amount. If a sufficiently nourished animal takes in all its food once a day the heat production varies very regularly in the twenty-four hours. Similar changes go on in the expiration of carbonic acid.

A committee of the British Association report on the physiological action of the inhalation of oxygen in asphyxia, that in the case of asphyxiated rabbits oxygen is of no greater service than air; that pure oxygen when inhaled by a healthy man for five minutes produces no effect on the respiration or pulse; that oxygen produces no effect upon a patient suffering from cardiac dyspnoea, either on respiration or on the pulse; that an animal can be kept for a long time in a chamber containing 50 per cent. of carbonic acid without a muscular collapse, provided a gentle stream of air or oxygen be allowed to play upon the nostrils.

Fishes in badly ventilated aquaria give various signs of oppression, such as restlessness, frequent gasping, mounting to the surface, leaping into the air, etc. Experiments have been made by Duncan and Hoppe-Seyler to ascertain to what point the oxygen content of the air may be lowered before fishes indicate uneasiness. They were made with tench, trout, and crawfish in an elliptical glass vessel, with pipes for injecting and removing water and air, etc. In one case a pipe communicating with a chamber in which was a live rabbit conveyed to the fishes air impoverished by the latter's breathing, while the behavior of rabbits and fishes in the same air could be compared. With from 4 to 3 cubic centimetres of oxygen in the litre of water the fishes seemed well and content, and with the corresponding oxygen tension in the

air (8 to 11 volume percentage) the rabbit was in no difficulty. With from 1·7 to 0·8 cubic centimetres of oxygen in the water the trout were evidently ill at ease, and if the condition continued they died. The tench and crawfish, however, stood still further reductions, the former finding relief at the surface. Reduction of the oxygen to zero soon produced the worst results.

Speaking in the Physiological Society of Berlin on heat regulation in man, Prof. Zuntz said that the store of heat in the human body is at any one time very large—equal, in fact, to nearly all the heat produced by the body during twenty hours; hence the heat given off to a calorimeter during a given period can not be taken as a measure of the heat production. This determination must be based rather upon the amount of oxygen consumed than of carbonic-acid gas given off. Experiments were made to ascertain what alteration the gaseous interchange of the body undergoes by the application of cold. The observations were made on a number of men whose respiratory gases were compared during rest, when they were at one time clothed, at another time naked, at different temperatures, and in warm and cold baths. Each experiment lasted from a half hour to an hour. The results exhibited great diversity, which was explained by the author's own subjective heat sensations when he was himself the person experimented on. After the first impression due to the application of cold was overcome, he found it easy to maintain himself in a passive condition; subsequently it required an effort of the will to refrain from shivering and throwing the muscles into activity, and finally even this became no longer possible, and involuntary shivering and muscular contraction supervened under fall of bodily temperature. During the first stage of cooling his oxygen consumption showed a uniform diminution; during the period also in which shivering was repressed by an effort of the will cooling led to no increased consumption of oxygen; but as soon as shivering became involuntary there was at once an increased using up of oxygen and excretion of carbonic acid. This may be taken as showing that in man, and presumably in all large animals, heat regulation as dependent upon alteration (fall) in temperature of the surrounding medium does not exist. The increased heat production is rather the outcome of the movements resulting from the application of cold to the body. In small animals there undoubtedly exists a heat regulation dependent upon an increased activity of chemical changes in the tissues set up by the application of cold to the surface of the body.

**Circulation.**—An investigation has been made by M. Potain to obtain the interpretation of the cardio-pulmonary sounds resulting from the movements communicated to the lung by the heart, and the local phenomena produced by these movements. The general movement, as indicated by the tracings, is during systole a rapid retreat of the surface and an equally rapid translation to the right; that is, in fact, the well-known torsional motion. At the end of the ventricle the retreat is only effected toward the end of the systole. At the beginning of diastole the whole wall rapidly collapses; it then rises, slowly at first, as the blood gradually



enters the ventricle, and then rapidly, when the systole of the auricle takes place. On comparing these trajectories with the sounds heard in man, and sometimes also in animals, it is found that their amplitude is greatest when these sounds are most intense and frequent, that their direction is that calculated to produce in the lung a rapid aspiration during systole, and that the rhythm of the sound is itself in correspondence with the variations of speed of the movement. The relation thus discovered solves a complex problem of auscultation.

In the study by C. S. Sherrington and S. Monckton Cope of the variations experimentally produced in the specific gravity of the blood, the method employed determined only the specific gravity of the blood considered as a mixed and complicated whole. What particular factor, or factors, in each case caused an alteration in the specific gravity remains to some extent a matter of conjecture. The alteration might be due to one, or two, or all, of the following causes: An increase or diminution in the number of corpuscles in a given volume, the specific gravity of individual corpuscles and of the plasma remaining unchanged; an increase or diminution in density of the plasma, the specific gravity and the number of the corpuscles remaining unaltered; or a simultaneous increase or diminution in density both of corpuscles and plasma, with or without alteration in the number of corpuscles in a given volume of the blood. When a quantity of normal saline solution is injected rapidly into the circulation, the specific gravity of the circulating blood is at once diminished, but the diminution persists for a short time only. It is attributed to the speedy escape from the circulation of the saline injected. Repeated injections of small quantities of saline solution into the vascular system do not perceptibly lower the specific gravity of the blood unless the interval of repetition be very small relatively to the amount injected. And even in the latter case no permanent dilution of the blood is brought about. By continued injection the blood of the rabbit may be kept for more than an hour at a degree of dilution nearly amounting to what would be reached by admixture with it of an equal volume of water, and this dilution is maintained without production of devious signs of circulatory, respiratory, or nervous distress. By observation of the alteration of specific gravity a means is obtained for gauging the volume of blood in the circulation of the animal receiving the injection. This volume in a well-fed adult rabbit, dog, or monkey appears to be somewhat less than 7 per cent. of the total weight of the body. The authors attempted to repeat the classical observation that during a period of prolonged fasting the blood shares but slightly in the wasting of bulk undergone by the tissues of the body as a whole. The conditions that influence the passage of water through living animal membrane are intimately dependent upon characters associated with the membrane considered as protoplasm, or material endowed with life. Toward the end of a long experiment it is extremely common to find that the specific gravity of the blood becomes lower, and when death occurs this diminution may amount to 2 or 3 units in the third place of decimals. The explanation of this is not clear, but

there are considerations that may throw light upon it, such as the appearance of local differences in specific gravity very soon after death and the clotting that rapidly sets in in the larger vessels. The slightest pressure on the splenic vein induces a rise in the specific gravity of the blood, the accompaniments of which are similar to the symptoms which surgeons associate with shock. A considerable quantity of water can be transferred from one part of the body to another, presumably by means of the circulation, without any obvious dilution of the blood. The effect of withdrawing any considerable quantity of blood from the circulation is to make the remaining blood poorer in solid matters. Notwithstanding the observations of Lloyd Jones and J. G. Otto, the authors have found the differences in the specific gravity of venous and arterial blood so slight as to leave the existence of an actual difference doubtful. That the important factor in the inspissation of blood in an area of obstructed venous flow is not the mere distention of the capillaries and venous radicles and veins, and the heightened pressure in them, seems indicated by the very different effect on the specific gravity which section of the cervical spinal cord occasions. Such section causes venous congestion of the great splanchnic region of the circulation. Yet so far from giving an increase in the specific gravity of the blood, it is an operation followed by a fall in the same. Local differences are observed in the specific gravity of the blood, and seem to be connected with differences in vasoconstriction.

The influence of great heights on the constitution of the blood has been studied by M. Viault and M. Muntz, whose conclusions are alike. The blood of rabbits taken from the plain to the top of the Pic du Midi and kept there for seven years had a respiratory capacity nearly double the normal (17 cubic centimetres to 9). The proportion of metallic iron was also raised from 40 per cent. to 70 per cent., indicating a corresponding augmentation in hæmoglobin. A long stay above is not necessary to produce these changes. Sheep in the Pyrenees, which are taken up the mountains every summer, show them in a few months. Even the mountains are not required, for M. Muntz has shown that the same result is brought about by increasing the proportion of combustible food consumed by the animal.

The researches of Dr. B. Levy on the circulation of the blood in the brain give results contradictory to those reached by Geigel, which were that constriction of the arterics produces an increased blood supply, and their dilatation causes the supply to decrease. Dr. Levy insists that physiological supply of blood to the brain is regulated in the same way as in all other organs—that is, that the dilatation of arteries produces an increase, and their constriction a decrease, in the current of the blood. Venous congestion leads to arterial anæmia. Acute compression of the brain—caused, for instance, by a foreign body penetrating the skull—and dilatation of arteries beyond certain limits, as by inflammation, have a like effect. Extensive depletion of the capillaries leads to a perversion of the blood supply. Dilatation of the arteries, then, produces anæmia, while contraction leads to hyperæmia. The supply is consequently not influ-

enced physiologically by the fact of the closure of the brain in a firm, unyielding case. The opening of the cranium likewise does not alter the supply.

The conditions under which the germicidal properties of the blood are at their highest have been investigated by Dr. von Fodor. The first series of researches had reference to the composition of the blood, and proved that arterial blood has a more destructive action on the bacteria than venous, and that fresh blood has a more powerful action than that which has been shed for some time. Again, the germicidal power of the blood was weakened in an atmosphere consisting entirely of oxygen or carbonic acid; on the other hand, the removal of gases from the blood had no appreciable influence. The blood of rabbits which had been poisoned by carbonic-acid gas was not fatal to the bacteria. No difference in effect was observed when the blood was kept in motion. The germicidal power of the blood increased with the temperature till it reached its maximum at from 38° to 40° C., and then gradually diminished. The individual predisposition of any animal to infectious disease seemed to stand in direct relationship with the germicidal power of its blood. A second series of researches was directed to determining the influence of drugs on the power of the blood to destroy germs. From them the author concluded that any drugs which caused increased alkalinity of the blood considerably raised the resisting power of the organism against the inroads of bacteria.

Respecting the detection of human blood, Dr. Copeman, of St. Thomas's Medical School, has remarked that, as there are no chemical tests for blood as such, the observer has to resort to the microscope for evidence of the presence or absence of the colored corpuscles. The tests applicable to the coloring matter are chemical, microscopic, and spectroscopic. The guaiacum test is readily applicable and trustworthy within certain limits, but is also given with milk, pus, and urine, and can not be accepted without corroboration. It is possible to mistake for blood a red stain—such, for example, as might be found on linen through a red scarf having been worn upon a part bathed with perspiration. This is the more likely to take place because sweat is occasionally charged with the coloring matter of the blood. Hæmin crystals may be obtained from a small stain by dissolving the coloring matter in glacial acetic acid, and, if the stain is an old one, adding a crystal of sodium chloride. No reliance for distinction can be placed upon the relative size of hæmin crystals obtained from human blood and those derived from the blood of other animals, for in both cases the size depends largely upon varying conditions. The size of the red corpuscles likewise does not furnish a reliable test. As yet the microscope enables us only to determine with certainty whether the blood is mammalian or not. The old *dictum* of the physiological text-books that the hæmoglobin of human blood can not be crystallized is contradicted. Dr. Copeman has obtained crystals of it in from ten to forty-eight hours. If arsenic is given to the patients for a few days the hæmoglobin ceases to crystallize, but begins to do so again when the arsenic treatment is discontinued. Human blood taken from the stomachs of leeches which have fed upon it will crystallize. The order of the appearance of

crystallization varies in different animals. It occurs more quickly in the blood of the rat, guinea pig, and squirrel than in that of the cat, dog, horse, and man. The micro-spectroscopic tests are important. Exposure to air turns hæmoglobin to meth-hæmoglobin, and it is the spectrum of this substance, which is peculiar, that is obtained from old blood stains. The best spectrum given by blood is yielded by reduced hæmatin. Monkey's blood crystallizes, so far as regards the oxidation of the hæmoglobin, exactly like man's—a fact which is not found to obtain in any other animal. But human hæmoglobin crystallizes rectangularly, while monkey's is diamond-shaped or six-sided. The blood of many domestic animals refuses to crystallize under the ordinary method for human blood, but may be made to crystallize by treatment with ether. The form of the crystals in all other animals than man differs from the rectangular prisms derived from human blood, and they always consist of oxyhæmoglobin, while in man and the monkey they are formed of reduced hæmoglobin. As a positive experiment, human blood may be made to crystallize by the addition of decomposing serum, by treatment with solution of bile salts, by agitation with ether, and by semidigestion in the stomach of the leech. Of these, the first is to be recommended as the best method.

Dr. Lilienfeld has observed Prof. Kossel's "histon" in the leucocytes of the blood, united to nuclein as "nucleo-histon." Histon prevents the clotting of blood, while nuclein promotes the formation of fibrin. These two facts are regarded as explaining the various phenomena connected with blood clotting. Thus the blood is fluid in the blood vessels because nucleo-histon is retained by the leucocytes. On the other hand, when the blood is shed, some of the leucocytes or platelets die, whereupon the nucleo-histon escapes into the plasma, is decomposed by the calcium salts there present into nuclein and histon, and the former (nuclein) then causes clotting. These facts also explain the action of calcium salts in promoting clotting.

Prof. Zuntz, having observed that strong muscular exertion has a different effect on the alkalinity of the blood in carnivora and herbivora, the point was reinvestigated in the author's laboratory by Dr. Cohnstein, who found that the blood of a dog at hard work on a treadmill showed no alteration of alkalinity. The result was unaffected by diet. During very prolonged exertion the blood was finally found to possess an increased alkalinity. Prof. Zuntz had found that the power of the blood of dogs to absorb carbonic dioxide was practically unaltered by exercise, whereas in rabbits it was considerably lessened.

In the case of an albuminous fluid discharged through fistulous openings by a patient troubled with a distention of lymphatics in the leg, Dr. J. Munk has found the discharge, though sometimes transparent, always milky after a meal containing fat. It thus resembles chyle rather than lymph, and probably really is chyle. At least two thirds of the fat given at any one meal reappeared in the fluid from the fistula. The time before the appearance varied according to the hardness of the fat, being longer with the harder fats. Large doses of starch or sugar hardly in-



creased the percentage of sugar, nor did large meals of albumen increase that of proteids in the fluid. Thus the only food stuff that leaves the intestine by the lacteals is fat.

**Digestion.**—While it is understood that the normal digestive processes going on in the living alimentary tract take place under different conditions from those which exist ordinarily in artificial digestion experiments, physiologists have been wont to assume that, so far as the purely chemical part of the process is concerned, the results are essentially the same. Minor differences, it is true, might be expected, as in the rate of action, which would presumably be more rapid in gastric digestion, where the products of the action are continually removed by absorption and fresh digestive juice is continually secreted, than in artificial methods, where the products necessarily accumulate and the digestive juice is limited to the original quantity. The main object of a recent study by Prof. R. H. Chittenden and G. L. Amerman was to ascertain by experiment how far the action of pepsin-hydrochloric acid on proteids is influenced by the partial removal of the products of digestion as they are formed, and whether or no, under such conditions, complete peptonization is possible. The results of a series of experiments for comparison of the proteolytic action of pepsin-hydrochloric acid in a flask with that in a dialyzer showed that the slow and incomplete peptonization, supposed to be characteristic of artificial gastric digestion, is not materially modified by this closer approach to the natural process, and favor the view that the conversion of the primary products of gastric digestion into true peptone is a slow and gradual process, even under the most favorable circumstances. The authors believe that complete peptonization is not a property of gastric digestion, either in the artificial or in the natural process; that the action of pepsin-hydrochloric acid is rather a preliminary stage in proteolytic digestion, a preparation for the more important changes peculiar to the small intestine, in which the more energetic alkaline-trypsin solution plays a conspicuous part. This view—that gastric digestion is a preliminary step preparatory to the more profound changes characteristic of pancreatic digestion—is confirmed by the experiments made as to the relative proportion of proteoses and peptone in natural gastric digestion in the human stomach, in which the two albumoses were found in considerable excess of the peptone. It is mentioned incidentally that the gradual diffusibility of the albumoses brought out by the authors' experiments, in which they were found to possess a certain power of osmosis, through vegetable parchment, although to a lesser degree than true peptone, may serve as a means for their partial utilization by absorption, without necessarily involving a complete conversion into the more diffusible peptone. Protogelatose was also found to be fairly diffusible, but with a somewhat lower endosmotic equivalent than the corresponding albumose.

In his experiments on the fat-splitting properties of pancreatic juice, B. K. Radford applied to the pancreatic juice of the rabbit a method based upon the spontaneous emulsion method of Gad. He found that the juice was alkaline, and remained so for some time after it was removed;

that if it was shaken with neutral olive oil, the oil rapidly took on an acid reaction, which was found to be due to fatty acid; that all the oil was split into fatty acid and glycerin by from one to two hours' action of the pancreatic juice; that the time required for the juice, acting in glass tubes at room temperature to develop sufficient fatty acid ( $5\frac{1}{2}$  per cent.) in neutral oil to give the maximum spontaneous emulsion, varied with different specimens of the juice and with the amount of shaking to which the juice and oil were subjected, the average in the author's experiments being twenty minutes; that the action of the pancreatic juice on most of the fats was rapid and complete; that while the pancreatic juice of the rabbit and neutral olive oil showed only a slight tendency to the formation of an emulsion by shaking the action was promoted by adding soda solution, but the emulsion did not remain good; that a permanent pancreatic emulsion may be formed by pipetting the oil from the surface of a tube containing oil and juice and shaking it with the carbonate-of-sodium solution. For this method great value and wide application are claimed by the author, as is seen in the study of the influence of bile and other agents on the fat-splitting action of pancreatic juice. Bile alone does not split fats. In the application of the present method, however, the addition of bile to the pancreatic juice greatly hastened its fat-splitting action. While hydrochloric acid retarded the action, bile and hydrochloric acid mixed hastened it; glycocholate of soda and a mixture of glycocholate of soda and hydrochloric acid hastened it; carbonate of sodium retarded it; the actions of these various substances being at different rates, which are calculated carefully by the author. The experiments having been planned with the idea of placing pancreatic juice under conditions as nearly as possible resembling those under which it acts in the intestine, the author infers that its action must be very rapid under the favorable conditions found in the duodenum—a fact which is of great physiological importance, since it is evident that at this rate all the fats would be split into fatty acid and glycerin in the time required for intestinal digestion, unless the action of the juice was checked or retarded in some manner.

The chemical products of the growth of *Bacillus anthracis* are described by Sidney Martin as including proto-albumose and dentero-albumose, with a trace of peptone, all of which have the same chemical reactions as the similar bodies formed in peptic digestion, an alkaloid, and small quantities of leucin and tyroxin. The mixture of anthrax proto- and dentero-albumose is poisonous, and produces œdema, with, according to the magnitude of the dose, sluggishness leading to stupor, coma, and death. After death, great local subcutaneous œdema is found, with congestion and sometimes thrombosis of the small veins. Peritoneal effusion is occasionally present, and the spleen is usually enlarged, dark, and congested, or simply congested without being greatly enlarged. The anthrax bacillus in digesting the alkali-albumen forms proto-albumose, dentero-albumose, and an alkaloid. The alkalinity of the albumoses may explain their poisonous properties, and is due to the fact

that the alkaloid is in a nascent condition in the albumose molecule. The bacillus forms the alkaloid from the albumen, and it is possible that the living tissues have a similar action when the albumose is introduced into a living animal.

**Nutrition.**—Of experiments on nutrition carried out on men under the direction of Dr. Van Noorden, one set established the fact that nitrogenous waste, in the case of diabetes, can be most definitely lessened by the ingestion of large quantities of carbohydrates. Fats can not take the place of these carbohydrates. Another set of experiments showed that when carbohydrates are given in increasing quantities over a prolonged period to a person in nitrogenous and calorimetric equilibrium, they lead for the most part to a storage of fat (95 per cent.), and to a less extent of proteid (5 per cent.). The author is of the opinion that this proteid is laid on the living cell as a sort of nonliving reserve proteid. A third set of experiments showed that when the food of a fat person is diminished to the requirements of a seven-to-ten-year-old child, then any increase of its proteid constituents leads to a storage of proteid with a simultaneously considerable loss of fat. Experiments upon the respiratory interchange of the person experimented upon showed that the intake of oxygen had been reduced to a minimum, and that the respiratory quotient was 0.7. The last set of experiments, made upon a gouty person, showed that with a constant diet the ratio of intake and output of nitrogen was very variable, at one time a large amount of nitrogen being retained in the body, while at another time much more nitrogen was excreted than was given with the food.

An account of part of the experiments on the nutrition of fasting men carried on by him and other observers was given by Dr. J. Munk, in the Physiological Society of Berlin, March 3. The same observers having some years ago made experiments on the fasting man Cetti, the outcome of which did not accord with the results of experiments made on dogs, they had more recently experimented again over a period of six days on another fasting man—Breithaupt. This man's nutrition was followed for several days on an ordinary diet before the period of fasting, and again after the fast had ended. The patient was allowed as much water as he wished during the fast. The output of nitrogen sank slowly and continuously during the whole period of fasting. The urinary phenol increased in amount up to the fourth day, and then sank to a minimum. Indol was found only in traces, and acetone was absent. The amount of chlorine and of alkali diminished progressively, and continued below the normal even after food was once more taken. The urine contained a large quantity of phosphoric acid, lime, and magnesia. Concerning the respiratory interchange, according to Prof. Zuntz, the intake of oxygen when at rest was the same as that of a normally fed person twelve hours after a meal. The respiratory quotient, varying from 0.66 to 0.69, was less than that due to the oxidation of fats alone or of proteids alone. During the fast the patient's power in turning a wheel against friction was the same as that observed when feeding, but fatigue set in much sooner, and was most marked in the

cardiac muscles. During the earlier days of the fast the consumption of oxygen when working was the same as for a normal person, but later on it became greater. The after effects of work lasted longer than when food was taken. The speaker regarded the extremely low respiratory quotient during the fast as possibly due to the splitting up of the proteids into glycogen and some other substance, which was then oxidized and gave rise to the small quotient observed. This view was supported by experiments made by Dr. Vogelius on the construction of carbohydrates in the fasting body.

Experiments by L. E. Shore to ascertain the fate of peptone when introduced into the lymphatic system, and to determine whether lymph cells can assimilate it or not, have shown that when injected into the bile duct peptone partly passes into the blood, and a certain amount into the urine; when injected slowly into the blood it is excreted in the urine; if the renal vessels are tied, it passes from the blood into the lymph; injected quickly into the blood, it may be in part excreted in the urine, but is chiefly thrown out into the lymph, and if the renal vessels are tied is thrown out of the blood into the lymph, and from the lymph in the tissues of the body is gradually carried to the thoracic duct, and then enters the blood again. Further, it was found that peptone introduced into the lymphatic system can be recovered unchanged; that the cells of lymphatic glands have not the power to assimilate peptone; that the cells of the spleen do not take up or transform it; that the liver can take no part in the normal transformation of peptone, and that the normal transformation of peptone is effected by the epithelial cells of the intestinal mucous membrane.

Differences having been remarked by many observers in the phenomena of diffusion between two liquids separated by an animal membrane, according as the membrane has been recently removed from the living body or has had time to undergo post-mortem changes, E. Waymouth Reid has made a more careful study of the subject. He finds that the normal direction of easier osmotic transference of fluid through the living skin of the frog is from the outer toward the inner surface; that the transference of fluid through the skin in this direction is intimately associated with the physiological condition of its tissues; conditions or agents tending to depress vitality diminish the transfer in the normal direction, while stimulants give rise to augmentation; that the cause of the easier transference of fluid from the outer toward the inner surface is probably to be found in the existence of an absorptive force dependent on protoplasmic activity, and comparable to the secretive force of the gland cell; and that, in consequence of the absorptive force acting from without inward, an alteration of the relations of the surfaces of the skin to the two fluids used in an osmosis experiment modifies the rapidity of the transfer of fluid from one to the other side of the membrane, according as the force exerted by the living tissues is with or against the osmotic stream.

In experiments by E. B. Poulton to determine whether the colors of certain lepidopterous larvæ are partly due to modified plant pigments de-



rived from food, larvæ from one hatch of eggs laid by a certain female insect were divided into three lots and fed, in darkness, respectively throughout their whole life upon (1) green leaves, (2) yellow etiolated leaves, and (3) white midribs of cabbage. The larvæ of the first and second lots became green or brown, as in nature, thus proving that etiolin, no less than chlorophyll, can become the basis of the larval ground color. Those fed upon white midribs of cabbage, in which neither chlorophyll nor etiolin was accessible, were entirely able to form the green or brown ground color. The production of dark superficial cuticular pigment was, however, unchecked. The experiment seems, in the author's opinion, to leave no doubt of the derivation of color from the chlorophyll of the food plant.

In experiments on the madder staining of dentine by Dr. W. G. Aitchison Robertson, rabbits were fed on madder for some time and were then killed, when the dentine was found to be stained. When other food was supplied for a time, and the feeding on madder was resumed afterward, two colored layers, with an intermediate layer, were found in the dentine.

**Nervous System.**—A special research, to ascertain what are the influences that determine the activity and fatigue of the central nervous mechanisms which excite the voluntary muscles to action, is described by Warren P. Lombard, of Clark University, Massachusetts. The experiments were made upon the writer himself, in exercising the flexor muscles of the second finger, generally with the left hand, by the pulling over a pulley of a weight, in the first experiments of 2, and in the later experiments of 3, 4, and 5 kilogrammes. They showed that, if one voluntarily contracts a muscle frequently, and each time raises a considerable weight with all his force, his power quickly begins to lessen, and sooner or later he ceases to be able to stir the weight. If, however, he continues to strive to raise the weight, many more or less complete recoveries of power periodically occur. Throughout the research the first failure to raise the weight was accepted as the sign of fatigue of the voluntary power. The first loss of power came somewhat sooner, and the recoveries of power were much more complete in the case of the author than of most men whom he studied. Apparently the central nervous apparatus through which he sends voluntary impulses to the motor nerves fatigues somewhat more quickly than is usual, and if compelled to act rapidly and vigorously tires sooner than the muscles. Thus he becomes incapable of voluntarily contracting his muscles at a time when they will respond well to direct electrical excitation, or to an impulse called out by irritation of the nerve. This weakness, if it is to be so regarded, is compensated for by great and rapid recuperative power, and therefore never interferes with his ordinary duties; and it is noticed only in experiments such as those described, or when he attempts to exert himself to the utmost for long periods of time, as in a contest in running, or in a boat race. The exercise involved in the research greatly increased the endurance of the central nervous mechanism involved in the experiments, but had apparently little effect upon

other similar structures. The amount of fatigue experienced by the central nervous apparatus in producing a long series of voluntary contractions does not correspond with the number of times that the muscle is stimulated, at least when the rate is not more frequent than once a second. It appears to depend rather on the strength of the impulses sent out, because the total height to which a given weight can be lifted by such a series of contractions is a much more accurate expression of the condition of the central mechanism than the number of times that the muscle can be contracted. Further, the fatigue of the central apparatus does not correspond with the amount of conscious effort exerted in the work, for very many maximal voluntary contractions can be made without fatigue, provided the weight is small. Indeed, it seems as if the strength of the impulses which are sent outward to the muscle depended not only on the voluntary effort, but on some influence which passed inward from the muscle itself. The influences which have been found to affect the voluntary power of the subject are to be looked upon as controlling the activity and fatigue of the special central nervous mechanisms, which develop or transmit the voluntary impulse to the nerve fibers that supply the flexor muscles of the second finger of the left hand. Enough experiments were made with other parts, however, to show that other similar mechanisms are influenced in the same way. The following influences were observed: 1. Those which lessen the ability to do voluntary muscular work; general and local fatigue; hunger; lessening atmospheric pressure, including the regular and irregular variations; high temperature, especially if associated with much humidity; tobacco. 2. Those which increase the ability to do voluntary muscular work; exercise; rest, and especially sleep; food; increasing atmospheric pressure, including regular and irregular variations; alcohol.

Though quantitative results as to the relative efficiency of these different influences can not be given, something as to their relative effectiveness may be stated. Exercise acts in the same direction as sleep and food, and is a very potent factor. While the two latter simply act to restore the strength, exercise increases the power. Sleep has a greater effect than food, and is much more beneficial than waking rest, perhaps because the restorative processes then go on unopposed. The supply of nutriment only fulfills one of the requirements for the recovery of strength. A rising barometer favors the action of exercise, sleep, and food to increase the power, while a falling barometer opposes them, and may overcome their influence and lessen the strength. Though the regular diurnal changes in atmospheric pressure undoubtedly influence the writer's power, the effect is a delicate one, which is readily obscured by more potent influences. Tobacco and alcohol act very vigorously. Tobacco may prevent the effect of a rising barometer or of food from showing itself, and seems even to lessen the strengthening effect of exercise. Alcohol, in small amounts, increases the strength to a marked degree, even when the barometer is falling. The effects of tobacco and alcohol, there-

fore, tend to neutralize one another, the action of one or the other being seen according to the strength of the dose. Both of these influences are temporary, and last but an hour or two. These statements refer to only small doses of alcohol. It is possible that, had large quantities of alcohol been taken, the primary strengthening influence would have been followed by depressing after effects.

In their study of degeneration and regeneration in peripheral nerve fibers after severance of their connections with the nerve centers, W. H. Howell and G. C. Huber divided the cases examined into two groups: Primary sutures, in which the surgical operation was performed immediately after the injury; and secondary sutures, in which the divided ends of the nerve were dissected out and freshened after the wound had begun to heal. In the latter group the time interval between the suture and the injury varied from a few days to years. Synopses, in tabular form, are given in the author's paper, showing the number of failures and successes for the different nerves operated upon, the average time required in the successful cases for the return of function to motor and sensory fibers respectively, and other points; and critical discussions of the cases are attempted. The general conclusions of the authors regarding the cases of primary suture are that the prognosis is very favorable. In all probability function will be restored completely or partially; that the prognosis is more favorable the younger the patient; that some form of animal suture is to be preferred, and the majority of surgeons employ the "direct method" of nerve suturing; and that the clinical as well as the physiological evidence is against the possibility of "immediate union." Of 80 recorded cases of secondary suture, 38 per cent. were successful, 50 per cent. were improved, and 12 per cent. might be regarded as failures. From a clinical point of view, then, it might be said that the prognosis in the operations for secondary suture is good. Improvement is almost certain, and in a large proportion of the cases complete success may be expected.

In the course of some researches respecting the functions of the cerebral heat centers, Dr. J. G. Adami made experiments to determine whether substances inducing typical fever in the intact animal lead to any rise of temperature when injected into the animal deprived of its hemispheres. Employing for this purpose the hen, he found that for the first few days after the removal of the cerebrum, when evidently the shock caused to the system was still persisting, the temperature regulating mechanism was thoroughly disorganized. The bodily temperature of the fowl responded to changes of temperature to which the normal hen is not or is very little sensitive. The author, however, obtained clear indications that the substances he experimented with—warmed egg and sterilized cultures of *Vibrio Metschnikovi*—when injected under proper conditions into the hen deprived of its hemispheres, lead to a marked rise of temperature. Whether such rise is truly febrile or not, and whether it can be produced in fowls minus their hemispheres at a later period, when

the system is in a more stable condition, are matters that have yet to be investigated.

The experiments of Bernstein and Wedenski showed several years ago that tetanic stimulation of a motor nerve in frogs causes no fatigue. Bowditch, by the help of curare, obtained the same results with reference to the cat and the dog, or to warm-blooded animals. Langendorff has adduced the persistence of toothache as illustrating the existence of the same immunity to fatigue in other nerves; and experiments by Szana point to the same conclusion with respect to the inhibitory fibers of the vagus in the rabbit.

**Special Senses.**—In a paper on the "Function of the Retina in the Perception of Color," Mr. W. F. Stanley, referring to Young's theory of color sensation, said that Prof. Rutherford had pointed out that there was no necessity for assuming that different nerves conveyed different color sensations, for as a telephone wire would transmit almost an infinite variety of sound vibrations, so the nerves of the retina were probably equally capable of conveying all kinds of light vibrations. Prof. Rutherford had further pointed out that the image of a star could not possibly cover three nerve terminals at once, and therefor could not be seen as white if Young's theory were correct. The author then described Helmholtz's experiments with a small hole in a screen illuminated by spectrum colors. For red illumination the greatest distance at which the hole could be seen sharply defined was 8 feet, and for violet  $1\frac{1}{2}$  foot. When the hole was covered with purple glass, or with red and violet glasses superposed, and a bright light was placed behind, the eye, when accommodated for red light, saw a red spot with a violet halo round it, and when focused for violet light, a violet spot with a circle of red. These experiments show, the author thinks, that the chromatic sense in distinct vision under critical conditions, or where a single nerve or a small group of nerves is concerned, depends on the colors being brought to foci at different distances beyond the crystalline lens. He also infers that the same focal position in the eye can not convey simultaneously the compound impression of widely separated colors. Helmholtz's observations are further examined in the paper, and a series of zoetrope and color-disk experiments are described which tend to show that the eye can not follow rapid changes of color. Changes from red to violet could be followed much more quickly than those from violet to red. The red impressions were, however, more permanent. The observed effects were found to depend on the intensity of the light, and also on the distance of the eye from the colored surface. Summing up his observations, the author infers that by systems of accommodation of the eye, the colors of the spectrum are brought to focus on special parts or points of the rods or cones of the retina, such focal points being equivalent, by equal depths or distances from the crystalline lens, to a focal plane formed across the whole series of nerve terminals. That all the rays of light from an object, or part of an object of very small size and of any spectrum color, will converge to a point upon a nerve terminal, and that this terminal will be most excited by the light. In the



discussion of Mr. Stanley's paper in the Physical Society, London, Capt. Abney said that to be conclusive, the zoetrope experiments must be conducted with spectrum colors instead of pigmentary; that the statement about the size of star images being less than that of a nerve terminal would probably need revision; and that the modern view of color vision was to regard light as producing chemical action in the retina, which action gave rise to the sensation of color. On the author's theory, he could not see how color blindness could be explained. Prof. S. P. Thompson said that the gist of Mr. Stanley's paper seemed to be that lights of different colors were concentrated at points situated at different depths in the retina, the violet falling on the part nearest the crystalline lens, and the red farthest away. Another view of the action was that the different sensations might be due to the vibrations of longer wave length having to travel greater distances along the nerve terminals before they were completely absorbed.

The aqueous humor of the eye—the profuse escape of which was formerly supposed to entail the loss of the eye, but has since been ascertained to be not serious in itself—has been found by Dr. W. Nicati, of Marseilles, to be the secretion of a special glandular apparatus of the ciliary process, which he calls the “uveal gland.” The parts described as associated with or forming part of this uveal gland include an epithelium continuous at the ora serrata with the retina, and prolonged over the whole surface of the ciliary process to the attachment of the iris. This represents the gland, which the author estimates to have a surface at least 6 centimetres square. The cells constitute a single layer, with large oval or spheroidal nuclei, and rest on a layer of pigment cells continuous with that external to the rods and cones of the retina. Internal to the epithelium is the suspensory ligament, a special structure which extends from the tips of the ciliary processes to the lens, and is composed of delicate connective tissue and of the rigid friable fibers of Henle, among which some free blood corpuscles are found. These Dr. Nicati believes to be the remains of the vascular organ, which occupied this position before birth, the *tunica vasculosa lentis*, of which the pupillary membrane of the foetus is a part, receiving its vascular supply from the hyaloid artery. External to the secreting epithelium is a close network of capillaries, a continuation of the choriocapillaris, which ministers to the nutrition of the gland. The larger arteries supplying the plexus are the short ciliaries, and the veins returning the blood are the *venae vorticosae*. The nerves proceed from the plexus formed by the ciliary nerves given off by the nasal nerve and by the lachrymal ganglion. The ducts of the gland are represented by the canal of Petit, the circular marginal slit of the posterior chamber which separates the iris in front from the crystalline lens and the ciliary processes behind, and the slits connecting these spaces with each other: while the channels by which the aqueous humor is absorbed and carried away are lacunae in the epithelial layer covering the crypts on the anterior surface of the iris, sometimes named the lymphatic lacunae of Fuchs or the stomata of Nuck and Cornil, which open into a system of

lymphatic channels that are again continuous with the lymphatic sheaths of the anterior and posterior ciliary veins and of the *venae vorticosae*.

The results obtained by Herr Hocheisen in experiments on the sense of touch in the blind show that their muscular sense is far more acute than that of those who can see, and is more acute in the youthful blind than in those who are older, the sense in the latter being but little more acute to them in those who can see. Similarly the power of localizing was more acute in the young than in the older, and did not differ appreciably from that of those who can see. By practice both of these senses can be so sharpened in those who possess sight as to become ultimately as acute as in the blind. Eight subjects were experimented with, some of whom were born blind, and some became blind early in youth.

It appears, from the researches of Prof. Zuntz, that a taste sensation, as of something sweet, is increased to a very marked degree when some other stimulus is simultaneously applied to the organ of taste, even when the stimulus is too weak to produce any sensation alone. Thus, for example, a solution of sugar tastes sweeter if it is mixed with some solution of common salt so weak that it excites no saline taste. The same result was obtained by the addition of a solution of quinine, also too weak to give rise of itself to any sensation of taste.

**Muscular System.**—Physiological contraction, and even mere mechanical tension of the flexor muscles of the knee, have been found by C. S. Sherrington to exert considerable physiological influence upon the activity of the antagonistic group of muscles, the extensors. For instance, the elicitation of the “jerk” from the extensors can be rendered difficult for a time by appropriate excitation of the flexors, and can, on the other hand, be much facilitated by flaccidity or paralysis of the latter. From experiments made to determine that point it was found that the tonus of extensors is heightened by excitation of the antagonistic set, and conversely. While in mutual association of action of antagonistic muscles about other joints than the knee, movement in the same sense sometimes persists; the movement of response obtained is often reversed by section of the peripheral nerve or nerves supplying those muscles which predominate in the movement obtained, although diminished in force and extent, even after cutting the nerve to the predominant group of the antagonistic muscles. This indicates that in some cases there occurs, together with contraction of one group of muscles, concomitant relaxation of the antagonistic. This is more usual in the eyes than in the fingers.

Dr. Warren P. Lombard, of Clark University, Massachusetts, quotes the observations of Fechner, who spent two months in experiments on the subject, on the effect of exercise upon the power of endurance of the voluntary muscles. This observer took note of the time required to fatigue those muscles. He raised 2 dumb bells of 9½ pounds with extended arms over his head every other second, and lowered them in the intervening second. He found that the amount of fatigue which stopped the work came on at just about the same time for a considerable period. The first day the exercise lasted 104 sec-

onds, half of this time being spent in raising and half in lowering the weight. For the first few days fatigue of the part was felt, and indeed for fourteen days no marked advance was made. On the fourteenth day the exercise lasted 108 seconds. From this time on there was a gradual rise of the curve until the forty-first day, when, though there were many oscillations, the rise became very rapid. The oscillations were attributed to the conflict of the two influences, fatigue and exercise. The greatest time that the work was continued was 692 seconds, and this by excessive disturbance of respiration and circulation, the whole system, as it seemed, revolting against the work. Hence, Fechner concluded that the limit of the effect of exercise upon the muscles is not set by the muscles, but by the constitution. He suggests that by well-regulated exercise the constitution might be altered, and inured to bear fatigue.

In a great military march on cycles, executed by the Twenty-sixth Middlesex Cycling Corps, England, from Hitchin to Peterborough and back, a distance of 100 miles and 200 yards was covered in ten hours and fifty-seven minutes. All precautions were taken to avoid excessive pressure and to provide refreshment at convenient intervals; and although the weather and part of the ground were unfavorable, the men came out of the exercise without fatigue. The most interesting feature of the story, as told in the "Lancet," is that Major Knox Holmes, who was closing his eighty-third year, mounted on a tandem with a rider eighteen years of age, accompanied the corps, and arrived at the termination of the expedition five minutes in advance of the rest. He was a little distressed on dismounting from too hard riding in the last few miles, but soon threw off his fatigue and joined his companions at dinner with thorough zest. His condition is described as physiologically peculiar. In twelve weeks' new training he developed muscle in the most striking manner in the external and the internal vasti, the rectus, and the muscles which form the calf of the leg. It has become so entirely a part of physiological doctrine, the writer says, that after three-score years and ten there is no new development of muscle, that if he had not seen with his own eyes, as he had, this actual development in one whose age exceeded by thirteen years the traditional span of human life, he should have doubted the possibility of its occurrence.

**Vegetable Physiology.**—From experiments made in the Botanical Gardens at Buitenzorg, Java, Herr Haberlandt draws an argument against the view that the transpiration current is of first importance in the nutrition of land plants. The tropical plants showed transpiration greatly inferior in amount to that of European plants, yet they had luxuriant vegetation, and were able to convey nutritive salts to their highest parts. It is curious that, in spite of the great humidity of the air and the large amount of water in the ground, these plants often possess guards against too great transpiration, such as thick, cuticularized epidermis, deeply sunk stomata, and especially tissues adapted for storage of water. And the reason can not lie, as sometimes at the coast, in the presence of salt in the ground. Herr Haberlandt finds an explanation in the fact that

while the total transpiration is comparatively small, the hot sunny forenoons may occasion large evaporation. The transpiration in a forenoon hour was, in general, from 4 to 12 times that of an afternoon hour; sometimes as much as 20 or 30 times. The forenoon hours are by far the most favorable to assimilation, and it is most important to the plant that its turgescence be not then too much depressed, an end accomplished through those water reservoirs.

From recent researches on transference of material in plants, for example, by transference of starch in the potato, Herr Brasse is led to present the following view of what goes on: The assimilation of carbon in the sun's rays is manifested directly in deposition of starch in the chlorophyll grains. Through action of diastase in the leaves and at a temperature lower than that of its formation this starch is changed into reducing sugar, which spreads by diffusion from its place of formation to all the tissues of the plant. In certain parts, and especially in the tubers, the sugar is continuously transformed. The tubers, with regard to dissociation, act like the cold wall in vaporization of a volatile liquid in an inclosed space. The sugar content of all cells of the plant seeks to enter into equilibrium with that of the cells of the tubers in which the content is less, because a change of sugar into starch takes place, and the coefficient of this change is here less than that of the converse change in the leaf, the temperature of the tuber being less. Owing to this inequality, there is a transference of starch from the leaf into the tuber in which it passes through the intermediate stage of sugar. In a similar way Herr Brasse would explain the transference of nitrogenous and mineral plant materials and their storage in special organs.

Some interesting researches into the atmospheric sources of nitrogen as plant food have been made in the Agricultural and Veterinary School at Copenhagen. The proportions of nitric acid and ammonia in the rain water collected in the pluviometers of the experimental fields was measured for each month of the years 1880-'85. The quantity of ammoniacal nitrogen was relatively greater in winter and in cold springs, it oscillating in winter rains between 1.05 and 7.98 milligrammes per litre, and in summer rains from 0.7 to 1.5 milligramme. Observations made at other stations were confirmed, according to which summer rains are not always, as compared with those of other seasons, richest in nitric acid. In two years only out of the five years of experiment did the summer rain contain the most nitric acid. The quantity of ammonia much exceeded that of nitric acid; in one of the five years it was 34 times as much; yet in July, 1883, and August, September, and November, 1884, nitric acid was dominant. In total nitrogen, the summer rains—those of June, July, and August—except in 1883-'84, furnished less relatively than those of other seasons. From 14 to 32 per cent. of the year's nitrogen appears to have been furnished during the three months proper of vegetation (May, June, and July). The author remarks that the figures he gives are maxima, the investigations having been made near a large city. The importance to plants of nitrogenous combinations included in rain water should



not be regarded in calculating the amount that should be imputed for a rational agriculture. The walls of most cells, ducts, and the surface coverings of plants, with certain exceptions, are imperforate, or without any openings that can be demonstrated by the microscope. If gases pass through them, it must be in accordance with some law of diffusion or osmose. Many experiments in this line, according to J. C. Arthur, have been tried, and the results have been of the most diverse character. The most astonishing and important results were obtained by Wiesner, in experiments conducted at Vienna in 1890-'91. He found that it was impossible to force gases through cell walls of any kind by any pressure they will stand, acting for any length of time. For instance, a bit of grape skin held up a column of mercury, 70 centimetres high, for seventy-five days, and a piece of cherry skin withstood a pressure of three atmospheres for twenty-four hours. Similar experiments were tried with cuticularized, suberized, liquefied, and simple cellulose tissues, from many sources, and with uniformly the same results, whether the tissues were moist or dry, alive or dead. But in the same set of experiments it was found that if gases can not be forced through cell walls, they will readily pass through by simple osmotic diffusion. All cells permit the passage of gases by diffusion when moist, dependent upon the coefficient of absorption and the density of the gas. Cuticular and corky formations also permit the passage of gases when dry. Thus we see that gases may be forced through the stomata, or breathing pores, by varying pressure, but can pass through the epidermis and bark of plants only by diffusion. We therefore arrive at the conclusion that the gases inside and outside of the plant are brought to an equilibrium by direct interchange through the stomata and intercellular spaces, aided by the comparatively slow process of diffusion through the whole surface of the plant, both above and below ground.

The function of oxalic acid—one of several plant stuffs, including also alkaloids and tannin possessing the property—of protecting plants from animals has been studied by Herr Giessler, in species of *rumex*, *oxalis*, and *begonia*. The acid mostly occurs in the epidermis and peripheral tissues of the vegetative organs; parts under ground have none. The leaves show most, but the acid may be found in the stem and the leaf and flower stocks. Curiously, it does not, like other protective matters, appear in young organs. The older and more sappy the tissues, the more oxalic acid do they contain. Snails, which avoided those plants in the natural state, ate them when the oxalic acid had been precipitated. The substitution of various means of protection for one another was elucidated by Stahl; plants not protected mechanically have chemical protection, and *vice versa*. In the plants studied by Herr Giessler mechanical protection is deficient. Tannin is found in the organs that have little or no oxalic acid. These two substances "vicariate" with each other also in different species of a genus. In many tissues both occur together. The protective function of a secretion does not exclude other functions. Thus, regarding the epidermis as a water reservoir, the osmotically very active

organic acids doubtless play an important part in the filling of the cells with water. The occurrence of *begonia* and *oxalis* species in very dry places, as also the deficiency in means of protection against transpiration, more pronounced the higher the quantity of acid, put this function of oxalic acid in a still clearer light.

**PORTUGAL**, a constitutional monarchy in southwestern Europe. The upper house of the Legislature is a Chamber of Peers composed of 52 hereditary members, 13 prelates, 139 members nominated for life by the King, and 50 members elected by delegates of districts and learned bodies from the class paying the highest taxes. When the hereditary peerages become extinct by the death of their present possessors there will be 100 life peers. The Chamber of Deputies has 180 members, 168 of whom represent Continental Portugal and the Azores and Madeira, and 12 the colonies. They are elected for four years by the direct votes of male adult Portuguese citizens who have an annual income of at least 100 milreis. The King of Portugal is Carlos I, the third monarch of the line of Braganza-Coburg, born Sept. 28, 1863, who succeeded Luis I, his father, Oct. 19, 1889.

The ministry at the beginning of 1893 was as follows: President of the Council and Minister of the Interior, J. Dias Ferreira; Minister of Public Works, Commerce, and Industry, P. V. da Costa Sequeira; Minister of Finance *ad interim*, J. Dias Ferreira; Minister of War, Gen. Pinheiro Furtado Coelho; Minister of Marine, Capt. Ferreira do Amaral; Minister of Justice, Telles de Varemculos; Minister of Foreign Affairs *ad interim*, Capt. Ferreira do Amaral. The ministry here named was constituted in January, 1892.

**Finances.**—The budget for 1893-'94 makes the total receipts 43,674,457 milreis (1 milreis = \$1.10), of which 11,020,430 milreis were derived from the land, income, and other direct taxes, 20,476,860 milreis from import duties and various small indirect taxes, 1,725,800 milreis from supplementary taxes, 2,002,000 milreis from registration, 1,504,500 milreis from stamped paper, 280,000 milreis from lotteries, 3,640,305 milreis from railroads, telegraphs, and other public property, and 3,024,562 milreis are *recettes de ordre*. The total ordinary expenses are set down as 42,860,427 milreis, and the extraordinary expenses as 1,816,595 milreis, making a total of 44,677,022 milreis. Of the ordinary expenditure, 18,063,118 milreis are for the public debt, 1,894,050 milreis for the floating debt of the treasury, 1,894,050 milreis for pensions, etc., 500,000 milreis for loss by exchange, 3,148,419 milreis for financial administration, 2,280,415 milreis for the Ministry of the Interior, 1,038,608 milreis for the Ministry of Worship and Justice, 5,123,656 milreis for the Ministry of War, 3,542,823 milreis for the Ministry of Marine and the colonies, 390,210 milreis for the Ministry of Foreign Affairs, 4,639,642 milreis for the Ministry of Public Works, 525,000 milreis for the civil list and appanages, 99,270 milreis for the Cortes, and 60,465 milreis for the savings institutions. A commercial treaty was formed with Spain early in 1893. The treaty is to last ten years. Portugal reserves the right to concede special advantages to Brazil. Owing to the scarcity of

flour, the Government in September reduced to 15 reis per kilogramme the duty on foreign wheat till July 31, 1894.

The new consolidated debt on June 30, 1890, amounted to 573,211,934 milreis, of which 258,214,934 milreis were the new internal bonds bearing 3 per cent. interest, 210,902,779 milreis represent the foreign debt of £50,801,576 sterling funded at the same rate, and 104,178,466 milreis were amortizable debts bearing 5, 4½, and 4 per cent. interest. There remained unconverted 125,036 milreis of the internal and 2,252,363 milreis of the foreign debt. The amount of interest paid on all the debts in 1889 was 17,730,807 milreis.

**The Army and Navy.**—The law of Sept. 12, 1887, introduced obligatory service for three years from the age of twenty. A decree of July 23, 1891, reduces the service with the colors to eight months in the second and four months in the third year. Substitution is allowed and leaves are granted under the decree of June 30, 1891, sufficient in number to restrict the effective to 22,000 men. The contingent for 1893 was 14,264 men. Including the furloughed, the permanent army in 1892 numbered 2,089 officers and 25,658 rank and file, with 3,985 horses. With the municipal and fiscal guards included, there were 2,346 officers and 32,625 men. The war effective reaches 4,000 officers and 150,000 men, with 23,000 horses and 264 guns. For 1894 the peace effective has been fixed at 30,000 men.

The navy consists of 1 armored corvette, of 2,422 tons, with 6 cannon above and 3 below 10 centimetres; 6 corvettes with 6 large and 42 small guns; 14 gunboats, with 17 large and 36 small guns; 6 stationary vessels, with 12 small guns; 9 small gunboats; 2 transports; and 4 torpedo boats.

**Commerce.**—The special imports of merchandise for 1891 were 39,529,946 milreis and of specie 8,269,727 milreis. The special exports of merchandise were 21,378,330 milreis and of specie 29,803,648 milreis. The chief exports are cereals, cotton goods, machinery and instruments, iron, coal, sugar, woolens, codfish, raw cotton, railroad material, chemicals, animals, timber, wool, skins and leather, silks, rice, coffee, and butter and cheese. The values of the leading exports for 1891 were as follow: Wine, 10,122,000 milreis; cork, 2,951,000 milreis; fish, 1,416,000 milreis; copper, 1,033,000 milreis; animals, 403,000 milreis; onions, 288,000 milreis. Of the goods imported, 34 per cent. in value consisted of articles of aliment, 3·5 per cent. of animals, 28·9 per cent. of raw materials, and 33·6 per cent. of manufactured articles, while of the exports 75·5 per cent. consisted of foods and drinks, 2·3 per cent. of animals, and 23·2 per cent. of raw materials.

**Navigation.**—There were entered 3,708 steamers, of 5,181,000 tons, and 2,554 sailing vessels, of 363,000 tons, engaged in foreign commerce at the ports of Portugal in 1891, and cleared 3,721 steamers, of 5,187,000 tons, and 2,720 sailing vessels, of 351,000 tons. The merchant navy in 1891 consisted of 67 steamers, of 108,601 cubic metres, and 486 sailing vessels, of 101,711 cubic metres. The Royal Mail Steamship Company, which formerly traded with south-east Africa and afterward with Brazil, became bankrupt in 1893.

**Communications.**—There were 1,335 miles of railroads in operation in 1891 and 96 miles building. The state owned 505 miles. The post-office in 1891 carried 20,851,000 domestic letters, 4,768,000 postals, and 20,389,000 other pieces, and 7,593,000 foreign letters, 270,000 postals, and 4,902,000 other pieces, besides those forwarded through. The total length of the state telegraph lines in 1891 was 3,985 miles, with 8,839 miles of wire. The number of private internal messages for that year was 582,066, and of international messages 584,619. The receipts of the post-office from mail and telegraphs were 6,057,789 francs and the expenses 7,196,653 francs. A British company in the autumn of 1893 laid down a cable from Lisbon to the Azores, which it expects to continue to North or South America.

**Change of Cabinet.**—The Dias Ferreira ministry, after the meeting of the Cortes in January, 1891, had a conflict with the Finance Committee of the Chamber, which wanted to consider the budget and the plan of new taxation, and thus calculate the means at the disposal of the Government for paying the interest on the debt, while the ministry insisted on first receiving sanction for the decree of June 13, 1892, cutting down the rate of interest on the foreign debt by two thirds. Rather than face a Cabinet crisis, the Chamber supported the Government for the nonce. There was much dissatisfaction with the Cabinet among the Conservatives as well as among the Progressists and Republicans. The wine growers believed that their interests had been sacrificed for the benefit of distillers. The Republicans led the attack on the moribund ministry, which had submitted a scheme of exceedingly onerous taxation; and when Dias Ferreira found that he could not obtain the co-operation of the Chamber in his plans for settling with the foreign creditors, he proposed, anticipating a hostile vote, to prorogue or dissolve Parliament. A fresh protest from the German Government against any solution of the question of the external debt that had not the consent of the bondholders may have impelled him to seek escape from office and the responsibility of carrying out his declared purposes. Dissolution the King refused to sanction, whereupon the Cabinet resigned on Feb. 21, 1893. Hintze Ribeiro was asked to form a new one, and on Feb. 23 it was constituted as follows: President of the Council and Minister of Foreign Affairs, E. R. Hintze Ribeiro; Minister of the Interior, João Franco Pinto Castello Branco; Minister of Justice and Ecclesiastical Affairs, Antonio de Azevedo Castello Branco; Minister of Finance, Augusto M. Fuschini; Minister of War, Col. L. A. Pimentel Pinto; Minister of Marine and the Colonies, Capt. J. A. de Brissac dos Neves Ferreira; Minister of Public Works, Commerce, and Industry, Bernardino L. Machado; Minister of Public Instruction and Fine Arts *ad interim*, J. F. Pinto Castello Branco. The new Cabinet represented chiefly the Regenerador party, led by Serpa Pimentel, from which the majority of its members were taken. The ministerial programme embraced amnesty for political offenses, freedom of the press to criticise the existing responsible ministers, an effective Government control over the banks, and the payment of the foreign



debt as far as possible, without imposing new taxes, none at any rate that would fall on the working classes. The Cortes adjourned till May 15 to give time to the ministers to frame a new budget and the other promised measures after sanctioning a general amnesty to press, election, and political offenders, excepting some military officers who issued a *pronunciamiento* at Oporto on Jan. 31. Negotiations with the foreign creditors, which Dias Ferreira had broken off with the intention of cutting down the interest payments to one third the legal amount when they were willing to give up one half in view of the financial straits of the Government, were resumed by Hintze Ribeiro. The alcohol monopoly established by a decree of July 8, 1892, was canceled on the ground that it was illegally constituted and had withheld the royalties due to the state. The new Finance Minister, who was a Socialist, with a disposition to collect the taxes more rigorously than his predecessors and encash all arrears, and also prune down expenses, submitted a budget for 1894 which showed a saving of 1,875 contos (1 conto of reis = 1,000 milreis) in the public services and a surplus of 800 contos in the ordinary budget, but a deficit in the extraordinary budget. An arrangement was made with the foreign bondholders whereby they were guaranteed 33½ per cent. of the regular interest in gold plus half any excess of revenue above 11,400 contos from imports, excepting tobacco and grain and exports, excepting port wine, and half the benefit of any decrease in the gold premium below 22 per cent. The holders of the internal and external debts should have exactly the same privileges. This arrangement was approved by the Chamber on May 16. A plan of increasing the paper currency proposed by the preceding ministry was rejected by Fuschini, who fixed the limit of circulation at 52,000 contos. Among the new taxes was one of 12 per cent. on dividends or profits of foreign banks doing business in Portugal. The others were designed to affect principally the richer classes. Increased taxes on real estate, certain articles of consumption, and domestic alcohol were expected to realize 1,700 contos. Special taxes were imposed on foreign insurance and industrial companies, against which the British Government protested.

**Colonial Possessions.**—The Portuguese possessions in Africa comprise the Cape Verde Islands, Portuguese Guinea, St. Thomas and Prince's Island, Angola, and the state of East Africa, having an aggregate area of 840,000 square miles and a population estimated at 13,482,000. In Asia, Goa, including Damão and Diu, Macao, and Timor have a combined area of 76,700 square miles and 881,000 inhabitants. The budgets of the colonies for 1891 make 3,784,809 milreis for receipts and 3,910,105 milreis for ordinary and 785,080 milreis for extraordinary expenses. The imports of East Africa in 1891 were £215,655 sterling in Mozambique and £497,533 in Delagoa Bay for imports, and £111,493 in Mozambique and £895 in Delagoa Bay for exports. The imports of Angola were valued at \$5,477,629, and the exports at \$4,129,000. The chief exports are coffee, gum, wax, and ivory. There are 142 miles of railroad in Angola built and 217 miles under construction.

In East Africa the Delagoa Bay Railroad has a length of 51 miles. The Zambesi and Beira Railroad had been completed for a length of 75 miles at the end of 1893, and 35 miles more were under construction. An English company was authorized in May, 1893, to build a railroad from Quilimane to the Shire river. The Portuguese extended their posts in 1893 to the confluence of the Limpopo and Elephant rivers, against which the native chief Gungunhana, who has previously given them much trouble, raised a protest. A joint commission that was appointed to delimit the boundary between Portuguese East Africa and the territory of the British South Africa Company could not conclude its labor in the beginning of 1893, because in the district between Massikesse and Chimanamane Ennes, the Portuguese commissioner would not concede to Great Britain the rich Mutare valley, in which valuable gold veins had been discovered. A new customs tariff for Portuguese East Africa introduces differential rates of 40 or 50 per cent., or higher, in favor of certain Portuguese products, as 40 per cent. on alcoholic beverages. In Goa there is a railroad, 50 miles in length, connecting with the British West of India Railroad. The Portuguese Government used to hand over to this British company, having guaranteed its bonds, the subsidy of 400,000 rupees that it received from the Indian Government under the treaty of 1878. That treaty having been abrogated by Great Britain, the excise duties of Goa, amounting to 600,000 rupees, have now been abandoned to the company.

**PRECIOUS STONES.** The growing taste for art in the United States, shown in the improved methods of book illustration, a fondness for etchings, the production of new forms of jewelry and the manufacture of unexcelled silverware, is further manifested in a greater appreciation of gems and the exercise of increased judgment in their selection. During the past decade new stones have come into favor, some neglected ones have regained their popularity, and others have been thrown out entirely. Rubies were considered expensive ten years ago, but at present they are still higher, an eight-carat stone being quoted at \$33,000; and cameos, no matter how finely cut, could not now find purchasers at one fifth their former value. A syndicate of French capitalists has been organized to control the topaz mines of Spain, in the expectation that after twenty years of disfavor this gem will again find itself in fashion.

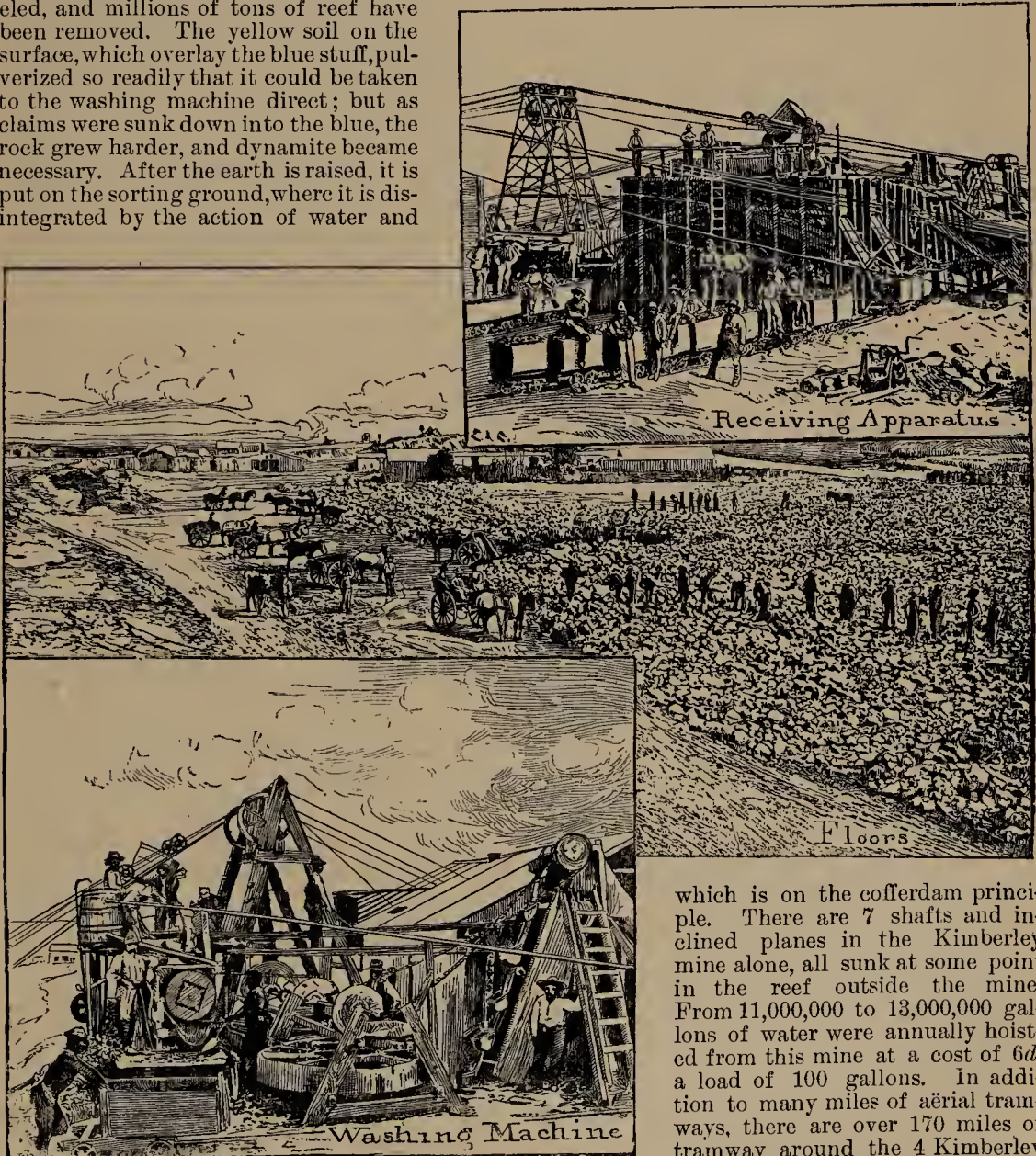
**South Africa.**—Originally the mines of Kimberley were worked as 3,238 separate claims, each 31 feet square, with a 7½-foot roadway between every pair of claims; but since 1877 these have been gradually consolidated until at present they are united into fewer than 40 companies. The primitive method of washing by sieves has been replaced by the most ingenious and powerful machinery, which, though it be eyeless, allows fewer diamonds to escape than would the keenest and best disciplined army of washers. Originally miles of wire cable, to which were attached buckets for carrying the refuse running from individual claims, were stretched across the mine in all directions. Some of these were almost level with the surface, while others were cut down 200 feet, and still



others 100 feet, yet all were worked independently. At the sides were endless belts with pockets for carrying the earth. The result of this was that rock was dropped so recklessly in transit that it was dangerous to stand around the edges of the claims. Not only was the loss of life great from this source, but also from the falling of immense masses of reef, loosened by the blasting, which sometimes buried a score of men at once. Steam railroads are now run into the mine, parts of which have been leveled, and millions of tons of reef have been removed. The yellow soil on the surface, which overlay the blue stuff, pulverized so readily that it could be taken to the washing machine direct; but as claims were sunk down into the blue, the rock grew harder, and dynamite became necessary. After the earth is raised, it is put on the sorting ground, where it is disintegrated by the action of water and

nets (some of which, exceedingly rich in color, are sold under the name of "Cape Rubies") and other heavy minerals are concentrated together in the lower part of the "compound." So thoroughly does it pulverize the rock and earth that all the diamonds, even of the size of a pin head, are saved.

A prize of £5,000 was offered for the best tunnel or shaft system for use at the Kimberley mines, and it was awarded to the Jones system,



the atmosphere. It is then broken by hand and taken to the "compound," or diamond-sorting machine, into which the rock is thrown from the sorting and breaking floors. After being more finely ground, it is passed into large vats containing immense centrifugal wheels, by means of which the rock is finely divided. The lighter materials—such as mud, quartz, and mica—are then floated out, while diamond gar-

which is on the cofferdam principle. There are 7 shafts and inclined planes in the Kimberley mine alone, all sunk at some point in the reef outside the mine. From 11,000,000 to 13,000,000 gallons of water were annually hoisted from this mine at a cost of 6d. a load of 100 gallons. In addition to many miles of aerial tramways, there are over 170 miles of tramway around the 4 Kimberley mines, 2,500 horses, mules, and oxen, and 350 steam engines, shafts, and other appliances, representing 4,000 horse power, are employed in the work. A million pounds are annually expended for labor, and over £1,000,000 for fuel and other supplies. The gross capital of the companies is nearly £10,000,000. Over 10,000 natives, each receiving £1 a week, and 12,000 European overseers at an average wage of £5, are employed. The old system of



open working has been abandoned, and a rock shaft has been completed that taps the lower levels.

In five years the De Beers mine yielded 344,015 carats, valued at £3,450,338, an average of £1 6*d.* a carat. This includes everything taken from the mine. At the beginning the yield was four tenths carat a load, but, as the mining has been carried to a greater depth, the output increased until last year it was eight tenths carat. The average value of a carat of diamonds for some years from the respective mines was as follows: Kimberley mine, 17*s.* 6½*d.*; De Beers mine, 17*s.* 8*d.*; Bultfontein, 18*s.* 2½*d.*; Dutoit's Pan, 21*s.* 7½*d.*; River Digging, 47*s.* 6*d.* The product of the last-named mine, while only  $\frac{1}{128}$  of the weight in carats, was worth  $\frac{1}{62}$  of the entire product, the stones averaging of a much finer quality. The yield of the African mines has been great, and the diamonds have averaged much larger than those from the older mines. The discovery of a 17-carat stone in the Brazilian diggings was sufficient to secure the freedom of the slave who found it; but stones of this size are found by the hundred in Africa. One fifth to one quarter of all the yield, it is estimated, have never reached the proper owners, as the native diggers swallow and conceal the diamonds in every possible manner. Hence it became necessary for the companies, in self-defense, to take extraordinary precautions against this great loss, and overseers or special searchers are appointed to make the most thorough examination of all who leave the mines. None but those authorized by law, termed patented agents, less than 50 in number, are allowed to purchase or even to possess rough diamonds at Kimberley. The actual loss of the diamonds would not have been so great but for the irregular diamond buyers, or "I. D. B's.," as the "fences" are called, who sent the stones to England and undersold the company in the London market. This pilfering was in a great measure checked by the adoption of the "compound system," by which the "boys" are housed and fed under contract for a certain term, and provided with amusements and liquor. They are thus kept apart from the influences of the vicious whites, who instigate them to crime with "Cape smoke" in their "canteens," as the grogeries run by the I. D. B's. are called. Visitors who buy from native diggers what they suppose to be valuable diamonds, and secrete them until they have passed beyond the officials, find to their disgust that they have purchased facsimiles in glass, perfect even to the characteristic yellow tint that is peculiar to many diamonds from this locality.

The "Victoria," the "Great White," or the "Imperial" diamond is supposed to be from South Africa. It is the largest brilliant in the world. The original weight of the stone was 457½ carats, or 3⅜ ounces Troy. It is believed that it was discovered in one of the Kimberley mines. It is supposed that during the summer of 1884 the stone was found by one of the surveillance officers of the Central Mining Company. His duty being to search others, he was not searched himself, and so smuggled the stone through the searching house. He then communicated with 4 illicit diamond buyers, and £3,-

000 is said to have been the price he obtained for the stone. To prepare for the transportation of the stone, the 4 I. D. B's. assembled at night, and after a debauch 2 of the party lost their share by gambling. The other 2 reached Cape Town in safety, where diamond laws are not in force, and from a dealer there they received £19,000 in cash for the stone. An outward duty of one half of 1 per cent. is collected on all shipments of diamonds from Cape Colony, but this diamond is said to have been carried by one of the passengers of a mail steamer, and was undeclared. It was next heard of in London, where it caused considerable sensation at Hatton Garden, the great diamond market. After some time had been spent in trying to find a capitalist who could afford to buy the gem, a syndicate was formed of 32 shares, and the stone was bought for £45,000 cash, on condition that when it should be disposed of each shareholder should receive a thirty-second part in the profits. Before cutting, it was estimated that the crystals would furnish either of the following gems: As a briollette, 300 carats; as a drop, 230 to 240 carats; as a lozenge, 250 carats; and as a mathematically-perfect brilliant, 150 carats. If cut in the latter form, it would give cleavages that would yield one 40-carat and one 20-carat stone, and 40 carats of smaller stones. It was decided to cut it into the largest possible brilliant, still preserving a good shape, and Amsterdam was selected as the place where the gem could best be cut. It was accordingly sent to the polishing mills of Jacques Metz, who erected a special workshop for the purpose, and selected M. B. Barends to cut it. In order to obtain the brilliant cutting, a piece was cleaved off which furnished a 19-carat diamond, and this was sold to the King of Portugal for £4,000. The cutting of the large stone, which was begun in the presence of the Queen of Holland, took about twelve months; for instead of being cut by abrasion with another diamond, as is usually done, it was polished down on the scarf or wheel, and a great amount of time was consumed in allowing the stone to cool off when it had become heated after an hour's running on the wheel. The stone in its finished condition weighs 180 carats, and is a beautiful, perfect, steel-blue diamond, and is the largest brilliant in the world, although flat on one side. It is 39.5 mm. ( $1\frac{2}{3}$  inch) long, 30 mm. ( $1\frac{1}{4}$  inch) wide, and 23 mm. ( $\frac{1}{2}$  inch) thick, being exceeded in size by one diamond only, the Orloff, belonging to the Russian Crown. This weighs 194½ carats, but it is a large deep rose, and not a brilliant. The "Victoria" exceeds the "Regent" in weight by 44½ carats, while the "Kohinoor" weighs only 106½ carats.

The "Tiffany" diamond weighs 125½ carats. It is a "double-deck" cut brilliant, absolutely perfect, and undoubtedly the finest large yellow diamond known. It was found in the Kimberley mine in 1879, and was cut in Paris. One of its most pleasing features is that it not only retains the rich yellow color by artificial light, but it is then even more beautiful than by day. It has 40 facets on the crown, 44 facets on the pavilion or lower side of the stone, and 17 facets on the girdle—in all, 101. Owing to its deep color, it is a finer stone than the historical "Star of the

South" (125 carats), which was purchased by the Maharajah of Baroda for \$400,000 at the World's Fair held in Paris in 1867. It also rivals the "Florentine," which weighed 133 $\frac{3}{4}$  carats and was sold for 2,000,000 florins, but it is only a long double rose or drop, and not a brilliant.

"Du Toit 1," which weighs 244 carats in the rough, the "Great Orange" weighs 110 carats, the "Porter Rhodes," a perfectly white stone of 150 carats before cutting, and many other large stones have been found in the Kimberley mines. In March, 1888, there was found in the De Beers mine an octahedral crystal of diamond weighing 428 $\frac{1}{2}$  carats. It is not entirely white, having a slight yellow tinge, and was valued at £3,000.

More diamonds of over 75 carats after cutting have been found since the African mines were opened than were known before. Thirty-eight million carats of diamonds, weighing over 7 $\frac{1}{2}$  tons, have been found here. In the rough their aggregate value is £50,000,000, and after cutting £100,000,000, or nearly \$500,000,000 more than the world's output during the two preceding centuries. Of the whole yield, not more than 8 per cent. can be said to be of the first water, 12 per cent. of the second water, and 25 per cent. of the third, while the remaining 45 per cent. is called boart, a substance that when crushed to a powder is used for cutting hard substances and engraving. This must not be confounded with the carbon (carbonado) found in Brazil, an uncrystalline form of the diamond which is used in drills and has never been found in South Africa, and is worth from 6 to 10 times as much as boart. Nothing will cut glass but the natural crystal edge of a diamond. Glass will scratch glass, while even a cut diamond or a cleavage face will only produce a scratch, although almost every finder of a curious pebble is sure that it will cut glass like a diamond.

**Brazil.**—The diamond mines at Salabro, near the river Pardo, Brazil, known as the Canavieiras, were discovered in 1882 by a miner who had worked in the earlier and now nearly exhausted mines. The gems were found at a depth of about two feet in red gravel, are fine in quality, and are remarkable for their purity and whiteness, the crystals being such that scarcely any cleaving is necessary. When the Brazilian mines were discovered, the stones were sent to India to enter the European markets in Indian wrappers. Similarly, diamonds from Africa were sent to Canavieiras to be shipped to Europe as the product of that mine. Other Brazilian mines have been only slightly worked of late years. The black diamond, carbonado, or boart, used for diamond drills, saws, etc., has fluctuated in price very much.

Specimens of that very curious form known as "round boart," found only in Brazil, were shown at the Amsterdam exhibition of 1882. They were perfect spheres, the result of a multiple twinning of the cubic form of the diamond. In order to determine its hardness, one of these was cut into the rude outline form of a brilliant by Tiffany & Company, who placed its table on an iron polishing wheel with a little diamond dust, revolving at the rate of 2,800 a minute. The circumference of that part of the wheel on

which the diamond was placed was about 2 $\frac{1}{2}$  feet. It remained there ten hours a day for one hundred days, so that the surface that traveled over this diamond amounted to 80,000 mles. Four and, at times, 8 pounds of pressure were added to the usual 2 $\frac{1}{4}$  pounds and 2 $\frac{1}{2}$  pounds of the clamps or holder, while for a time 40 pounds extra were added, causing the diamond to throw out scintillations several feet long. The wheel was plowed up and ruined, yet no polish was produced, and the diamond was only slightly ground away.

**Australia.**—About 12,000 diamonds have been found in the Tertiary gravels and recent drift near Bingera, in Inverell, Australia; also along the Cudgegon river, 160 miles northeast of Sydney, and in other districts. The colors are white, straw, yellow, light brown, pale green, and black. The largest stones found were cut into gems weighing 3 $\frac{1}{2}$  and 3 carats respectively. A trial made by the Australian Diamond Mining Company produced 190 diamonds, weighing 197 $\frac{1}{4}$  carats, from the washing of 279 loads of earth.

**United States.**—The similarity of the South African peridotite to a peridotite found in Elliot County, Ky., led H. Carvil Lewis to suggest interesting possibilities there, and John W. Powell, director of the United States Geological Survey, sent Joseph S. Diller and George F. Kunz to examine the Kentucky peridotite. The associated minerals were identical with the South African, the pyrope garnet, ilmenite, biotite, and pyroxene being present, but by analysis of the inclosed carbonaceous shales from which it is believed that the diamond is formed, it was found that the Kentucky shale contained only 681 per cent. of carbon, while the South African contained 35 per cent. and could be readily ignited with a match. Hence, unless the peridotite has penetrated the older and richer Devonian shales, the probability of finding diamonds there has been considerably lessened by the investigation. A beautiful twinned hexoctahedral diamond crystal of 4 $\frac{1}{2}$  carats was found in Dysartville, N. C., in June, 1886. A boy discovered the "pretty trick," as he called it, at a spring, and it was some time before it was suspected to be a diamond. None of the associations of the diamond were observed at the spring, therefore it is probable that the stone was carried there by some miner who was washing up his gold and failed to notice the shining crystal among the "wash-up." It was of a faint grayish-green tint, quite perfect as a gem, and would make, when cut, a stone worth about \$100. A number of stones called diamonds have been found at Brackettstown, N. C., but they have proved on examination to be transparent zircon or smoky quartz.

**Meteorite Diamonds.**—A meteoric stone weighing about 4 pounds fell on Sept. 4, 1886, at Novy Urej, Krasnoslobodsk, in the Government of Penza, Siberia, in which M. Latchinoff and Jorefeif discovered what they supposed to be diamonds of microscopic size. In an insoluble residue small corpuscles showing traces of polarization were found, harder than corundum, and having the density and other characteristics of the diamond. A small piece of the meteorite treated with solvents gave a residue of 12 small trans-



parent bodies. One of these, examined by George F. Kunz, was either a eube with faces of the tetrahedron or else a distorted trigonal tris-octahedron. The others were very much distorted, and two resemble the latter form, which is one of the principal diamond forms, and the colors were either pink or light brown. From their smallness a determination of the hardness could not be made, but by grinding with a sapphire 4 particles of the meteorite a number of minute but deep scratches on each polished face of 9 different sapphires were made with each piece of meteorite. These scratches are characteristic of the diamond. Lazarus Fletcher, of the British Museum, read a paper on a meteorite which was discovered in the sub-district of Youndegin, Australia, in 1884, and announced that he had found a new form of graphite of cubic form, with the hardness of 2.5 and a specific gravity of 2.12, to which he gave the name of "cliftonite." It was examined with a  $\frac{1}{4}$ -inch objective, and from its structure Mr. Fletcher concluded that, while it differed from native graphite, the sharpness, separateness, and completeness of the crystal, the brightness of the faces, the delicacy of the acicular projections, and especially of the obtuse, almost flat, square pyramids of some of the faces, were sufficient to prove that the form never had any other than its present tenants; in other words, that it was not a pseudomorph. When in the cubes, the diamond has faces not very unlike those of the Youndegin crystals, and showed a similar beveling of its edges by the rounded tetrahedra.

**Properties of the Diamond.**—Considerable attention has been given to the alleged power of diamonds to emit light in absolute darkness. William Crookes, in his experiments on the phosphorescence of various colored diamonds, found that those glowing pale blue had the longest residual glow, followed by the yellow. He was unable to detect any glow in reddish diamonds. A large greenish diamond, very phosphorescent, shone almost as brightly in the phosphoroscope as out of it. Crookes says: "Next to the diamond, the ruby is, perhaps, the most strikingly phosphorescent stone I examined. It glows with a rich full red, and a remarkable feature is that it is of little consequence what degree of color the earth or stone possesses naturally, the color of the phosphorescence being nearly the same in all cases; chemically precipitated, amorphous alumina rubies of a pale reddish yellow, and gems of the prized pigeon's-blood color, glowing alike in the vacuum, thus corroborating Edouard Becquerel's results on the action of light on alumina and its compounds in the phosphoroscope. The appearance of the alumina glow in the spectroscopic shows a faint continuous spectrum ending in the red near the line B; then a black space, and next an intensely brilliant and sharp red line, to which nearly the whole of the intensity of the colored glow is due.

Many large diamonds, if at all imperfect or of inferior color, are cleaved into smaller stones, in which the poor color is less apparent, as it is only the white diamonds that increase in value as they are larger.

There are about 12 cutting establishments in this country, employing from 1 to 50 men each,

and in all about 100, with salaries from \$20 to \$50 a week. Most of the cutting is of a high class, some shops being almost entirely employed in recutting stones that were cut abroad. Ten years ago nearly all the diamonds used in the United States were purchased through brokers or importers; but, owing to the growth of the diamond business and the facilities for travel, many of the large retail houses now buy their diamonds direct in the European markets, and some have even established agencies there. In 1877 an international syndicate composed of London, Paris, and Amsterdam jewelers, wishing to establish a uniform value for the carat, confirmed 205 milligrammes as the standard, and this was generally accepted.

Henry D. Morse, of Boston, was the first to cut diamonds in this country, and the best cutters in the United States received their training under him. Besides educating young men and women to his art, he showed the world that diamond cutting, which had so long been a monopoly of the Hollanders, was degenerating in their hands into a mere mechanical trade. His treatment of the diamond gave a great stimulus to the industry. Shops were opened in the United States and London in consequence of his success. He studied the diamond scientifically, and taught his pupils that mathematical precision in cutting greatly enhances the value as well as the beauty of the gem. In his shop a machine for cutting diamonds was invented that did away in a great measure with the tediousness and inaccuracy of the old manual process, and it is due to him that we now have the best cutters in the world. He died in Boston in January, 1888.

The jewelery of watches in the United States is estimated to require about 10,000,000 to 12,000,000 jewels a year, 5,000,000 being ruby and sapphire, and 7,000,000 garnet jewels, valued at about \$300,000. The larger part of these are imported, but the Waltham Company alone employs about 200 persons in the cutting of its jewels. At least 15,000 carats of board are used annually for this purpose.

**Formation of the Diamond.**—It has been suggested that the South African diamonds were formed in a sort of volcanic mud; that the action was hydrothermal rather than igneous, the diamonds being the result of the contact of steam and magnesian mud under pressure upon the carbonaceous shales. Sir Henry E. Roscoe, in a paper on the diamond-bearing rocks of South Africa, said he had noticed that a peculiar odor, somewhat like camphor, was evolved upon treating the soft blue diamond earth with hot water. He powdered and digested a quantity of this earth with ether, and on filtering and allowing the ether to evaporate he obtained a small quantity of a crystalline, strongly aromatic, volatile body, burning easily with a smoky flame, melting at 50° C. The quantity obtained was too small to admit of a full investigation of its composition and properties. He suggested that perhaps the diamond was formed from a hydrocarbon simultaneously with this aromatic body. H. Carvill Lewis, in describing the genesis of the diamond, said that from the De Beers mine, at a depth of 600 feet, there had been sent him specimens of rock that were unaltered, and proved to be a peridotite containing carbona-

aceous shale; that from information he had received from New South Wales, Borneo, and Brazil, he believed that all diamonds were the result of the intrusion of a peridotite through carbonaceous rocks and coral seams.

**Artificial Diamond.**—In 1880 Mr. J. Ballantine Hannay claimed to have produced artificial diamonds by tightly sealing in steel and iron tubes or coils about 4 inches thick, made by boring out a solid block of iron, a mixture of 10 per cent. of bone oil and 90 per cent. paraffin spirit, and subjecting these tubes to intense heat for some hours. After 80 experiments he obtained 14 milligrammes of residue, part of which he called diamond. The substance was pronounced diamond by Profs. Maskelyne, Roscoe, Stokes, and others. In 1888 C. A. Parsons made a series of experiments on carbon at high temperatures and under great pressure, and with other substances for the purpose of producing a dense form of carbon for use in arc and incandescent lamps. The results proved unsatisfactory, but incidentally there was obtained on the surface of the carbon rod a gray powder harder than emery and capable of scratching the diamond, which he concluded was probably diamond itself. A full account of the experiments was given in a paper read before the Royal Society of London.

**Ruby.**—The Burmese ruby mines have cost the British Government a vast sum of money. During the wars of 1826 and 1852 England expended \$75,000,000 and \$15,000,000 respectively, and after this sacrifice the Burmah and Bombay Trading Company claimed that King Thebaw of Burmah had arbitrarily canceled the leases by which the company controlled the output of the ruby mines near Mandalay. The war of 1886 followed and involved the raising of an army of 30,000 men and an outlay of \$5,000,000, but the British Government gained control of the ruby mines. They are in the valley of the Mogok, about 75 miles north of Mandalay, at an altitude of 4,200 feet. Concerning them very little was known, as they were always the monopoly of the Crown and were jealously guarded. It was said that they paid King Thebaw's Government 100,000 rupees annually, and in one year 150,000 rupees. Mining is carried on there by about 50 wealthy natives, who employ the poorer townspeople at liberal wages. All the gems are sent to Ruby Hall, Mandalay, to be valued.

**Artificial Ruby.**—This subject is of importance not only commercially, but as illustrating the surprises that chemistry is constantly giving us. In 1886 the syndicate of dealers in precious stones in Paris were informed that certain stones, put upon the market by a Geneva house and sold as rubies from a new locality, were suspected to be artificial. It was surmised that they were obtained by the fusion of large numbers of small rubies, worth a few dollars a carat, into one fine gem valued at from \$1,000 to \$2,500 a carat. Some of these artificial stones were examined by George F. Kunz, who found that the principal distinguishing characteristic between them and genuine stones was the presence of spherical bubbles, with rounded ends, similar to those seen in glass or other fused mixtures. When examined individually they

seemed to be filled with gas or air that often formed part of a cloud, the rest having the waviness of a fused mixture. A few were observed inclosing inner bubbles, apparently a double cavity, but empty. In natural rubies the cavities are angular or crystalline in outline, and are usually filled with some liquid, or if they form part of a "feather," as it is called by the jewelers, they are often arranged with the lines of growth. Hence the difference in appearance between the cavities in the natural gem and those in the fused gem is very distinct, and can readily be detected by means of a pocket lens. No traces of anything like a crystalline or angular cavity were found in any of the artificial stones, and in many genuine rubies there is a flossy-looking structure, called "silk" by the jewelers, which, if examined under the microscope, is found to be a series of cuneiform or acicular, often iridescent, crystals, arranged parallel to the hexagonal layers. When sufficient number these crystals produce the asteria or star effect common to the gem when cut "en cabochon," as the carbuncle or convex cut is called, with the center of the hexagonal prism on the top of the cabochon. This condition is absent from the artificial stones, as well as the marking of the hexagonal crystal, which can often be seen when the light is allowed to strike obliquely across the hexagonal prism. These artificial rubies were probably produced by a process similar to that described by Edmond Fremy and Feil in 1877. An aluminate of lead is used with silica in a siliceous crucible, the silica unites with the lead to form a lead glass, and the alumina crystallizes out in the form of corundum in hexagonal plates, with a specific gravity of 4.0 to 4.1, and the hardness and color of the natural ruby, the latter being produced by the addition of some chromium salt. By this method rubies were formed that, like the true gem, decolorized temporarily on heating. Gaudin's method for producing artificial gems consists in exposing amorphous alumina to the flame of the oxyhydrogen blowpipe, fusing it to a limpid fluid, which, when cooled, had the hardness of corundum, but the specific gravity only of 3.45. The French syndicate referred the matter to M. Friedel, of the School of Mines, Paris, and supplied him with samples of the stones for examination. He reported the presence of the round and pear-shaped bubbles and determined the hardness and specific gravity to be about the same as in the true ruby. The syndicate then decided that all cabochon or cut stones of this kind should be sold as artificial and not as precious gems. Unless consignments were so marked, the sales were to be considered fraudulent and the misdemeanor punishable under the penal code. All the sales that had been effected, amounting to 600,000 or 800,000 francs, were canceled, and the money and the stones were returned to their owners. Edmond Fremy has published the successful result of a second series of experiments to produce artificial rubies. By the former process the rubies obtained were defective, but by the new process perfect rubies 1 to 2 millimetres in size were produced, having the purity of the natural gem and scratching topaz. His method is to fuse fluoride of borax and aluminum containing bi-



chromate of potash that under the continuous action of fire for fifty hours yields a porous and friable gangue in the crucible containing rubies which were separated from it by washing.

**Artificial Emeralds.**—Hautefeuille and Pery, two French chemists, have succeeded in producing very beautiful crystals of emeralds by fusing silica, alumina, and glucina containing traces of oxide of chromium with the acid molybdate of lithia. The materials were heated to a temperature of 600° to 700° for fifteen days. There were obtained fifteen grammes of small crystals of about a millimetre, having all the mineralogical and physical characters of the natural emerald. The longer the operation is continued the larger the crystals become.

**Sapphire.**—In 1882 a very remarkable discovery of sapphire was made in the Zenskar range of the northwestern Kashmir Himalaya, a short distance from the village of Machel. The stones were found at the foot of a precipice, where a landslide had taken place, the including rocks being gneiss and mica. They were collected by the villagers, who were attracted by their beautiful colors, and so little was their value realized that they were used as flints for striking lights with steel. They were so abundant at first that one writer speaks of having seen about a hundredweight of them in the possession of a single native. The price rose rapidly until about £20 an ounce was paid for good specimens, at which rate they have remained. The Maharajah of Cashmere promptly sent a regiment of sepoy to take possession of the mines, and worry natives who were suspected of having gems in their possession or who had any knowledge of new localities where they could be found. Several crystals were found weighing from 100 to 300 carats each. During the first year of the discovery the Delhi jewelers are said to have bought more than £20,000 worth of these sapphires.

**Pearls.**—Pearls have never been so popular or commanded such high prices as in recent years. At present nothing is considered more desirable than the pearl, on account of its purity and subdne beauty. This unusual request has greatly stimulated the search for them, especially on the western coast of Australia, the Thursday island, the Sooloo Archipelago, in Ceylon, and the Persian Gulf, and also along the coast of Lower California. The demand includes pearls of all colors except the inferior yellow. Fine black pearls from Lower California have been in great request, single ones bringing as much as \$8,000. With these black pearls are found many beautiful gray and grayish-brown pearls. The different fisheries of the world produce \$1,000,000 worth annually, of which those in California yield about one sixth. Kentucky, Tennessee, and Texas have given us over \$10,000 worth of pearls a year; their remarkable fresh-water pearls, especially the pink ones, are unrivaled for delicacy of tint. Fancy-colored pearls have been colored by artificial means.

**Opal.**—When it became generally known that Queen Victoria was partial to the opal, the old and stubborn superstition concerning it slowly yielded until that gem has now its share of popular favor. Many of those imported are of the fine Hungarian variety. Mexican fire opals are

much more common, and come from mines on the Hacienda Esperanza, near Querearo. It is believed that a demand of 100,000 stones a year could be supplied without raising the price perceptibly. The opal mines of Dubreck, Hungary, yield the Government a revenue of \$6,000 annually. About fifteen years ago a new and very interesting variety of opal was brought from Baricoo river, Queensland, where it was found in a highly ferruginous jasperlike matrix, sometimes apparently as a nodule, and then again in brilliant colored patches or in specks affording a sharp contrast with the reddish-brown matrix, which admits of high polish and breaks with conchoidal fracture. Many of these stones are exceedingly brilliant. They are known as harlequin opals, and their color is somewhat yellow as compared with the Hungarian stone, although not less brilliant. The rich ultramarine blue opal is peculiar to this locality. A company capitalized at £200,000 was formed, and the gems are mined extensively. Many curious little cameolike objects are made by cutting the matrix and the opal together.

**Fancy Stones.**—The gem and mineralogical collections contain a large series of stones that are hard, of rich color, and are now known as "fancy stones," and by the French as *pierres de fantaisie*. Considerable interest has now centered in these fancy stones. The Duke of Connaught gave his bride a cat's-eye engagement ring, and this made that stone fashionable and increased its value. The demand soon extended to Ceylon, where the true chrysoberyl cat's-eye is found, and stimulated the search for it there. In the chrysoberyl cat's-eye the effect is the result of twinning of the crystal, or of a deposit between its crystalline layers of other minerals in microscopic inclusions. If the stone be cut across these layers, *en cabochon*, or caruncle cut, a bright line of light will be condensed on the domelike top of the stone. In searching for these chrysoberyl cat's-eyes, there have been found a series of chrysoberyls of deep golden, light yellow, yellow green, sage green, dark green, yellowish brown, and other tints that weigh from 1 to 100 carats each, and rank next to the sapphire in hardness. It was found that the darker leaf-green or olive-green stones possessed the dichroitic property of changing to columbine red by artificial light, the green being entirely subdued and the red predominating. They were alexandrites, a gem that had formerly been found only in Siberia, and there of poor quality. A perfect gem of 1 carat was a rarity. Here, however, fine gems under 4 carats were common, and an exceptional one weighing 67 carats was found. Among this alexandrite variety a few have been found which include the characteristics of the cat's-eye, and hence were named the alexandrite cat's-eye. Moonstones from the province of Candy, Ceylon, were brought to light by this search for cat's-eyes. Probably 100,000 of these stones have been mounted in this country. They vary in size from one eighth of an inch to nearly two inches in length and one inch in thickness, and many of them surpass anything hitherto known of their kind in beauty and size. Those that display the chatoyant white and the hazy blue color are especially beautiful. The demand for cat's-

eye also brought into demand the rare mineral crocidolite from Orange river, South Africa, more especially the variety that has been altered to quartz cat's-eye. In this stone an infiltration of siliceous material coated each fiber with quartz or chalcedony, giving it the hardness of seven. This pleasing stone readily sold for \$6 a carat, but owing to excessive competition the price fell to 25 cents a pound in quantity. Table tops have been made of this material by veneering, also vases, cane heads, paper weights, seals, charms, and similar articles. Burning it produced a bronzelike luster, and by dissolving out the brown coloring an almost white substance was obtained, which was dyed by allowing it to absorb red, green, and brown solutions.

**American Gems.**—The handsomest and cheapest of our ornamental stones, and one that has been introduced extensively, is the so-called Mexican onyx, or Tecali, as it was first called from that town, in the State of Puebla, Mexico, where it occurs. The deep colors are richer than those of any marble known, and its wavy, stalagmitic structure and the high polish it takes made it popular throughout the world. With a metal mounting the effect is greatly enhanced. It occurs in almost unlimited quantities, and it has been largely used in the United States for table tops, mantels, and vases. The existence in Arizona of agatized and jasperized woods richer in color than any thus far discovered was known for many years, but general attention was first called to them by an exhibit at the New Orleans Exposition. This deposit is 8 miles south of Corriza, a station on the Atlantic and Pacific Railroad, 24 miles southeast of Holbrook, and has been appropriately named Chalcedony Park. Some of the trees were originally 200 feet in length, and many of them are broken into uniform sections, resembling a pile of car wheels in appearance, varying in diameter from a few inches to eight feet. The fracturing was evidently the result of weathering. The colors present various shades of yellow, red, brown, and white, sometimes in spots, giving a mottled appearance and again all blending to produce a more pleasing and harmonious effect than the decided banding of agate. The original structure is in many instances preserved, but generally it has been entirely replaced by the agate or jasper. One of the wonders of this park is a silicified tree, 100 feet in length and from 3 to 4 feet in diameter, that spans a gulch 55 feet in width and 45 feet in depth, forming a natural bridge of agate, the gulch having been washed out under the tree after its silicification. Although this material occurs here in immense quantities, only part of it is suitable for cutting. Very little attention had been paid to cutting masses of agate more than one foot in diameter, and when this stone began to be utilized for ornamental purposes the cutting seemed to present insurmountable difficulties. The Drake Company, of St. Paul, Minn., solved the problem and erected works at Sioux Falls, Dak., where they utilize the water power, and have succeeded in cutting and polishing sections of the material 3 feet in diameter. To illustrate the hardness of the material, it was found that the power used in sawing sections 2 feet in diameter would saw about 100 sections of Mexican onyx of the same

size, 50 sections of marble, and 10 of granite. It is used for mantels, table tops, tiling, paper weights, inkstands, and a variety of charms and other objects similar to those made from onyx.

The turquoise occurring at Los Cerillos, New Mexico, was worked by the natives before the arrival of the Spaniards, who also mined there. It is now cut by the Indians into flat beads or other ornaments, which are sold as charms. The color is not good, but these green stones have been artificially stained to a fair blue, and many of them have been sold as fine turquoises. The color has been tested with ammonia and found to dissolve readily, whereas the color of the Persian or the Egyptian turquoise is unaffected if left in ammonia for twenty-four hours. William P. Blake described a new locality of turquoise at Turquoise Mountain, in Cochise County, Arizona. The color is apple and pea green, exactly like that of the New Mexican stone. There were large piles of *débris* around the excavation, showing that it was worked before the country was inhabited by the Apaches. These turquoises, like those of the New Mexican locality, have little commercial value. Frank W. Clarke and Joseph S. Diller, of the United States Geological Survey, made a study both chemically and microscopically of the New Mexican turquoise, as well as the trachyte in which it occurs, and found that, with the exception of the very dark-green variety, the series of analyses agreed with those of Persian and Californian turquoises. V. von Zepharovich and Gideon E. Moore described and analyzed a turquoise from Taylor's Ranch, Fresno County, Cal., which has replaced crystals of apatite. A deposit has been found in the Holy Cross Mining District, Colorado. What may become of considerable use as an ornamental stone is the jasper found in Graham County, Kansas, which is banded like onyx in red, yellow, brown, white, and other colors. Pieces 1 foot long and 6 to 8 inches thick can be taken out.

The small brilliant rutile crystals from Alexander County, N. C., have furnished perfect black specimens which approach the black diamond more closely in appearance than any other known gem. The well-known labradorite rock in Lewis County, N. Y., is so plentiful that the reflection of the boulders has given the stream that runs through the locality the name of Opalescent river. It is extensively cut as an ornamental stone. At Auburn, Me., hundreds of crystals of tourmaline have been found. Some of these have been cut into gems, though they do not rival those from the more famous locality at Paris, Me. In color they are generally light green, light blue, and light red. The Mount Mica Mining Company began operations at the famous tourmaline locality near Paris, Me., in 1879. They continued for three summers, and were rewarded by the discovery of some of the finest green, blue, and white tourmaline that ever have been found. A crystal of blue tourmaline measuring 9 inches in length and a green tourmaline that measured 10 inches were among the most remarkable finds, the proceeds of which altogether have amounted to more than \$5,000.

Green beryls, blue and green sapphires, white and bluish topaz, garnets, and zircons have been found in New England and in New South Wales,



and from the Abercrombie river some precious opals. An opaque variety of hydrophane, in rounded lumps, from 5 mm. to 25 mm. in diameter, with a white, chalky, or glazed coating somewhat resembling the cacholong from Washington County, Ga., has recently been brought from Colorado. When water is allowed to drop on the mineral it is slowly absorbed and at first becomes very white and chalky, and then gradually perfectly transparent. This property led the finder to propose the name "Magic Stone" for it, and he suggested its use in rings, locket, and charms to conceal photographs or other objects which the wearer wishes to display only as caprice dictates. The specific gravity of several specimens, both wet and dry, was taken, and it was found that it absorbs more than an equal volume of water. This stone is identical with one brought from China several centuries ago, and described as the "oculus mundi," or "world's eye," and as the "lapis mutabilis," which when wet became entirely transparent except a central nucleus (possibly a core of chalcedony). If the central core was black, the stone was called "oculus beli." In 1882 topaz was first discovered in Colorado, and since then it has been found in some abundance at Platte mountain, Cheyenne, and at Crystal Peak, near Pike's Peak. Many of the crystals are very large, several of them weighing over a pound each. The smaller ones are transparent and range in color from pellucid white to rich cinnamon brown; a few are light blue and light green. The two largest gems weighed 125 and 193 carats respectively, and equaled those from any known locality. At Stoneham, Me., while examining minerals collected by Nathaniel H. Perry, topaz was identified, including several crystals measuring one foot on the face, also a number of smaller ones some of which had small transparent spots that afforded a limited number of gems of several carats each. Five years ago the existence of rock crystal of any size was almost unknown in the United States, but about that time a large clear mass, weighing some 13 pounds, found in Alaska, was brought to New York city and made into thin slabs for hand mirrors. In 1885 a 51-pound fragment, said to have been broken from a crystal that originally weighed 300 pounds, was found on Chestnut Hill Township, Ashe County, N. C. Most of the crystals in that vicinity were obtained either by digging where one crystal had been found or by driving a plow until it unearthed them. Several dozen in all have been found there, one mass of 20 pounds being almost absolutely pure. Some of them would afford larger masses of clearer rock crystal than any that has before been obtained at an American locality. It is used for crystal balls, clock cases, hand mirrors, and similar objects. In 1887 F. Pisani, of Paris, described a transparent golden-yellow spodumene from Brazil that was supposed to be chrysoberyl. About the same time a yellow-green variety associated with emerald-tinted beryl crystals, the latter called "green bolts" by the farmers, was obtained by J. A. D. Stephenson, of Statesville, N. C., who called the attention of the Northern mineralogists Norman Spang, Frederick A. Genth, and William E. Hidden to it. The latter formed a company to mine the emeralds, and sent a speci-

men of it, which he supposed to be diopside, a variety of hornblende, to J. Lawrence Smith, of Louisville, Ky., who found upon analysis that it was a transparent spodumene instead of diopside, as had been supposed, and named it Hiddenite. This locality has furnished many of the finest emerald crystals that have ever been found, including one 8 inches long and another weighing 8½ ounces, valued at \$1,000. Both of these, together with many other fine minerals found here, are in the Clarence S. Bement cabinet, Philadelphia, the finest private collection of minerals in existence. One light emerald furnished a gem of 5½ carats, but this, as all found there, was too light in color to be of much value. In 1883 one half of a fine blue crystal of beryl was found near Stoneham, Oxford County, Me. It led to a search in which the remaining half and a number of other crystals were found, from one of which was cut the finest aquamarine on this continent, weighing 120 carats, as well as many other fine stones, weighing several hundreds of carats in all. Fine transparent yellow beryls have been found at Albany, Me.; at Avondale quarries, in Delaware County, several 20-carat stones and many smaller ones have been found; and at a mica mine near Litchfield, Conn., several thousand dollars' worth of this gem have been obtained. Amelia County, Va., and several localities in North Carolina have afforded good specimens. At Mount Antero, Colorado, at an altitude of 12,000 to 14,000 feet, beautiful beryls of good blue and green color associated with phenacite have been found that have furnished a number of gems of from 6 to 10 carats each. This locality is covered with snow nearly the entire year. Robert B. Riggs, of the United States Geological Survey, has made over 25 analyses of tourmalines of all colors. He found the color of the iron and magnesian varieties dependent on the amount of iron present. The shades of color depend on the ratios existing between the manganese and the iron. Thus when the amount of manganese and iron are equal, we have the colorless, pink, or very pale green tourmaline. An excess of manganese produces the red varieties; and if the iron is in excess the various shades of green and blue result, as is practically illustrated in glass manufacture.

**Jade.**—In recent years the taste for collecting jade and other carved hard-stone objects has greatly increased, especially among Americans, owing to the breaking up by sale of many large collections. The value of carved jades outside of China and India can not be far from \$2,000,000. In the United States there are perhaps 20 buyers, who have purchased \$500,000 worth of this material, many of the pieces being among the finest known, such as the private seal and other objects from the sacking of the Emperor of China's summer palace. The finest pieces brought over by Tienpau included some of the best pieces that ever left China, and were intended for the Amsterdam Exhibition. The choicest specimens of the Wells, Guthrie, Michael, and Hamilton Palace collections are now owned in the United States. Experienced agents have been frequently sent to India and China to secure fine objects as they presented themselves. One collection alone could not be duplicated for over \$200,000, single objects sometimes selling

for over \$5,000, and one exceptionally fine specimen being estimated at over \$10,000. Explorations in Alaska have brought to light the fact that jade was used by the natives of Alaska for implements, and it is almost proved that it is found not only as boulders, but also *in situ*. The National Museum, the Emmons, Everett, Peabody Museum, Canadian Geological Survey, Dresden, and other collections contain several hundred objects made of this Alaskan material. Frank W. Clarke found among the objects collected for the United States National Museum one which resembled pectolite so closely that he referred it to that species. It had the hardness of jade, a specific gravity of 2.873, and was pale green in color. The theory that jadeite or chalchihuitl was highly prized by the aborigines has been greatly strengthened during the last ten years. J. J. Valentine, in a paper before the American Antiquarian Society, in 1881, on the Humboldt celt or votive adze, and the Leyden plate, two remarkable carved jadeites, offered some exceedingly interesting suggestions. The Humboldt celt was presented to Humboldt by Del Rio in 1803, and the Leyden plate was given to the Leyden Museum by S. A. von Bramm, who found it near St. Felipe close to the borders of Guatemala, in Honduras. They are both 9 inches in length and  $3\frac{1}{4}$  inches wide, the former  $1\frac{1}{2}$  inch in thickness, and the latter only  $\frac{1}{4}$  inch. This similarity of measurements suggests that the two objects were originally part of one and the same celt. In April, 1886, Frederick W. Putnam exhibited before the same society his remarkable series of Nicaragua and Costa Rica jadeites, which ornaments were made by cutting into halves, thirds, or quarters one large celt perforated by one or two drilled holes, in one instance two of them fitting together. The 16-pound adze exhibited by George F. Kunz at the meeting of the American Association for the Advancement of Science in 1887, from which fully 2 pounds had been cut, and the breastplate recently found, measuring only  $\frac{1}{2}$  inch thickness, together with the fact that even Burmese jadeite when burned or exposed to a high temperature will assume the grayish-green color of the Mexican, all tend to support Prof. Fisher's theory that this jadeite originally came from there. Additional evidence is the striking resemblance between the Maya and ancient Burmese styles of carving, although Dr. Adolph B. Meyer, of Dresden, firmly believed that this material will yet be found *in situ* in Mexico. The existence of beads of this material the necklaces made of common stones suggests its similar origin. The imperial jade quarries of Burmah, in the Mogung district, 90 miles from Bhamo, are leased by two companies, who pay a royalty of \$30,000 annually. At the Colonial Exhibition held in London in 1886 there were exhibited large rounded and water-worn blocks of jade weighing hundreds of pounds, called by the Maoris panau. Much of it was of the finest green color, and was worked into charms and similar objects.

**PRESBYTERIANS. I. Presbyterian Church in the United States of America.**—The following is the general summary of the statistics of this Church for 1893, besides which are given, for comparison, the statistics of 1888 and 1891:

ITEMS.	1888.	1891.	1893.
Synods.....	28	30	31
Presbyteries.....	202	216	221
Candidates.....	997	1,317	1,300
Licentiates.....	314	374	435
Ministers.....	5,789	6,223	6,519
Elders.....	22,434	24,475	25,399
Deacons.....	7,210	7,870	8,356
Churches.....	6,543	7,070	7,292
Added: examination.....	51,062	59,650	59,660
" certificate.....	34,322	37,935	39,298
Communicants.....	722,071	806,796	855,089
Baptisms: adults.....	18,799	21,576	21,738
" infants.....	23,869	26,121	26,247
Sunday-school members...	793,442	883,680	909,062
<i>Contributions:</i>			
Home missions.....	\$844,696	\$995,625	\$1,023,585
Foreign missions.....	743,495	784,406	849,355
Education.....	152,322	154,518	170,800
Sunday-school work.....	78,082	131,870	138,374
Church erection.....	228,364	360,944	318,666
Relief fund.....	525,555	116,573	97,798
Freedmen.....	106,647	124,814	123,587
Sustentation.....	37,026	63,117	71,532
Aid for colleges.....	215,009	163,920	261,335
General Assembly, etc.....	68,125	75,449	82,726
Congregational.....	8,803,562	9,664,279	10,514,429
Miscellaneous.....	1,015,799	1,325,696	1,263,624
Total.....	\$12,818,682	\$13,961,211	\$14,916,311

The General Assembly met in Washington, D. C., May 8. The Rev. Willis G. Craig, D. D., of McCormick Theological Seminary, was chosen moderator. The Committee on Theological Seminaries presented a report concerning the relations of the Assembly to its seminaries. The report concerned the present legal status of the seminaries and the present control of the Church over them. It reviewed the history of each of the fourteen seminaries, beginning with Princeton, the oldest, in the formation of which it was the purpose of the Church to maintain direct and complete control by the Assembly of the teachings and property. As the Church grew in numbers, other seminaries and schools were formed, some of them, as the Western, McCormick, Danville, and Omaha, substantially on the same plan as Princeton.

Other seminaries, organized under different plans, have become connected with the Church, either by contract relations or through the action of their boards in seeking the indorsement of the Church in order to obtain funds and students. Union and Lane are typical of two classes, Auburn and San Francisco of two others. Union is a civil corporation, whose charter is undenominational, and makes no reference of any kind to the Presbyterian Church. No control of the seminary, either in its teaching or property, is, by the terms of its charter, given to the Church in any of its agencies. In the case of Lane, the only reference to the Church in the charter is in Article III, which provides that a majority of the Executive Committee and all of its professors and instructors shall be members of the Presbyterian Church in good standing. While these seminaries (Union and Lane) have been regarded as in connection with the Presbyterian Church, and have heretofore been operated in the interest of that denomination, by the terms of the charters of the respective corporations, which have absolute control of the property, subject only to such terms and conditions as the donors impose, the Presbyterian Church has no control of any kind over the teaching or the property of these seminaries, and can afford the donors of funds to them no protection in the matter of applying their gifts to the purposes for which they are made. Auburn is controlled by certain presbyteries and San Francisco by certain synods. The charters of the independent



synods holding the property in trust for the seminaries differ more or less in detail, but have this common feature: that these corporations own the property and have its control and management, free from any direct interference by the General Assembly, save as to the property given them by the Assembly, as to which the Assembly may direct the management. While it is claimed that the power of the Assembly, under the compact of 1870, and the plan of reunion over the various theological seminaries is limited to the exercise of the right of approval, or veto, of the appointment of professors and the prerogative of receiving annual reports from the seminaries, "according to the plan of government of Princeton, Western, McCormick, Danville, and Omaha, the General Assembly has the right to control the election of boards of directors."

The Committee on Church Unity reported concerning the results of an oral conference held at Baltimore with the members of the Episcopal Commission in attendance upon the Triennial Protestant Episcopal General Convention. The "unhappy attitude" in which the two Churches often stood toward each other, "with almost entire isolation, almost entire absence of all that personal intercourse and mutual recognition, Christian fellowship, and hearty co-operation which ought to obtain between them as brethren in Christ," was discussed. Christian unity, a unity of spirit, the committee held, "must precede and prepare the way for all church unity, and is in itself a duty of present and imperative obligation. An external union, even if it were practicable, were worse than worthless if it was not the outgrowth and manifestation of a real inward spiritual union." The committees had therefore agreed to hold in abeyance for the present the question of an external union, and to seek, first, as a necessary prerequisite to it, and in itself as a present and imperative duty, a larger measure and manifestation of Christian unity.

A correspondence with the Protestant Episcopal Commission was inclosed, in one of the letters, of which the commission declared that,

according to our understanding, our [the Protestant Episcopal] Church in America to-day stands with the authority of the presbytery fully recognized, and with it, standing in its relative position of control of legislation, precisely as the English Presbyterians of 1660 caused it to stand in the Church of England when they professed that they would be content with the Anglican Episcopate, provided such and such authority was secured to the body of the presbytery.

The Presbyterian Committee replied that this, with other expressions of the Episcopal commission, and its declaration of its readiness to modify some things in its position, if necessary, for the sake of union, induced the hope that closer co-operation between the two bodies might be brought out in the near future. The Assembly, in its action upon this report, recognized "the growing conformity between the policies of the Episcopal and Presbyterian Churches," and expressed its readiness to co-operate with the General Convention of the Protestant Episcopal Church in all Scriptural measures for the promotion of closer fellowship between the two Churches. "Especially would it delight in ministerial reciprocity under regulations satisfactory to both parties." It recommended the holding of conventions according to the terms

which had been proposed by the Episcopal Commission for the promotion of Christian unity.

The same committee reported a plan for federal union between the Reformed Churches in the United States holding to the Presbyterian system. The plan contemplated the preservation of the independence and autonomy of the bodies entering into the federation and the giving of full credit to all their acts, but provided for the constitution, for the prosecution of work that can be better done in union than separately, of an ecclesiastical assembly, to be known as "the Federal Council of the Reformed Churches of the United States of America holding to the Presbyterian system." This Federal Council, it was contemplated, should endeavor to promote united work for the reclamation of the Christless masses in the large cities, towns, and old rural settlements of the country; co-operation in home missionary work by the different denominations in the new settlements and among the freedmen of the South in such a way as to remove denominational friction, etc.; and the prosecution of foreign mission work on the same principle of comity, so that different denominations shall cultivate different fields; should keep watch of current movements, and take such action as may concentrate the union of all the churches for the maintenance of their principles and interests; should have power to "advise and recommend in all matters pertaining to the general welfare of the Kingdom of Christ, but shall not exercise authority, except such as is conferred upon it by this instrument, or such as may be conferred upon it by the federated bodies. It shall not interfere with the creed, government, or worship of the denominations. All matters of discipline shall be left to the exclusive and final judgment of the ecclesiastical authorities of the denomination in which the same may arise." The Federal Council shall "have the power of opening and maintaining a friendly correspondence with the highest assemblies of other religious denominations, for the purpose of promoting union and concert of action in general or common interests."

The Committee on Co-operation in Home Missionary Work reported concerning the action which had been taken by the Board of Home Missions to insure caution in the organization of mission churches—encouraging such only as are likely to become in time self-supporting—and concerning its conference with representatives of the Home Mission Board, the American Home Missionary Society, and the Board of Domestic Missions of the Reformed Church in America. It was found that the rules of the various societies already in force were sufficient for the purpose. The committee in the judicial case of Prof. Charles A. Briggs (see "Annual Cyclopædia" for 1892) presented a report affirming the pertinency of the appeal from the prosecuting committee of the Presbytery of New York from the decision of the presbytery acquitting Prof. Briggs of the charge of heresy brought against him. The report declared that

The appellant in this case was the Church itself represented by the prosecuting committee, and as such it had a right of appeal as an original party; and that the prosecuting committee of the presby-

tery had a right to prosecute the case to a conclusion ; and that the appeal was in order ; and therefore recommended that the appeal be entertained and the case issued.

In a supplementary statement accompanying the report the Book of Discipline (chap. ix, sec. 4. par. 102, and chap. xii, sec. 4) was cited to show that an appeal directly from the presbytery to the General Assembly was provided for and in order, and the observation was added, as bearing upon the passing over the synod to take the case to the Assembly, that "it is eminently desirable that the Assembly making such decision should, as far as practicable, be representative of the entire Church. Should these views be decided on appeal from the Synod of New York, the commissioners from that synod, representing more than one fifth of the entire membership of the Church, would be debarred by section 98 of the Book of Discipline from sitting, deliberating, or voting in the case. Moreover, such a case of exclusion of the Synod of New York might work to the disadvantage of the defendant himself. As far as the defendant himself in this case is concerned, it is manifestly more just that the Assembly, which finally passes upon his case, should not be compelled to exclude his own synod, the Synod of New York."

The Assembly decided by a vote of 410 to 145 to entertain the appeal. A formal judgment was then entered declaring Prof. Briggs guilty of teaching the errors mentioned in the charges which had been sustained, and of violation of his ordination vows, and suspending him from the office of a minister of the Presbyterian Church until he shall give satisfactory evidence to the General Assembly of repentance of his offenses. The committee to whom had been intrusted the duty of formulating a deliverance of the Assembly on the doctrinal points involved in the appeal reported that they found "that the doctrine of the errancy of Scripture as it came from them to whom and through whom God originally communicated his revelation, is in conflict with the statements of the Holy Scripture itself . . . and also with the statements of the standards of the Church"; that involved in the case was the question of the sufficiency of the human reason and of the Church as authorized guides in the matter of salvation. A recommendation was further made that the Assembly declare that the reason and the Church are not to be regarded as fountains of divine authority; that they are unreliable and variable, and while they may be, and no doubt are, channels or media through which the Holy Spirit may reach and influence for good the human soul, they are not to be relied upon as sufficient in themselves and aside from Holy Scripture to lead the soul to a saving knowledge of God; and that involved in Prof. Briggs's views was a speculation in regard to the process of the soul's sanctification after death, which, in the judgment of the Assembly, was a dangerous hypothesis, in direct conflict with the plain teachings of the Divine Word and the utterances of the standards of the Church.

A protest was entered against the judgment of the Assembly, as involving, in the opinion of the protestants, acts of doubtful constitutionality; as seeming to abridge the liberty of opinion

hitherto enjoyed under the standards by the office bearers in the Church; as tending to the discouragement of the thorough study of the Bible and reverent advance in apprehension of divine truth; and as inflicting an injustice on a Christian scholar of acknowledged high character as well as on the Presbytery of New York,



CHARLES A. BRIGGS.

which had fully acquitted him of the charges alleged against him. The committee appointed by the preceding General Assembly to arbitrate with the directors of Union Theological Seminary reported concerning the proceedings it had taken and the correspondence it had begun with the directors, when all action was concluded by the resolution of the Board of Directors rescinding the resolution of 1870, by which the compact with the General Assembly was adopted. On the recommendation of the committee, the Board of Education was enjoined to give aid to such students only as may be in attendance upon seminaries approved by the Assembly.

A committee appointed by the previous General Assembly on a model constitution for young people's societies reported adversely to the adoption of a uniform constitution.

The following paper was adopted declaring the doctrine of the inspiration of the Scriptures:

The General Assembly reaffirms the doctrine of the deliverance of the Assembly of 1892, touching the inspiration of Holy Scriptures—viz., that the original Scriptures of the Old and New Testaments, being immediately inspired of God, were without error, and in so doing declares that the said deliverance enunciates no new doctrine and imposes no new test of orthodoxy, but interprets and gives expression to what has always been the belief of the Church, taught in the Westminster Confession of Faith.

A protest was entered against this declaration, because it insisted upon a certain theory of



inspiration when the standards had hitherto only emphasized the fact of inspiration; because it was dogmatizing on a matter of which we necessarily have no knowledge; because it was insisting on an interpretation of the standards which they had never borne, and which on their face was impossible; because it was setting up an imaginary Bible as a test of orthodoxy; because it was disparaging to the Bible we have and endangering its authority under the pressure of a prevalent hostile criticism. An answer was prepared to be spread on the minutes, together with the protest affirming that the declaration imposed no new test of orthodoxy and set forth no new theory of inspiration, but only reaffirmed certain statements in the Confession of Faith and the Larger Catechism; and a resolution was also recorded declaring that the Bible as we now have it, in its various translations and versions, when freed from all errors and mistakes of translators, copyists, and printers, is the very Word of God, and consequently without error.

*After Proceedings in the Case of Prof. Briggs.*—After the adjournment of the General Assembly, Prof. Briggs published a letter charging the responsibility for the action of that body upon "the reactionary theologians of the school of Breckinridge," who, he said, had "exhausted their power in suspending one man from the ministry and in making new definitions of dogma and new precedents of law," and indicating, on the assumption that a minority of the Church had violated the constitution, what, in his opinion, liberal Presbyterians should do under the circumstances. The lines of battle, he said,

should be (1) legal and (2) doctrinal. The legal lines are those for which the appellee contended—(a) that there should be no appeal by a public prosecutor against a verdict of acquittal; (b) that a presbytery can not appoint a committee of prosecution which will be independent of the presbytery; and (c) that the jurisdiction of the synod can not be taken from it at the pleasure of the General Assembly. The doctrinal lines are: (a) That Holy Scripture is the only infallible rule of faith and practice; (b) that a minister is bound only to the system of doctrine contained in the Westminster Confession; (c) that the General Assembly can not make new definitions of dogma, either by deliverance or by a final judgment in a heresy trial.

Having advised action by presbyteries and individuals for asserting and vindicating the constitutional rights of the presbyteries, the writer continued:

The Presbyterian Church is a constitutional church, which has in its form of government a prescribed course of procedure for amendments of its definitions of faith and of law. If a General Assembly by a majority vote make new law and new doctrine, it makes them by unconstitutional procedure, which no minister or layman is under obligation to obey, but which he is under bonds to resist to the utmost as illegal and revolutionary. Therefore no minister or layman should feel under any obligation to retire from the Presbyterian Church on account of the illegal acts of the late General Assembly. Every true Presbyterian should rather be challenged to defend the constitution against those who have trampled it under foot.

The appeal of Prof. Briggs to the Synod of New York against the action of the presbytery

was heard in October. It embraced five complaints, of which one related to the status of the prosecuting committee; two were based on the refusal of the presbytery to sustain objections to the amended charges; a fourth was based on the refusal to strike out the concluding paragraph of the amended charges; and the fifth on the action of the presbytery declaring the evidence offered by the prosecution competent. The synod dismissed all the complaint, alleging as its reason that the merits of the case had been heard on appeal, and a final judgment given by the General Assembly covering the whole case. The committee added: "This, in our opinion, clearly and finally disposes of all interlocutory questions in those cases, no matter when the cases were pending."

*The Case of Prof. Smith.*—Besides the condemnation of Union Seminary for retaining Prof. Briggs, the report on theological seminaries contained the following with reference to Lane Theological Seminary:

In the list of professors the Assembly finds the name of Rev. Henry P. Smith, D. D., who was in December last suspended by the Presbytery of Cincinnati for unsoundness in the faith. On Jan. 31, 1893, Prof. Smith tendered his resignation to the board because of that suspension. The board declined to receive such resignation, but continued him by formal action in the duties of his professorship in the seminary.

Where a minister is suspended, he is suspended from all the functions of his office. Among the most important of such functions is that of training young men for the ministry. However serious the embarrassment to the seminary, the board should have immediately accepted the resignation of Prof. Smith, or at least relieved him from the discharge of his duties. Loyalty to the Church should have compelled them to take such action with reference to the seminary. Its charter requires that all the professors shall be members of the Presbyterian Church in good standing. The Assembly, therefore, is constrained to withhold its approval and commendation of Lane Seminary until the board has reconsidered its action in this respect and remedied the error.

The Board of Trustees of the Seminary, after receiving this action of the General Assembly, adopted a protest against the Assembly's assuming the right to review and censure the proceedings of the trustees of the seminary in the administration of its internal affairs. No such power, the board asserted, had ever been conferred upon the Assembly, nor had the attempt ever been made heretofore to exercise it.

But if the board [the protest continues] feels constrained to put on its record its protest against the assumption of power by the Assembly, for which it can show no warrant, much more does it feel compelled, for the protection of its chartered rights and its own self-respect, to protest against the quasi-judicial proceedings of the Assembly in passing under review the alleged proceedings of the board without having its records before it, basing its censure avowedly on *ex parte* information gathered from sources other than official, and which the proceedings of the board show to be incorrect.

The board must further protest against the act of the Assembly by which it summarily, with no conference with the board or notice of its intent, cut Lane Seminary off from the approval of the Assembly, and its students from the aid of the Board of Education, so rendering the continuance of its work difficult, almost to impossibility. By this act the Assembly has of its own motion withdrawn from the

compact of 1870, by its withdrawal of the consideration on its part on which the compact of 1870 was entered into—viz, its recognition and approval of a seminary for instruction in theology, thus discrediting the same before the Church. In view of the above facts the Board of Trustees of Lane Theological Seminary regards itself as freed by the Assembly's action from any and all obligations growing out of our agreement of Aug. 23, 1870, until there shall be established such relations between the General Assembly and Lane Seminary as shall be satisfactory to the Church and consistent with the charter of the seminary and the rights and duties of its board of trustees thereunder. And it is the earnest desire and hope of this board that such satisfactory relations may soon be established.

This board affirms what its records attest, that it has always been faithful to its agreement of 1870, and true and loyal to the Presbyterian Church, and desires to continue and maintain its historic position.

With respect to Prof. Smith the board resolved:

*Whereas*, The General Assembly has declared that sentence of suspension from the ministry carries with it a suspension of the exercise of teaching in the theological seminaries; and

*Whereas*, Loyal acquiescence in the said declaration by our board seems to make it necessary that pending his appeal Dr. Smith should not teach in the seminary; and

*Whereas*, The board declined to receive his resignation when offered under censure, on the ground that such resignation would seriously prejudice his case before the synod and General Assembly; therefore,

*Resolved*, That Dr. Smith be requested to continue his present relation with the seminary during the coming year, with the understanding that he shall be relieved from teaching in the seminary until such time as final action in his case shall be determined, and that the action of the board last May to the effect that Prof. Smith continue teaching be rescinded.

Thereupon Prof. Smith peremptorily resigned his professorship.

The appeal of Prof. Smith from the decision of the Presbytery of Cincinnati suspending him from the ministry and from his offices was heard by the Synod of Ohio in October. Twelve points of complaint were made:

(1) That the Court erred in allowing members of the presbytery to sit in judgment on the case after they had published opinions of his guilt; (2) that the proceedings were irregular; (3) that the action of the presbytery failed to show that his teaching was contrary to fundamental doctrines; (4) that it was not definite and specific in that it did not define the sense in which the term inspiration was used; (5) irregularity in the statement of charges and specifications, some being founded on a mere inference of the prosecution; (6) declining to receive the whole of certain testimony, a part of which had been accepted; (7) allowing the vote of a member to be recorded and counted in his absence; (8, 9, 10) error in sustaining charges; (11) that certain specifications were grossly exaggerated, others not relevant; (12) that the imposed penalty is excessive, even if the professor were guilty.

The action of the presbytery on all these points was sustained, and the suspension of the appellant was confirmed. Prof. Smith decided to appeal to the General Assembly.

*Committee on Theological Seminaries.*—The General Assembly's special committee of fifteen appointed to prepare and report a plan of control of the theological seminaries which will secure closer relations between the Assembly and

these institutions met in Pittsburg, Pa., in December, and adjourned after three days spent in discussion without completing a report.

*Conference of "Liberal Presbyterians."*—A conference of "Liberal Presbyterians" was held in Cleveland, Ohio, in November. The sessions were private, but on adjournment, Nov. 10, the following declaration of principles was given out:

We, the undersigned, ministers and elders of the Presbyterian Church in the United States of America, being seriously concerned in view of certain facts and tendencies in our Church, hereby make the following statement:

1. We believe that the General Assembly has no right to impose upon the Church new doctrinal statements under the guise of interpretation, whether by deliverance or through judicial process, and, further, that interpretation of doctrine by the courts of the Church ought always to be strictly within the letter of the standards and with sacred regard to the broad and general terms of the reunion of 1870.

2. We believe that the most scrupulous care should be used in all trials for doctrinal divergence from the standards, especially now when a large majority of the presbyteries have expressed, after much deliberation, their dissatisfaction with our Confession of Faith as it stands, their desire for its revision, and many of them their desire for a new creed. We view with grave concern procedures at such a time, conducted by what seems to us interpretations of our standards strained beyond their letter and far beyond any just regard for the compact of the reunion.

3. We believe that no court of our Church has a right by deliverance, or resolution, or rebuke, or otherwise to seek to suppress respectful action by judicatories below it expressive of their anxiety and apprehension concerning anything in the Church which seems to them to imperil the constitutional liberties of the Church or of any of its members. The right of petition and remonstrance must not be denied in the Church of Christ.

4. We believe that the interpretation of one or two phrases in our Book of Discipline as meaning that a prosecuting committee should become from the moment it enters on its work independent of the court which appointed it, capable of living on even after the judicatory has died and of prosecuting after the judicatory has acquitted, is a strained interpretation, leading logically to many absurdities and easily to possible miscarriages of justice. If these phrases are fairly susceptible of such interpretation, they ought to be eliminated from the book.

5. We believe that it is no part of the constitutional power of any court of the Church to warn honest and God-fearing men to withdraw themselves from its ministry or eldership because they can not accept as binding upon them interpretations of doctrines which are outside the letter of the Confession and which have never been settled by the sanction of the presbyteries in any legal way. This method of discipline by withdrawal, enjoined by resolution of a church court, is not provided for in the Book of Discipline. Such warning carries no obligation of obedience.

6. We believe that our Church is broad enough and strong enough to abide by the spirit of the compact of reunion and to embrace in its communion and its ministry all forms and schools of reverent scholarship which accept the essential and necessary articles of our common faith, acknowledging the Lord Jesus as Divine Master and Saviour and the Bible as the only infallible rule of faith and practice.

7. We call upon all Presbyterians to stand together in defense of reasonable liberty of opinion in the Church and of the constitutional rights of individual members wherever assailed, and we heartily approve of the protest of Dr. Herriek Johnson, Dr. Nieceols, and others at the last General Assembly.

8. We do most urgently counsel our brethren who may be perplexed concerning their duty to abide in



the communion and service of the Church, assured that in so doing they remain well within their constitutional rights.

Finally, only a profound sense of the peril that now besets our Church has led us to make this declaration of what seems to us fundamental principles.

**II. Presbyterian Church in the United States.**—The following is the summary of the statistics of this Church as reported to the General Assembly in May, 1893. The summaries for 1891 and 1892 are also given for comparison :

ITEMS.	1891.	1892.	1893.
Synods.....	18	18	18
Presbyteries.....	71	72	72
Candidates.....	371	409	427
Licentiates.....	66	64	74
Ministers.....	1,188	1,239	1,271
Churches.....	2,453	2,572	2,652
Churches organized.....	81	92	82
Churches dissolved.....	19	21	10
Ruling elders.....	7,679	7,859	8,089
Deacons.....	5,865	6,128	6,355
Added on examination.....	11,024	11,224	12,187
Total communicants.....	174,065	182,516	188,546
Adults baptized.....	8,853	8,385	4,226
Infants baptized.....	5,300	5,025	5,264
Baptized noncommunicants.....	35,363	35,905	37,275
Teachers in Sunday schools.....	13,972	16,271	16,647
Scholars in Sunday schools.....	117,419	113,852	119,754
<i>Contributions :</i>			
Sustentation.....	\$57,572	\$47,011	\$45,762
Evangelistic.....	75,778	90,139	84,186
Invalid fund.....	15,393	15,455	14,131
Foreign missions.....	105,368	118,442	120,954
Education.....	44,774	47,937	53,527
Publication.....	9,211	9,264	9,898
Colored evangelization.....	8,988	8,355	11,720
Church erection.....	30,067	40,329	28,711
Bible cause.....	4,592	5,459	4,407
Presbyterial.....	14,365	16,201	14,982
Pastors' salaries.....	717,369	776,592	808,784
Congregational.....	619,273	627,876	621,792
Miscellaneous.....	114,590	117,490	124,776
Total.....	\$1,817,335	\$1,921,630	\$1,948,580

The Executive Committee on Home Missions reported to the General Assembly that the whole amount of funds in its hands during the year had been \$86,865, of which the treasurer had disbursed \$77,649. Thirty-four churches had been aided from the Church Erection and Loan fund, and 36 white congregations from the regular Loan fund; 237 ministers and licentiates ministering to weak congregations had been assisted from the Sustentation fund; 9 ministers and 3 teachers among the Indians, and 44 ministers engaged in evangelistic work had been aided from the Evangelistic and Indian Missions fund; and 145 names were enrolled of beneficiaries of the Invalid fund.

The Committee of Colored Evangelization reported that its receipts for the year from all sources had been \$10,189, an increase of 15 per cent. over the previous year. Work was done in all the Southern States except West Virginia and Arkansas. Two colored evangelists had been employed. Thirty-three ministers and licentiates had been aided in supplying 69 churches. Three schools had been conducted, in which colored children were taught daily in the Bible, the Catechism, and other branches. Tuscaloosa Institute for the education of colored ministers had gone on without interruption and successfully. The committee, owing to a misunderstanding of the action of the last Assembly, had not succeeded in arranging a confer-

ence with the Northern Church on co-operation. Another conference was asked for on propositions to unite the work of the Church in behalf of the negro in an effort to build up an independent negro Presbyterian Church; or, failing to agree upon this, to bring the work of the two churches in this cause into closer sympathy by practical co-operation in every way possible. The colored work at present embraced 43 ministers, 4 licentiates, 18 candidates, 67 churches, 1,682 members, and 1,760 pupils in Sabbath schools; 214 members had been added to the churches during the year, and \$2,205 had been contributed by the churches.

The receipts from all sources for foreign missions had been \$127,811. Nineteen missionaries had been added to the force in the field, 7 of whom went out to open a mission in Corea, and 30 candidates were before the Executive Committee ready to go. Against these the force in the field had been reduced by the death of several missionaries and the retirement of others. The missionaries in the Grecian countries had all been withdrawn, and the work there was left entirely in the hands of the native Church.

The General Assembly met in Macon, Ga., May 18. Judge J. W. Lapsley, of Montgomery, Ala., was chosen moderator, this being the first time in the history of the Church that a layman had been elected to that position. The committee appointed by the previous General Assembly to call a convention of colored Presbyterian ministers and churches with a view to organizing an independent colored synod reported that the commissioner with whom it was acting had visited and corresponded with the colored brethren very fully, and had ascertained that they were not yet prepared for that step; hence the convention had not been called, and there had been no meeting of the committee. A plan was approved for the organization and operation of a home and school for the orphans of ministers and the children of foreign missionaries who have to be sent home for education. A report of a committee which had been appointed to consider the subject of young people's societies was ordered published, and majority and minority reports on the same of a special committee of the General Assembly were referred to a special committee to report to the next Assembly. The report on the theological seminaries declared that "the orthodoxy and diligence and fidelity of those who teach and those who are taught, the unbroken harmony in the boards of directors, and the healthful pecuniary condition of each institution are occasions of great thanksgiving to the God of our fathers." The Assembly recommended that in selecting professors for the several theological seminaries due regard should be had for the best interests of the other seminaries. The "Narrative of the State of Religion" represented that in the matter of Sabbath observance there was not cause for congratulation. "Public opinion is lax, and the influence of public opinion is being felt by our people; . . . evangelical Christianity does not present an unbroken opposition to Sabbath desecration, nor do our own people. The number of our people who encourage the Sunday mail, Sunday travel, and the Sunday newspaper is appalling." The Assembly resolved that having in a former deliverance

condemned in most unequivocal terms the publication and reading of Sunday newspapers, and having earnestly advised all its people not to read newspapers publishing Sunday editions, it reaffirmed the former deliverance. The Assembly declared that while the usage of the Church was to grant letters of dismission to members in good and regular standing to churches not connected with the Assembly, such letters could not be demanded as a matter of right. An *ad interim* committee was appointed to consider and report to the next General Assembly concerning the advisability of making such changes in the requirements for licensure as may be necessary to correct what seemed to be a growing irregularity (in presbyteries permitting candidates to try their gifts in preaching before licensure). A deliverance formerly adopted was reiterated—that, in the opinion of the Assembly, the Scriptural wine to be used in the Lord's Supper is the fermented grape juice. The Assembly addressed a request to Congress to repeal the "Geary Chinese Exclusion act," because "it is fraught with great danger to the interest and lives of Chinese Christians in America, and of American Christians and missionaries in China."

On the subject of dancing the Assembly advised the sessions to proceed in the case of members indulging in the amusement by faithful and affectionate instruction from the pulpit, as well as in private by admonition and other suitable measures; "but, when all other means fail, then . . . to such methods of discipline as shall separate from the Church those who love the world and practice conformity thereto rather than to the law of Christ." It further enjoined "the absolute necessity of enforcing 'the discipline provided by our constitution against offenses,' under the word offenses including attendance by members upon theatrical exhibitions and performances and promiscuous dancing."

**III. United Presbyterian Church in North America.**—The following is a summary of the statistics of this Church as they were reported to the General Assembly in May, 1893: Number of synods, 10; of presbyteries, 62; of ministers, 805; of congregations, 935; of pastoral charges, 759; of members, 111,119; of Sabbath schools, 1,116, with 11,115 officers and teachers and 96,908 pupils; of young people's societies, 654, with 28,092 members. Number of ministers ordained during the year, 32; of members received on profession, 7,174; of baptisms, 1,518 of adults and 3,911 of infants. Number of mission stations, 207, of which 33 were formed during the year. Amount of contributions: For salaries of ministers, \$563,020; for congregational purposes, \$437,550; for the boards, \$290,826; for general purposes, \$108,694; total, \$1,400,090; average per member, \$14.17; average salaries of pastors, \$1,033.

The Board of Home Missions returned its total receipts for the year as \$49,321. Two hundred and nine stations had received aid, and returned 13,179 communicants, with an average attendance at divine service of 16,871, an increase by profession of 1,223, and a net gain of 14,163, or 10.4 per cent. The aided stations had contributed \$16,825 to the boards and \$60,011 for salaries.

The total receipts of the Board of Missions to the Freedmen were \$45,246, and its total expenditures were \$46,044. The Woman's Auxiliary Board had assisted by paying the salaries of all industrial teachers and Bible readers, to the amount of \$3,616. Seven stations were occupied, with 5 congregations, 9 Sabbath schools, 418 communicants, 2,678 pupils in Sabbath schools, 6 ordained ministers, 1 licentiate, 47 other missionaries (10 of the missionaries colored), and a total enrollment in schools of 2,810.

The receipts of the Board of Foreign Missions for the year had been \$115,893. It reported of the missions in Egypt and India: Number of foreign missionaries, including women and medical missionaries, 82; of native workers, including ordained ministers, licentiates, and students, etc., 580; of churches, 41, with 10,641 communicants; of additions during the year by profession of faith, 929; of baptisms, 107; of schools, 264, with 12,068 pupils; of Sabbath schools, 238, with 6,766 pupils. Total amount of contributions by the two missions, \$37,197. The present was the fiftieth year of the foreign mission work of the Church.

The General Assembly met at Monmouth, Ill., May 24. The Rev. James Bruce was chosen moderator. A fraternal delegate was received from the Holland Reformed Church, and the proposition for union with that body was made the subject of a report. The Church mentioned originated in a secession from the state Church of Holland. A number of people connected with it came to the United States in 1847, and they now have 110 churches, 64 ministers, and a theological seminary with 4 professors and 54 students. The denomination is in harmony with the United Presbyterian Church in many points. It is Calvinistic, having separated from the state Church on questions of doctrinal restriction; rejects the singing of hymns; and holds an extreme position in opposition to secret societies. The General Assembly declared that it was not prepared to accept the plan which had been proposed for the federation of the Churches, for the reasons, among others:

1. Because we do not believe it is proper to accept any plan of federation which would exclude other evangelical churches, although they do not hold to the Presbyterian system of church government.
2. Because that provision in the plan designed to "prevent the multiplication of weak and antagonistic organizations" would impose restraint upon us in our work of home evangelization which we can not accept.
3. Because we have no guarantee in the proposed plan of federation that the position of our Church on the important subject of praise in divine worship would be respected in the meetings of the federal council.
4. Because the ends proposed can be sufficiently secured by the alliance of the Reformed Churches.

The committee on the subject was continued, with instructions to be guided in further negotiations by these directions. The report on education contained a proposition for the institution of a uniform course of study, which the Assembly voted down, and a declaration concerning the control of the theological seminaries that

The existing theological seminaries are entirely under the control of the synods. These synods have



already substantially defined the extent to which they will accept the control of the General Assembly over the seminaries. There are legal questions concerning the charters, and moral questions concerning the rights of control vested in the synods which have founded, and, with great labor, endowed these seminaries, which would prevent the Assembly assuming control of these seminaries without the consent of the synods.

The subject was referred to the next General Assembly, with provisions for obtaining expressions of the views of the presbyteries upon it for the guidance of that body. The Assembly declared its sense to be that to attend the World's Fair in case the gates are open on the Lord's Day "would be a sin against our risen Lord, and a compromise of our Christian testimony. Therefore we pledge ourselves not to patronize the fair by our presence, or in any other way."

**IV. Reformed Presbyterian Church in North America. General Synod.**—The General Synod met in the city of New York, May 18. The Rev. John Alford, of Beaver Falls, Pa., was chosen moderator. The report of the Committee of Conference with committees of other Presbyterian churches on a plan of federation was accepted, and the committee was directed to meet again with the other committees for the further advancement of the scheme. A resolution was adopted permitting the use in congregations of the Church of the Psalms of King David in meter, provided no trouble or dissension is thereby stirred up. A measure was adopted to secure a better way, in the keeping of the accounts, of guarding the various trust funds of the Church. In reference to Sabbath observance the synod requested the President of the United States and the President of the World's Fair Commission to "defend the Sabbath-closing law of the Columbian Exposition through the Attorney-General"; instructed the several committees and boards having funds of the Church "to guard against making investments which compromise the position of the Church on the Sabbath, especially in the bonds and stocks of railroads or other corporations that violate the Sabbath by unnecessary work"; and urging all church members represented by the synod to withhold all patronage from the Columbian Exposition in case its gates should be kept open on the Sabbath. A resolution unanimously passed deprecated the enforcement of the "Chinese Exclusion act"—

First, on the grounds of its inhuman aspects, discriminating as it does between the natives of China and other foreigners in many respects no more desirable either as citizens or residents than the Chinamen; and, second, on the ground that the enforcement of this act will entail difficulties and disabilities on Christian missionaries in China and the Christian religion, and the progress of the gospel would thereby be jeopardized.

The report on the signs of the times characterized the "devices for raising money for church work, which in some churches have supplanted the free-will church offering—such as the church fair, the supper, and the raffle"—as "devices of Satan," who "would get good interest on all the money that he invested"; took notice of the numbers of vagabonds and tramps in the country and their possession of the right of

suffrage; of the power of the liquor interest; and of the increase in the use of narcotics and stimulants, as alarming evils.

**V. Reformed Presbyterian Church. Synod.**—The Synod of the Reformed Presbyterian Church in North America met in Newcastle, Pa., May 31. The Rev. A. J. MacFarland, of St. John, New Brunswick, was chosen moderator. The following statistics were presented: Number of congregations, 122, of which 67 have pastors, and 11 have stated supplies; of ministers, 107, 61 of whom are pastors; of members, 9,874; of pupils in Sabbath schools, 11,824. Whole amount of money raised during the year, including a single gift of \$200,000, \$406,487.

**VI. Associate Reformed Synod of the South.**—The Associate Reformed Synod of the South met in Sharon church, York County, S. C., in October. Reports were made of active home mission work, particularly in the larger towns, as well as in new fields in remote places, and of the condition of the college and theological seminary at Due West, S. C. Negotiations for union have been going on for several years between the synod and the General Assembly of the United Presbyterian Church. The committee having the subject in charge reported the correspondence since the last meeting of the synod, and asked for instructions. Motions to discharge the committee were voted down, and a resolution was adopted to the effect that "while organic union with the United Presbyterian Church is earnestly desired, though it seems for the present impracticable, the Committee on Union be continued."

**VII. Cumberland Presbyterian Church.**—The total receipts of the Board of Missions had been \$51,159, of which \$12,178—the largest amount ever reported—were for foreign missions; \$18,656 for home missions; \$5,473 for the work in Chicago, Ill.; \$3,865 for church erection; and the rest for other purposes. In the last two years the Church had given \$12,000 for the establishment of a Cumberland Presbyterian work in Chicago. The mission in Japan showed a gain of 10 per cent. in members over the previous year, and the progress there generally had been very gratifying considering the small number of missionaries. The mission in Mexico had suffered the loss of two missionaries on account of ill health, but was in other respects making substantial progress. The Board of Missions was instructed by the General Assembly to examine into the promise of Indo-China as a mission field, and, if the result be favorable, to proceed to open a mission there. The year's receipts of the Woman's Board of Missions had been \$13,875.

The sixty-third General Assembly met at Little Rock, Ark., May 18. The Rev. W. T. Ferguson, of Illinois, was chosen moderator. An address of welcome was made in behalf of the State by Gov. Fishback, who said that there were in that State more than 3,500 churches, or one to every 322 inhabitants, and that within the past ten years there had been established there more than 1,700 churches, or nearly one for every other day during the entire period. Of the 29 denominations represented in the State, the Cumberland Presbyterians had more than 300 churches and nearly 15,000 members.

The question of the right of a woman to sit in the Assembly was raised when the name of Mrs. Pollie L. Clagett was called as a commissioner by the clerk. Objection was made to the recognition of Mrs. Clagett as a member of the Assembly, and the case was referred to a committee. The committee brought in two reports. The majority report held that, in view of the action of the previous General Assembly, Mrs. Clagett was entitled to a seat as a delegate, and recommended that her name be enrolled as a commissioner, this recommendation being understood not as passing upon the legal or constitutional aspect of the question, but as being in view of the action of the previous General Assembly. The minority of the committee regarded the question to be decided as a constitutional one; held that the action of the previous General Assembly was in abeyance; and therefore recommended that the Assembly should declare that under the constitution at this time women were not eligible to be made ruling elders, and Mrs. Clagett was ineligible to a seat as commissioner. The majority report was adopted, and the woman elder was admitted to her seat. Subsequently the General Assembly, recognizing the existence of honest and earnest differences of opinion within the denomination as to the eligibility of women to the office of ruling elder and deacon, and concerning the binding effect of the deliverance on that subject made by the General Assembly of 1892, in order to settle the matter satisfactorily to the Church, and without intending to express any opinion on the subject, proposed alternative sets of amendments to the constitution to be submitted to the presbyteries for their adoption or rejection. One set of amendments prescribes the substitution of the word *persons* for *men* in certain sections bearing on the subject, and a change in another section so that it shall read: "Any member of the Church, male or female, of mature age and in full connection, shall be eligible to the office of ruling elder or deacon." The other set of amendments proposes the substitution of the words *males only* for *men*. The churches of the denomination were requested not to ordain other woman elders till final action shall have been taken on these amendments.

#### VIII. Presbyterian Church in Canada.—

The statistical reports of this Church show an increase of 283 churches and stations supplied. The whole number of communicants is given as 173,037, or 8,681 more than in 1892; number of baptisms during the year, 10,937, of which 10,061 were of infants; total amount paid for salaries, \$832,017, an average of \$917 per pastor, or \$4.81 per member; amount paid for congregational purposes, \$1,653,216, or \$9.55 per member; receipts for the various schemes of the Church, \$295,475; total contributions for all purposes, \$1,996,171. Since the union, in 1875, the number of families and of members and the revenues of the Church have doubled.

The total receipts for French evangelization had been \$45,000. Two pastors and 4 missionary colporteurs had labored in Ontario; 1 pastor and 2 missionaries in New Brunswick; 18 pastors, 12 missionaries, 7 missionary colporteurs, and 26 teachers in the province of Quebec. Thirty-seven congregations and mission fields,

with 96 preaching stations, had been supplied, and with these were connected 690 Protestant families. One hundred and ninety-two persons had united with the Church, making the whole number 984. Two new fields had been occupied.

The Board of Foreign Missions had received, from the Eastern section, 26,248; from the Western section, \$103,407. Besides the missions in the New Hebrides, Trinidad, India, China, and Formosa, missions were sustained among the Chinese in British Columbia and the Indians of the Northwest Territory. The entire missionary force included 35 ordained missionaries, 32 woman teachers, 11 medical missionaries, 6 of whom were women, and 324 native helpers of various grades.

The General Assembly met at Brantford, Ontario, June 14. The Rev. Thomas Sedgwick, D. D., of Tatamagouche, Nova Scotia, was chosen moderator. An overture was received from the Presbytery of Calgary, calling attention to the need of work for the evangelization of the Mormons in the Northwest. The subject was referred to the Home Mission Committee. An overture from the Presbytery of Maitland called attention to an address delivered on Feb. 27 by Prof. John Campbell, of Presbyterian College, Montreal, at King's College, Kingston, on the "Perfect Book or the Perfect Father," as containing language highly derogatory to the character of God, to the character and inspiration of the Scriptures, and the characters and writings of the inspired penmen, etc., and asked the Assembly to take action in the matter. The case being already before the Presbytery of Montreal, the presbytery was left to proceed in the constitutional way in dealing with it. The committee appointed by the previous General Assembly on the organization of the young people of the Church reported in favor of organizing them along the lines and upon the basis of the Young People's Society of Christian Endeavor. There were 805 societies of that organization in the Church, and they could not be disbanded. The committee hoped to see the society more Presbyterian, it being now too Congregational. The presbyteries were advised to hold stated conferences on the subject of Sabbath observance, and asked to obtain exact information concerning the state of the question within their bounds. The failure of the Parliament to pass a stronger law on the subject was regretted, and the attention of the Government was called to Sabbath labor going on in some of its works. The Committee on Colleges and their relation to the Church reported concerning the method of appointing professors in them, and suggested measures for bringing the appointments more directly under the control of the General Assembly. The report was referred to the presbyteries and the college boards and senates for advice. The Assembly expressed itself ready to entertain the question of union with other evangelical bodies. A committee on the general subject of union was appointed, with instructions to hold itself ready to confer with any similar bodies which may be appointed on the subject by other Churches.

*Case of Prof. Campbell.*—Charges were presented in the Presbytery of Montreal in June



against Dr. John Campbell, Professor of Church History and Apologetics in the Presbyterian College, Montreal, of teaching heresy in a Sunday afternoon lecture delivered at Queen's University, Toronto, Feb. 27, 1893. The lecture was on "The Perfect Book or the Perfect Father," and, it was alleged, contained expressions impugning the infallibility of the Bible and the perfection of the character of God, as described in it. At a meeting of the presbytery held July 14, a committee which had been appointed to confer with Prof. Campbell reported that in an interview with them he acknowledged that he had spoken somewhat strongly in his lecture, but declared that he still adhered to the main position taken in it, "namely, his disbelief in the entire inerrancy of the inspired revelation of the Old Testament." Prof. Campbell then presented a statement to the presbytery embodying a more explicit definition of his views.

A "libel" against Prof. Campbell was draughted, which, as amended at the meeting of the presbytery on Aug. 1, charged him with holding and teaching (1) a view of the inspiration of the Holy Scriptures which impugns and discredits them as the supreme and infallible source of religious truth; and (2) a view of God which sets him forth as one who does not smite either in the way of punishment or discipline, and who has nothing to do with the judging or punishing of the wicked. The libel was declared relevant. The trial took place at the meeting of the presbytery, Sept. 12, when, after hearing Prof. Campbell again in his own defense and the argument of the prosecution, the court found the libel sustained in both counts. The defendant entered a protest against the decision and an appeal to the Synod of Ottawa, giving as the ground of his action "that the presbytery, in the consideration of the arguments on which the decision was based, failed to weigh the Scriptural ones presented by the defense, which the appellant regards as sufficient to exonerate him from the charges contained in the libel." In reply to this the presbytery set forth that it had "had before it all the arguments and Scriptural references, written and oral, used by Prof. Campbell in his defense, before coming to a judgment in the counts in the libel, but it was unable to discover in them any material modification of the views set forth in the printed address which occasioned the process against him. Besides, when asked whether he withdrew or modified the views complained of, Prof. Campbell declined to comply, and therefore all his pleadings before the court were properly regarded as an attempt to justify the statements of the printed lectures founded in the libel rather than the manifestation of a desire to withdraw or modify them."

**IX. Church of Scotland.**—The Committee on the Statistics of the Church reported to the General Assembly in May that the whole number of communicants was 604,984, showing an increase of 5,453. The number of elders had increased from 8,856 to 9,085. The total of contributions for the year amounted to £360,587, a decrease of £15,482 from the previous year, being mainly due to the falling off of legacies. The total expenditure for foreign missions had been £10,894, showing an increase of £2,516. The missionary property was valued at £550,-

150. The European mission staff numbered 40 men, with 24 wives of missionaries. Two hundred and seventy-one Christian natives, 8 of whom were ministers, were employed in the service of the mission. Eight hundred and twenty-five persons had been baptized during the year in the various mission fields.

The General Assembly met in Edinburgh, May 18. The Rev. Dr. John Marshall Lang, of Glasgow, was chosen moderator. Prof. Charteris gave notice of a motion, pertinent to the jubilee of the Free Church, to the effect that the Assembly, while it firmly adhered to the position maintained fifty years ago by their predecessors, who nobly struggled to maintain their national Church, record its admiration of the heroism displayed and the sacrifices made for conscience' sake by those who then seceded.

An expression of sympathy with the Irish Presbyterian Church in its apprehensions of disaster to follow the establishment of home rule in Ireland was adopted.

The report of the Commission on the Religious Condition of the People referred to the improved condition of farm servants in respect to wages, but regretted their practical exclusion from society and the consequent temptations to immorality. The report of the Committee on Church Interests defined the position of the Church to be one of opposition to any action of Parliament reversing the ecclesiastical policy of centuries in the relations of Church and state till Scotland had unmistakably declared its mind on the subject, and of reliance on the pledge of the Government for the observance of that condition. The Committee on the Proper Conduct of Public Worship and the Celebration of the Sacraments recommended the preparation of a table or tables of Scriptural readings, to embrace every day in the year, for use in public worship; the printing of the Apostles' and Nicene Creeds at the end of the Hymnal; the giving of authority to ministers to administer the sacrament to sick or aged persons at their homes; and the authorization of a religious service at the burial of the dead, a part of which may be conducted at the grave. The report was adopted and the committee was ordered to report to the next Assembly the replies from presbyteries. Nearly 32,000 persons, showing a considerable increase from the previous year, were returned as belonging to strictly Church temperance societies.

**X. Free Church of Scotland.**—The General Assembly met in Edinburgh, May 18. The Rev. Walter C. Smith, of Edinburgh, was chosen moderator. The report on the state of religion and morals cited several instances showing that observance of the rules was relaxed in some parts of the Church, with detrimental influences on morality. The present meeting of the Assembly marked the fiftieth year of the independence of the Church, and was made the occasion of celebrating its jubilee. A congratulatory letter on the subject from Mr. Gladstone was read. The moderator delivered a jubilee address. Delegates were present or congratulations received from various churches throughout the world, among which were the United Presbyterian Synod, the Presbyterian Church in Ireland, the Evangelical Missionary Church of Belgium, the Evangelical Society of Geneva, the Welsh Presbyterian

Church, the Presbyterian Church of Canada, the Federal Assembly of Australia and Tasmania, the Churches of New South Wales and Victoria, Otago and Southland, the Presbytery of Natal, the Baptist Union of Great Britain and Ireland, the Presbyterian Church of England, the Wesleyan Conference, the Reformed Church of Holland, the Free Church of Neuchâtel, the Waldensian Church, and the Bohemian Church. Upon the report of the Committee on the Education and Trials of Students, the Assembly agreed to a resolution expressing the opinion that the maintenance of the theological chairs with their present subjects and with no further modifications than the abolition of existing theological tests, as had been recommended by the committee, would be in a high degree anomalous and objectionable. With reference to questions concerning Ireland, the Assembly declared that it was deeply touched by the anxieties arising out of the present political proposals, but could not collectively express an opinion on the political condition. In his address closing the Assembly the moderator remarked that the most interesting feature of the meeting had been the number of those who took part in the disruption in 1843 and had been present at its jubilee commemoration. Of the 474 who signed the Deed of Disruption, only 34 now remained, and of these but 12 had been able to take part in the proceedings of the Assembly. Turning to the subject of thought, the speaker said that the method of scientific criticism had already got a footing in the Church and established the right to be there without injury to their belief in Christ or to their reliance on the sacred records. Let them possess their souls in patience. The faith by which they lived had its roots too deep to be seriously affected by literary criticism. Of course, the Church could not adopt the main scientific and literary results of that half century and remain exactly the same as it was before. Doubtless these had wrought changes in its way of thinking about many things; our ideas of the universe were different from those of our fathers, yet it was God's world to us as much as ever it was to them.

**PRINCE EDWARD ISLAND. Legislative.**—The last session of the General Assembly of the province was opened at Charlottetown on March 8, 1893, and closed on April 20. The Assembly was presided over by Hon. William W. Sullivan, Chief Justice, who had been appointed Administrator of the Government during the absence of Lieut.-Gov. J. S. Carvell.

The most important act was one involving a revision of the Constitution of the province and certain radical changes in the legislative body. During the session of 1892 the General Assembly passed a bill abolishing the Legislative Council, and providing for a legislature of one house only. The Legislative Council agreed to support the measure, and the bill was forthwith submitted to the Lieutenant-Governor, who reserved it for submission to the Governor-General. On the recommendation of a committee of the Privy Council, which held that the Legislature of Prince Edward Island was competent to pass such a measure, the Governor-General took no action on the bill, and Lieut.-Gov. Carvell was so notified. On April 20 the bill

was signed by the Administrator of the Government of the province and became law.

The Legislature of the province henceforth will be composed of the Lieutenant-Governor and one House, to be called the Legislative Assembly. This will be composed of 30 members to represent the 15 electoral districts, 15 of them to be styled Councilors, and 15 Assemblymen. A small property qualification is required of those voting for Councilors. Every Assembly is to continue for four years, unless sooner dissolved by the Lieutenant-Governor, and there is to be a session of the Legislature once at least in every year. Persons employed in any capacity whereby they receive any public money of the province are not eligible as members of the Assembly; neither are clergymen.

Among the acts passed during the session were the following: To incorporate a law society, and to enable the electors of the province to register their votes upon the advisability of the introduction of a law totally prohibiting the importation, manufacture, and sale of intoxicating liquors as a beverage.

**Finances.**—The receipts of the province for the year ending Dec. 31, 1892, amounted to \$245,625.28, and the expenditure to \$283,303.57. The Dominion subsidy of \$183,571.04 to the province for the year was nearly triple the sum received from all other sources of provincial revenues for the same period. The chief items in the expenditure for the year were as follow: Administration of justice, \$16,661.05; education, \$114,570.15; hospital for the insane, \$17,952.37; legislation, \$12,500; public works, \$84,981.21.

**Wealth.**—The inhabitants of Prince Edward Island had on deposit in savings banks in 1893 the sum of \$2,181,000, while on entering the confederation in 1873 they had but \$336,000. During the interval the population increased but 15,000, while the deposits increased more than sixfold.

**Education.**—From the annual report of the Chief Superintendent of Education it appears that there were 447 schools in the province in 1892, 538 teachers, and 22,169 pupils enrolled. The average salary paid to first-class male teachers was \$467.50, female \$330; and to second-class teachers \$265.23 and \$209.80 respectively.

The estimate of the sums necessary for the Government for the year ending Dec. 31, 1893, amounted to \$283,945.

**Agriculture.**—The Government of the province collects no statistics of agricultural products. Experiments conducted during 1892 at the Government stock farm show that the ordinary cereals can be successfully produced on the island. The highest yield of wheat produced under those testing operations was 22.66 bushels an acre; of barley, 39.72 bushels; and of oats, 54.11 bushels. The province does much to foster agriculture, and a few years ago a professorship of Agriculture was established in Prince of Wales College.

**Fisheries.**—The total yield of the fisheries in 1892 was \$1,179,856, and in 1891 to \$1,238,733. The number of men employed in 1892 was 5,020. The decline in the product of the fisheries for last year was more than accounted for in the single item of lobsters, the pack of which



was nearly 1,000,000 ears short of that of the preceding year.

**Stock and Dairies.**—Of late years considerable improvements have been made in raising farm stock. In recent exhibitions, open to the whole Dominion, held in Montreal and Hamilton, a large share of the prizes was awarded to the horses of Prince Edward Island. Other farm stock is also raised in large numbers. Within recent years companies have been organized for the manufacture of creamery butter and cheese, and the product of the latter for the season of 1893 was valued at over \$15,000 a month.

**Manufactures.**—The manufactories include starch and soap factories, tanneries, grist, saw and woolen mills, factories for canning and preserving meat and fish, and carriage factories. The capital invested in 1893 was estimated at \$3,143,516; the value of the products at \$4,568,519, and the number of persons employed, 8,506.

**PROTESTANT EPISCOPAL CHURCH IN THE UNITED STATES.** This Church now consists of 53 dioceses and 18 missionary dioceses or jurisdictions, and has 7 missions in foreign lands under the care of bishops. A larger number of missionary bishops were chosen and consecrated in 1893 than in any other year of the Church's history. The revised Prayer Book proves universally acceptable. The diocesan statistics indicate an increase in 1893 over 1892 in the number of clergy, the number of confirmations, the number of communicants, the number of teachers in both Sunday and parochial schools, and the number attending both. A decrease is shown in the number of parishes and organized missions, in the number of baptisms, and in the amounts of contributions. The sources of information in preparing this article are the published reports of Church societies, Pott's "American Church Almanac," Whittaker's "Protestant Episcopal Almanac," and the "Living Church Quarterly." The general summary of statistics for the year is as follows: Number of dioceses, 53; missionary jurisdictions, 18; foreign missionary jurisdictions, 7; bishops, 78; clergy, 4,369; candidates for orders, 480; postulants, 246; lay readers, 1,495; parishes and missions, 5,872; baptisms (infants, 48,083; adults, 11,899); confirmations, 42,410; communicants, 577,814; marriages, 16,955; burials, 32,866; Sunday-school teachers, 44,371; Sunday-school pupils, 404,822; teachers in parish schools, 405; pupils in parish schools, 10,120; hospitals, 33; orphanages, 31; homes, 79; dispensaries, 2; reformatories, 6.

**Domestic and Foreign Missionary Society.**—The annual Missionary Council met in Chicago, Oct. 22, 1893, and continued in session four days. The attendance was large, and hopeful belief in rapid extension of the Church was justified by the knowledge that it had been found necessary during the year to divide the missionary jurisdiction of New Mexico and Arizona into two, to erect, out of the dioceses of Colorado, Florida, and Michigan, the missionary districts of Western Colorado, Southern Florida, and Northern Michigan, and to divide into two the missionary jurisdiction of Washington, and also to appoint a general missionary to the Swedes in this country. Among the resolutions adopted by the Council were the following:

That this Missionary Council desires to put on record its solemn conviction that the enforcement of what is known as "the Geary bill," or any similar legislation in reference to the Chinese residing in this country, will have a most deleterious effect upon the work of Christian missions in China.

That a printed copy of the above resolution be sent to every Senator and member of the Congress of the United States.

This was in conformity with the action of the House of Bishops, which, earlier in the year, had presented the following resolution, adopted by the house, to the President of the United States, the Secretary of State, and other authorities:

That this house desires to place upon record the expression of its deep conviction that legislation calculated to bear specially and hardly upon the Chinese race is not only essentially unjust and in violation of the most venerable traditions of our Government, but is also likely to precipitate an antagonism to American citizens residing in China, which may lead speedily to the expulsion of all such residents from China, and to the ultimate prohibition of the extension of American civilization or any of its benefits to that great empire.

The cost of administering the affairs of the society, and making the work known to the Church, was 8 per cent. of the receipts for missions, or 5 per cent. of all the receipts by the treasurer. The number of contributing congregations was greater than in any previous year, 2,891 contributing to domestic missions, and 3,074, in all, to either domestic or foreign, or to both. The number of congregations in the Church is about 5,499, and the amount contributed was \$358,885.72.

**Domestic Missions.**—The society is responsible for the salaries of the bishops and stipends of the missionaries in 18 missionary jurisdictions, and has given assistance to 37 other dioceses. The whole number of missionaries receiving salaries or stipends during the year was 818. The total receipts were \$342,611.89. From the report of the Commission on Church Work among the Colored People the following extracts are made:

The greater part—in fact, almost the whole—of the work accomplished thus far has been brought into existence by Christian sympathizers in the North. The Episcopal Church not having hitherto realized her duty in this portion of the Master's vineyard, and having allowed other religious bodies to take the lead, must now labor with extra zeal and at some disadvantage, in order to win her place in the affections of the negro. An appropriation of \$59,710 was asked for the coming year, for the purpose of continuing work in 16 States among 7,000,000 colored people.

**Foreign Missions.**—In Africa, China, Japan, and Hayti the Church has 225 stations and out stations and 1 mission school in Greece. The whole number of laborers is 499, of whom 3 are missionary bishops and 1 is the Bishop of the Haytian Church, besides 2 bishops who have resigned their jurisdictions, but still have connection with their respective fields; 75 are presbyters and deacons, of whom 58 are natives of the countries in which they work, and who have been educated in our own mission schools. In China and Japan there are 5 missionary physicians. Including the wives of missionaries, who all participate in the work, there are 41 other foreign lay workers, and there are 372 native catechists, lay readers, teachers, etc. In 29 boarding

schools, including the theological seminaries and a medical school in China, there are 782 pupils, and in 77 day schools there are 2,929 more. These, with the Sunday pupils not otherwise counted, make a total of 5,223 children under instruction. So far as reported, there has been contributed in the several fields toward their own support an aggregate of \$7,488.26. The estimated value of mission property at foreign stations is \$319,131.17. The missionary bishop of Cape Palmas reports that the mission is deeply concerned because of certain claims advanced by the French Government to lands on the Ivory Coast between the Cavalla and San Pedro rivers on which 10 of the mission stations are located. The work of the mission has also been much hindered by a political upheaval in the district. The appropriations for the fiscal year amounted to \$215,282.03, while the resources were but \$204,764.41.

**The Church in Hayti.**—New parish churches have been built, and old ones repaired; primary schools have been established; the usefulness of the Normal School of Rural Pedagogy has increased, and a medical dispensary has been opened. The statistics are as follow: Clergy, 14; mission stations, 19; postulants, 2; lay leaders, 19; teachers, 8; Sunday-school teachers, 10; baptisms, 59; confirmations, 8; communicants, 378; Sunday-school pupils, 216; day-school pupils, 141; contributions, \$2,551.90; estimated value of church property, \$19,730.

**The Mexican Church.**—The original constitution of this Church is, by the Church's own action, temporarily in abeyance. The government is now in the *Cuerpo Ecclesiastico*, which consists of the clergy and lay representatives of the congregations, the episcopal authority being, by election of the *Cuerpo*, in the presiding bishop of the American Church. The Bishop of New Mexico and Arizona is the commissary of the presiding bishop, with power to act for him. The statistics are as follow: Priests, 5; candidates for orders, 5; other readers, 8; congregations, 23; day schools in same, 11; teachers, 11; scholars, 400. (These are only approximate numbers, as the attendance fluctuates considerably, but they are substantially correct.)

**In Europe.**—The churches under the charge of a bishop of the American Church number 8—in France 3, in Germany 1, in Italy 2, in Switzerland 2; clergy 19; parishes and missions, 8; baptisms, 21; confirmations, 57; communicants, 853; being 120 less than were last reported; Sunday-school teachers, 5; scholars, 50; contributions, \$23,802.92.

**The Woman's Auxiliary.**—Much attention was drawn to the Woman's Auxiliary to the Board of Missions at the opening of its twenty-second year. Its meeting, held in Baltimore, in the fall of 1892, was the largest general meeting it had held, over 1,200 women being gathered from 50 dioceses and missionary districts; and its offering—\$20,353.16, of which all but \$685.73 was devoted to the Enrollment fund—was the largest united offering, by many thousand dollars, it had ever made.

The Junior Auxiliary, under the guidance of the Woman's Auxiliary, is especially intended to awaken and sustain the interest of the children in the Church in its missionary work. There are

now 14 dioceses in which diocesan officers have been appointed in special charge of junior work. The following is a summary of the money collected and work accomplished by the Woman's Auxiliary and Junior department in 52 dioceses and 14 missionary jurisdictions in the year Sept. 1, 1892, to Sept. 1, 1893: Money—under appropriation to domestic missions, \$22,477.17; to foreign missions, \$22,385.65; specials: domestic, \$100,859.72; foreign, \$21,498.09; united offering, October, 1892, \$20,353.16; other gifts for Enrollment fund, \$3,134.44; total, \$190,708.38. Missionary boxes, 4,391, whose valuation was \$198,749.84, making a total collection whose value was \$389,458.22. Of this, the Junior Auxiliary contributed in money \$21,897.74, as well as 691 boxes, valued at \$16,788.30. The Lenten offering from Sunday schools was about \$76,000. It is proposed that the Woman's Auxiliary place before itself for its united offering at the next triennial the endowment of the episcopate in a missionary jurisdiction, subject to the approval of the Board of Missions.

**American Church Missionary Society.**—This has 31 missionaries laboring in the home field, and also has charge of the Brazilian and Cuban missions. The former is conducted by 4 presbyters, 1 American teacher, 4 native catechists, and sundry native teachers. It reports 10 chapels, 10 Sunday schools, 4 day schools, and 100 communicants. It was established in 1890 in the southern part of Brazil, and conducts its work in the three cities Porto Alegre, Rio Grande, and Pelotas, and surrounding towns. The services of the Church are translated from the Prayer Book into Portuguese, and the congregations enter with spirit into the responses, the Litany, the chants, and the Holy Communion. The Cuban mission statistics are: Clergy, 3, assisted by sundry lay readers and teachers: chapels, 5; Sunday schools, 5; day schools, 5, with an attendance of 500 scholars. The financial report of the society is as follows: Balance, Aug. 31, 1892, \$21,652.43; received for domestic missions, \$21,068.86; for Cuba, \$1,181.64; for Brazil, \$10,086.83; specials, \$1,015.69; mortgage paid in for reinvestment, \$5,000; total, \$60,005.45; balance, Aug. 31, 1893, \$14,257.73, of which \$12,994.12 is for reinvestment. The securities of the society are valued at \$140,100.

**Work among the Jews.**—The Church Society for promoting Christianity among the Jews reports that the aspects of the field are encouraging. In New York over 30 Jews have during the year confessed themselves convinced of the Messiahship of Jesus, and the schools are doing effective work among the young. The cash receipts for the fiscal year were \$10,612.69; balance from old account, \$3,009.30; total, \$13,621.99. The disbursements amount to \$8,788.81, and the balance on hand is \$4,833.18.

**Building Fund Commission.**—This year, for the first time, the commissioners have found themselves in a position to extend aid by direct gifts. A little over \$600 has been thus appropriated, and a still larger amount is available for similar use. Thirty-five loans were made during the year, their aggregate being \$37,283; 16 loans have been entirely paid off, and the mortgages satisfied. The aggregate amount that has once been loaned and has been returned to the fund



now exceeds \$110,000; not a dollar has been lost out of over 200 loans that have been made. The total amount on loan on Sept. 1 was \$134,823.37; the total number of loans that have been made is 236; the amount contributed is \$239,586.37, of which \$13,344.65 was given this year.

**Religious Orders.**—The religious orders in the Church for men are the Society for the Mission Priests of St. John the Evangelist, founded at Cowley, England, in 1865, established here in 1872; the Order of the Holy Cross, founded in New York in 1881, removed to Maryland in 1892; and the Order of the Brothers of Nazareth, founded in 1886. The sisterhoods of the Church are: All Saints Sisters of the Poor, Baltimore, Md., founded in London in 1858; the Sisters of the Annunciation B. V. M., New York city, incorporated 1893; Sisterhood of the Good Shepherd, New York city; Sisterhood of the Good Shepherd, St. Louis, Mo., incorporated 1867; Sisterhood of the Holy Child Jesus, Albany, N. Y.; Sisterhood of the Holy Communion, New York city; Sisterhood of the Holy Cross, Kansas City, Mo.; Sisterhood of the Holy Nativity, founded 1883; Order of the Holy Rood, a branch in Philadelphia of an English order; Sisterhood of St. John Baptist, New York city, founded at Clewer, England, in 1851, and affiliated as an independent branch in America in 1881; Sisterhood of St. John the Evangelist; Sisterhood of St. Margaret, Boston, Mass., founded in East Grinstead, England, in 1855, and established as an affiliated house in America, 1873; Sisterhood of St. Martha, Louisville, Ky., organized 1875; Sisterhood of St. Mary, New York city, founded 1865; St. Mary, New York city, incorporated 1892; Sisters of St. Mary and All Saints, Baltimore, Md.; Sisters of St. Monica, Fond du Lac, Wis.; Sisterhood of Sts. Philip and James, New Orleans, La.; Order of Deaconesses of the Diocese of Alabama, instituted 1863; Church Training School and Deaconess Home of the Diocese

of Pennsylvania, established 1891; and New York Training School for Deaconesses, established 1890.

**Charities.**—These include 31 orphan asylums, 25 homes for children, 8 homes for children and adults, 8 homes for adults, 25 homes for aged, and 13 summer homes, and also 6 reformatories, 2 dispensaries, and 67 hospitals.

#### **General Condition of the Church's Affairs.**

—During the Church year 4 of her bishops have died, namely: Bishop William Henry Augustus Bissell, of Vermont; Bishop Phillips Brooks, of Massachusetts; Bishop Alexander Gregg, of Texas; and Bishop William Ingraham Kip, of California. The death of 71 presbyters is also reported. Assistant-Bishops George H. Kinsolving and William Ford Bishop have been appointed Bishops of Texas and of California, and William Lawrence has been made Bishop of Massachusetts. Nine other presbyters have been consecrated bishops, namely: Lemuel Henry Wells, Missionary Bishop of Spokane; William Crane Gray, Bishop of Southern Florida; Francis Key Brooke, Missionary Bishop of Oklahoma; William Morris Barker, Missionary Bishop of Western Colorado; Frederick R. Graves, Missionary Bishop of Shanghai; John McKim, Missionary Bishop of Yeddo; Ellison Capers, Assistant Bishop of South Carolina; Thomas Frank Gailor, Assistant Bishop of Tennessee; and Joseph B. Cheshire, Jr., Assistant Bishop of North Carolina. The Bishop-elect of Vermont, Rev. Arthur C. A. Hall, of Cowley St. John's Brotherhood, Oxford, England, having been released by this community and by the English House of Bishops from his obligation of obedience to them, was confirmed by the House of Bishops and will be consecrated early in 1894. Especial cause for rejoicing exists in the fact that, in spite of the financial stringency, there was only a slight decrease in the total amount of contributions.

## Q

**QUEBEC**, a province of the Dominion of Canada; area, about 193,000 square miles; population in 1891, 1,488,586. Capital, Quebec.

**Legislative Session.**—The Legislature was convened Jan. 12, at the call of Lieut.-Gov. Chapleau, who succeeded the Hon. A. R. Angers (retired in December, 1892) in that office. In his opening address he outlined the general scope and main features of legislation for the session. He remarked that since the closing of the last session the financial situation had markedly improved, and that the sums voted for the ordinary expenses of the fiscal year, though \$400,000 less than for the preceding year, would in all probability be more than enough to meet the expenditures.

The Legislature adjourned Feb. 27. The necessity of securing improved agricultural methods throughout the province induced legislation granting assistance to dairying and agricultural societies. The great abuses resulting from the liberal railway policy pursued by the Government in the past have been made well-nigh im-

possible of recurrence by acts providing for protection of the public interests.

The acts of more general public importance passed by the Legislature were:

To amend the law respecting joint-stock companies.  
Respecting the issue of provincial debentures to provide for the redemption of the loan of 20,000,000 francs.

To incorporate The Back River Power Company.

To incorporate the Blandford Railway Company.

To incorporate the Canadian Mutual Loan and Investment Company.

To incorporate the Montcalm Railway Company.

To incorporate the Bellechasse Telephone Company.

To incorporate The Cap Range, Sillery, and St. Lawrence Railway Company.

To incorporate the Gaspasia Railway Company.

To amend the law respecting public instruction.

Respecting subsidies to certain railways.

**Finances.**—The following is the official statement of the provincial revenue and expenditure for the fiscal year ending June 30, 1893:

## REVENUE.

Ordinary revenue.....	\$4,366,147 08
Revenue on capital account.....	25,623 40
Receipts on account of advances.....	50,000 00
Receipts, trust deposits.....	15,770 37
Receipts, reimbursement railway subsidies....	9,757 86
Total.....	\$4,467,278 21

## EXPENDITURE.

Ordinary expenditure.....	\$3,881,205 42
Capital expenditure, public buildings.....	238,264 10
Redemption of funded debt.....	71,053 33
Repayment of trust deposits.....	13,147 08
Repayment of railway guarantee deposits.....	240,405 39
Advances to sufferers by wind storm.....	48,030 89

Total..... \$4,492,106 21

Further payments made during the year from proceeds of loan:

Railway subsidies.....	\$841,085 36
Railway construction.....	9,369 73

Total..... \$850,455 09

On June 30, 1893, the funded debt outstanding was \$25,104,266.66; less sinking fund invested, \$9,994,000; balance, \$15,110,266.66; temporary loans and deposits, \$3,469,946.38; total, \$18,580,213.04.

The loan of 20,000,000 francs negotiated by Hon. H. Mercier a few years ago in Paris matured July 15, 1893. To meet this obligation, Hon. John S. Hall negotiated, in May last, a second loan of 20,000,000 francs. The loan was for two years, bearing interest at 4 per cent. per annum, and payable semi-annually. This loan did not increase the funded debt of the province.

**Real Estate.**—Assuming municipal returns for assessment purposes as representing half the actual value of real estate, the value of all the taxable real estate in the province would amount to about \$382,000,000. The value of the property in the province which is not taxed is equal to \$69,000,000, the property in Montreal alone that pays no taxes amounting to \$21,000,000. Nearly all this untaxed property throughout the province is exempt on religious grounds, and greatly increases the burden of general taxation.

In addition to the Dominion subsidy of \$1,278,952.80 to the Province of Quebec for the fiscal year 1893-'94, the following, among other less important amounts, were granted at the last session of the Canadian Parliament: For public works, \$126,090; harbors and rivers, \$32,100; Soulanges Canal, \$1,000,000; St. Lawrence river and canals, \$250,000; fisheries, \$16,000; collection of revenue customs, \$210,345; and Lachine Canal, \$50,000.

**Industries.**—The lumber industry is the most important in the province. The revenue derived by the Provincial Government from the woods and forests for the year ending June 30, 1893, amounted to \$888,722, being \$264,724 in excess of the revenue from this source for the year before.

The following is a close approximation of the manufactures of Quebec for the last fiscal year: Number of establishments in operation, 24,112; capital invested, \$120,969,000; number of employees, 118,830; wages paid, \$32,600,000; and the value of the products, \$155,295,000.

**Education.**—During the year ending June 30 last, the amount expended by the Government of the province for public instruction was \$390,509.67. This, added to the amounts paid by municipalities and cities for the support of schools for the year, would make the total expenditure for public instruction over \$4,000,000.

**Exodus of French Canadians.**—The emigration of French Canadians from the rural districts to the cities, and to the United States, was made the subject of a parliamentary inquiry during the session of 1892, and a committee was appointed to institute an investigation. This committee submitted its report at the last session of the Legislature, in which it assigned as the chief causes old-fashioned and unscientific methods of agriculture, extravagance and love of dress and display, natural love of travel and adventure, great cost of judicial proceedings, the credit system, and the higher wages obtainable in the United States.

The closing of many manufacturing establishments last summer in the New England States led many thousand French-Canadian artisans to return to the province.

**Pilgrimages.**—The pilgrimages to the shrine of Ste. Anne, at Ste. Anne de Beaupré, a pretty village on the St. Lawrence, 21 miles from Quebec, have of late assumed great magnitude. Probably in no other country in the world would a railroad be specially built for the convenience of pilgrims. This was the main, if not the sole reason for the construction, a few years ago, of the Ste. Anne Railway from Quebec to Ste. Anne de Beaupré. A few days after the opening of the road Cardinal Taschereau visited the village and blessed the railway and all its belongings. Since then the influx of pilgrims has enormously increased. In 1892 the number of organized pilgrimages was 149, and the number of pilgrims 124,000. During 1893 the number visiting the shrine was estimated at 134,000. Many miracles are reported to have taken place, and a great number of disused crutches, canes, etc., are exhibited as evidences of the cures effected.

**Railway Extension.**—The most important work of recent railway construction in the province was the completion of the line from Roberval, on Lake St. John, to Chicoutimi, at the head of navigation on Saguenay river. The road is 64 miles long, and is a continuation of the Quebec and Lake St. John Railway, 180 miles long, connecting Quebec with Lake St. John and the fishing region.

## R

**RAMIE, CULTIVATION AND MANUFACTURE OF.** Ramie is the Malay name for a broad-leaved, shrubby, fibrous plant of the nettle family (*Urticaceae*), often called the "stingless nettle," known to botanists as the *Bœhmeria nivea*, and sometimes commercially as "rhea"

and "rhœa." In China it is called "*tehou-ma*," in treaty ports of that country "China grass," in Sumatra "*caloe*," and in Europe and America by the Malay name, ramie. It grows with 10 or 15 shoots, springing from one root stock, and attains at best a diameter of  $\frac{5}{8}$  of an inch and a



height of 3 to 8 feet. Three varieties are used in the manufacture of textile fabrics, cordage, paper, and other things. In the order of their values, these are: Green ramie, or *ramie verte* (*Urtica utilis tenacissima*); white ramie, or *ramie blanche* (*Urtica nivea*); and another species of white ramie, commonly called *candicans* (*Urtica candicans*). Green ramie grows to a height of 7 feet, and is especially distinguished from the other varieties by the height and by the leaf's being heart-shaped toward the petiole. The leaf is light green, but the under side is usually covered with a grayish down, which appears in the squares formed by prominent but pale-green veins. This variety is of very vigorous growth, producing more stalks to the plant and more abundant and better fiber than the others, and from the remarkably tenacious quality of the fiber it is called the *tenacissima*. It grows in the warmest climates of the world, but resists cold to the extreme of 8° centigrade, and if certain precautions are taken, it supports 10°; but it requires a high and even temperature during the period of vegetation. Manufacturers pay the highest prices for the raw material of this variety.

The white ramie, or *nivea*, grows nearly as high as the green ramie, has a leaf slightly tapering toward the petiole, the upper side bright green and the under side covered with down that is snow white on the young leaves, and silvery to light gray as they mature, with veins slightly reddish. When it is dry the leaves recover whiteness and the veins are red brown. This variety resists the cold better than the green ramie, but grows—in Europe and America, at least—a fiber less in quantity and inferior in quality. M. P.-A. Favier, of France, the chief authority on this subject, considers the *nivea* to be the same variety as the *tchou-ma* of China, which produces a magnificent fiber.

The ramie *candicans* grows to a height of 3 feet, which distinguishes it from the other two varieties; but other marks are in the leaf, which tapers very much toward the petiole, and is dark green on the upper side and grayish white on the under side. It is of small importance.

The ramie stalk consists of an outer bark, which, like the leaves, is useless except for fuel to run the decorticators and to return to the soil as a fertilizer. This covers an inner bark or bast, which contains the textile fiber besides other tissues and mucilaginous substances that must be removed before the fiber can be manufactured. The seeds, resembling hemp seed in shape, are either jet black or pure white, and are extensively used in confectionery by the Chinese. The plant is propagated by seed, by cuttings, by layers, and by division of the roots. In raising from the seed, the greatest care is necessary. The seed is so small that planting in the field is extremely uncertain, and hot-house planting is preferable. After sowing, the seeds are covered thinly with sifted earth, and shaded from the sun till the plants are 2 or 3 inches high. Then sunlight is admitted gradually, and after five or six weeks they are strong enough to be transplanted. The East India method is to propagate by cuttings of the spring-grown stems when they are fully ripe and the epidermis has turned brown. The stem is cut into lengths to include 3 buds, and care is

taken to leave  $\frac{1}{4}$  of an inch above and below the buds. These are planted a foot apart, with the central bud on a level with the soil, and, in fair weather, they are shaded from the sun for ten days or more. As the plants mature, they are placed farther apart, to an average distance of 3 feet. Propagation by division of the roots of fully matured plants is conceded to be the most practical method and the one that gives the best results in America. Roots are planted from 2 to 4 feet apart, in furrows 5 or 6 inches deep, and at first are hilled like corn or potatoes; weeds are kept down till the plant is well started, after which they are kept down without labor by the rankness of the ramie's growth and the density of its foliage. In India a rich loam has been found to suit the plant best, but it will grow in almost any soil there, provided there is plenty of moisture and thorough drainage. Everywhere that it has been tried in a wet soil it has failed to thrive. It is reported to the United States Government by Charles Richards Dodge, special agent in charge of fiber investigations for the Department of Agriculture, that "the ground must be well prepared by plowing at least 10 inches deep, well pulverized, and, if not naturally rich, well fertilized." In the last report (1891) of the agricultural experiment stations of the University of California, Prof. Eugene W. Hilgard, Director of the Stations, says: "It is hardly necessary to remind any intelligent farmer that only strong soils can be expected to produce in one season a crop of 10 tons per acre of dry stalks of any kind, and that few can continue to produce such crops for many years without substantial returns to the land, no matter how fertile originally; but there is no reason why the offal of the ramie crop should not be regularly returned to the soil. The leaves can be and usually are dealt with by stripping the stalk on the ground, leaving them where they grew. As to the stalks, it is true that with 3 or 4 cuts per season it will be difficult to deal with the large mass of refuse by spreading it on the stubble, although in the more northerly portions of the area of cultivation it may be desirable to use this material for protection against frost. But as the return must either be made or fertilizers furnished, the proper mode of procedure will be to make compost heaps of the trash, and thus render it less bulky and more convenient for spreading on the stubble after the last cut." In connection with the preparation of the stalks for manufacture it is shown, from Mr. Dodge's reports, that about one quarter of the refuse may be used to fuel the decorticators, leaving almost the exact quantity desirable for fertilization. Prof. Hilgard continues: "This, in the case of strong soils, is all that will be required to keep up production for a long time, although the raw fiber sold represents a larger portion of the soil's plant food than in the case of cotton, in which the return of seed and stalk will maintain production indefinitely on any soil capable of yielding a profitable crop. When no returns are made, ramie will prove even a more exhaustive crop than is cotton when the seed is not returned; and those engaging in its culture had better understand from the outset that they can 'rob the soil' more effectually than with wheat. On the strong black adobe soil of the Berkeley experimental plot, where purposely

no return or fertilization of any kind has taken place, the crop of 1890 was fully as large as any previous one within the four years in which weighings had been made."

French authorities say that in all parts of the world ramie is most successfully grown within the belt bounded by the forty-third parallels; and the nearer to the equator and more moist the atmosphere, the greater the success, given the chief necessity, a porous soil. Within the first year after planting the ramie yields at least one good crop in northerly countries, and two in the South; and thereafter for five years it yields from two to five cuttings a year. In France, Spain, and elsewhere, between the thirty-eighth and the forty-second parallels, the yield is about two crops a year; in the region of the thirtieth parallel there are three crops, and still nearer the equator, as India, Algiers, Florida, etc., there are four good annual crops; in Mexico and in Venezuela there are at least five. In well-cultivated soils one acre grows about 1,400 plants, and the yield, weighed dry and without the leaves, is, in round numbers, first year, 3,500 pounds; second year, 7,000 pounds; third year, 1,058 pounds; fourth and subsequent years, 1,500 pounds, which is sometimes increased to 1,800 pounds.

In harvesting, the stalk is cut within 6 inches of the ground, when on the oldest portions the outside bark begins to turn brown. In dry climates it can be gathered in large masses and so transported to be decorticated green, or to be dried in the sun; but in moist climates great care must be taken to decorticate it green at once and on the field, or to dry partly by kiln. Most of the ramie produced in the world at present is grown in China, where it has been cultivated and the fiber made into a variety of useful articles from time immemorial. According to M. Favier, it is the white ramie, or *nivea*, that is there cultivated to the highest degree of fiber quality yet known, equal to, if not surpassing, the best results obtained elsewhere with the green ramie. The principal fields are in the basin of Yang-tse-Kiang river, in the provinces of Kiangsi, Hupeh, and Szchuen, between 30° and 33° north latitude and 100° and 115° east longitude. Kioo-Kiang and Hankow are the shipping ports, from which in 1891 the maximum export of raw material to all countries was 10,000 tons. Most of this goes to Japan. Up to within a few years, the United States Agricultural Department is informed, on good authority, 400 tons (at \$130 a ton) would represent the maximum quantity sent to all European markets taken together. To the United States there has been no export of this fiber, except by experimenters in its manufacture. The soil of the *tchou-ma* districts of China is red clay, mixed with sand, very rich of itself, and restored about every five years. The cuttings are made in May (when the longest and best fiber is obtained), in August, and in October. The stalks are thrown at once into water and rotted (as with hemp), then beaten with a flail, and the outer bark is carried off by water. Another method is to strip off the leaves and outer bark with a knife and slit the fiber into ribbons. The inner bark, or bast, containing the fiber, is dried by two processes. Such fiber as is intended for sewing twine and grass cloth is

dried over a charcoal fire, which gives it a light color, although the Chinese maintain that the light-colored fiber is produced by a different soil from that of the brown fiber, used for fish nets, cordage, etc., which is dried in the sun. The separation of the bark from the bast is done by women and children, and the rudeness of the method tends to injure the fiber as well as to enhance its cost. The yarn for weaving cloth and the many other working materials are made out of the fiber by hand, and without difficulty the gum (one of the chief obstacles in machine work) is removed by soaking in hot water for a short time before using. About 1887 a British merchant of Hankow set up a plant for preparing the fiber by machinery at the small town of Wu-sueh, 30 miles from Kioo-Kiang. It is said that the experiment was successful for a year, after which the natives, believing that there must be a great demand for the fiber, raised the price of the stalks till it was impossible to run the plant at a profit. The Chinese for centuries have used the ramie fiber for fish lines and cordage, on account of its superior firmness and imputrescibility. The outer garment, the long blue robe that is worn by nearly all the Chinese people, and also the exquisite cambrics for the underwear of the nobility, are manufactures of the *tchou-ma*.

Varieties of the plant have long been grown in India, Japan, the Sunda Islands, East Indies, especially near Lahore; in Java, Borneo, Sumatra, Algeria, and Egypt—everywhere that it is known and where hand labor is cheap enough to be employed in separating the fiber from the bark. Experimentally it has been raised in Transcaucasia, in Hungary, southern France, Italy, Spain, and in the British island of Jersey, only to prove, however, that the European climates can not produce remunerative crops. In the Western Hemisphere it flourishes in the West Indies, Hawaiian Islands, Mexico, Guatemala, Colombia, Brazil, and in many parts of the United States.

The introduction of ramie into countries where hand labor has a price has been impracticable until some mechanical, chemical, or other labor-saving process could be found to separate the bark from the bast (decorticate) and remove the gum from the fiber. Two plans have been pursued in the effort to accomplish this. One is the "wet" process, in which the green stalk is operated upon, requiring appliances somewhat distinct from those used in the preparation of hemp or flax fiber. This seems to have the best success in countries having a constantly moist atmosphere. For this, the first process is a breaking of the brittle and brash stems, fresh from the field and stripped of their leaves, by a modification of the ordinary breaking process applied to dry stems of hemp. Then the stalks are rolled into bands for the better preservation of the parallelism of the fiber, and dried by artificial heat, till gum and bark are brittle enough to be removed by beating and combing. Sometimes the crude fiber is passed directly into the alkaline bath (mostly of common soda), which is always required to remove the last of the gummy matter. The final process is combing. In the "dry" process the mechanical operations are substantially the same as in the case



of our familiar fiber plants. The stalks are first allowed to dry in the field, if this can be done, and when dry they are subjected to the action of breaking, and of beating and combing machines that remove stalk and bark, with gum; after which they are put into the alkaline bath, as in the "wet" process.

Some Englishmen were the first to seek to introduce ramie into Europe, about one hundred years ago, and a decorticating and degumming machine was the first requisite, as the want of it has remained the obstacle to ramie's success as a useful commodity in modern commerce. The first attempt to decorticate the plant stalks by machinery was made in 1816 in India, whither England sent a flax and hemp machine for the purpose. It failed, and so also did all other efforts at that time. At the London Exhibition of 1851 the product was shown in every condition from the crude fiber to woven fabrics. Three prizes were awarded, and interest was revived upon the introduction of the plant into several new fields for cultivation; and, somewhat later, still another impulse was given to the search for a decorticating process upon the threatened scarcity of cotton at the outbreak of the civil war in the United States. During the past thirty years there have probably been 100 inventions for this purpose. In England much attention has been given to the matter, and to experimental culture of the plant; and Dr. Morris, of the Royal Kew Gardens, is one of the chief authorities on the subject. In France, where the subject was taken up next and where it has been assiduously pursued for half a century, there is a long list of fiber merchants, manufacturers, and inventors who have become distinguished in their efforts to bring this fiber into popular use. Among them is M. P.-A. Favier, director of the principal ramie factories of France and inventor of the only decorticator that worked successfully. Others are: Alexandre Thibaud, of Nîmes; Dr. Granguard, of Marseilles; Count of Malartie, of Dijon; Dr. Alquié, of Montpelier; Baron de Brais; Numa Bothier; Hardy, of Algiers; Bailly, of Nay; Rolland and Boski, of Paris; Senator Feray, of Essonnes; Goncet de Mas, of Padua; Pinchon, of Rouen; Mouchel, of Elbeuf. These gentlemen, after prolonged failure, have at length produced in France a fabric that has begun to displace flax, hemp, cotton, and silk.

At the outbreak of the civil war in the United States (1861) the first ramie factory of Europe was established by M. Thibaud in Nîmes. It has survived many vicissitudes, and now supplies the mills for the French army. About the same time M. Favier began a public advocacy of the value of the fiber, and the importance of placing it among the chief industries of France, also pursuing his inventions for decorticating and degumming.

In 1881 the first French ramie company was founded and the experimental cultivation of the plant undertaken in several places in France, in the north of Spain, and in Egypt, with factories for decortication. Cultivation did not succeed, and factories at Entraigues, near Avignon, at Voiron, and in the department of the Nord were fed on raw material from China, which was too costly for financial success, but enabled the society to show results. Since then M. Favier has

made still greater improvements on his machines. The stalks, stripped of leaves and of any size or length, are introduced into the machine, an operator being required at each end, to feed in the stalks and remove the fiber. The ribbons are delivered free from wood, parallel and unbroken, without waste. The number of stalks introduced varies from 60 to 100 a minute, and 6,000 to 11,000 pounds of stalks may be passed through the machine in a working day. One-horse power is required to drive the machine, and the refuse of the stalks is used for fuel. The machine is mounted upon wheels. Its weight is about 1 ton, and its cost is about \$400. Calculating upon three cuttings a year and an average crop of 2,640 pounds of green stalks to the acre, and the use of the machine for six weeks at each cutting, one machine will suffice for about 15 acres.

Improved machines for decorticating ramie in the dry state have also proved satisfactory. They are considerably higher in price (\$500 to \$900), the capacity being relatively greater, but have less interest for Americans, as the moist climatic conditions of the most successful ramie-growing districts demand a machine to decorticate the stalks green, and immediately after the cutting, otherwise kiln drying is necessary to prevent great loss from damp heat. The cloth of ramie does not lint. Several of the largest restaurants in Paris have adopted ramie table damask instead of linen. Druggets, curtains, furniture stuffs, and light materials for ladies' robes have the brilliancy of silk; and cordage, fish nets, and sail cloth are not rotted by water. The War Department has adopted it for cordage and cables, war balloons, and powder sacks, and the Bank of France now uses it for bank notes, because it is lighter and at the same time more substantial than the material formerly in use, besides better to print on.

The specific gravity of ramie yarn is less than that of linen yarn in the ratio of 6 to 10, so that 1 kilogramme ( $2\frac{1}{2}$  pounds) of linen yarn No. 10 measures 6,000 metres (over 6,600 yards), while the same weight of ramie yarn measures 10,000 metres. On the other hand, ramie yarn is heavier than cotton in the ratio of 6 to 5. It is easily distinguishable from other yarns by its high luster and silky appearance, and in its fiber by its great length, which is often 25 to 40 centimetres and more (from about 1 to  $1\frac{1}{2}$  yard), by a certain straightness and stiffness, and by the decided superiority in breadth, which is four times that of flax, often six times that of cotton, and twenty times that of silk, while for strength the ramie is at least twice as strong as the best hemp.

Mr. Dodge reports to the United States Department of Agriculture that "a new use for the fiber is in the manufacture of 'absorbent.' It is said that while cotton lint, specially prepared for this purpose, absorbs  $37\frac{1}{2}$  per cent. of water, actual tests show that ramie absorbs 87.9 per cent. This substance is already on the market."

The model ramie factory is that of Valobre, in the Department of Vaucluse, which is now running at considerable profit. It stands on one of the water courses that escape from the celebrated fountain of Vaucluse, and, with its dependencies, occupies more than 12 acres, entirely surrounded by water. The principal buildings form

a hollow square, and include mills of 4,500 spindles and a special twisting and combing apparatus for the material for bank notes. The factory also spins ramie thread for *passementerie* and hosiery, most of which is shipped to England, Germany, and Spain.

In Austria a process for preparing ramie fiber has been patented by Th. Eg. Schiefner, and is in successful operation in a mill at Bregenz, which has been in operation since June, 1890, and another at Eumendingen, Baden. Dr. Karl Hassack says: "By this process is obtained a fiber of pale, yellowish-white color and of silken luster. It is prepared in combing machines for spinning, and finally spun to yarn. Yarns are sometimes found in the market raw white, but generally are bleached or colored, or 'lustered,' in the mills. The last operation imparts to the fiber its complete beauty and silk luster, while raw yarn looks rough and dull on account of numerous projecting fiber ends. The factories at Bregenz and Eumendingen spin in single, double, triple, etc., 15 different sizes of thread." "In Germany," says the same authority, "it is in frequent use by the manufacturers of Berlin, Apolda, and Liegnitz, and its employment is daily gaining ground. Italy and Spain have also taken it up."

In all countries of Europe ramie has been worked almost wholly upon line-spinning machinery, where it is necessary to keep the filaments straight, or parallel, like flax or silk. Both silk and woolen machinery (that for working "long wool") have been used abroad, though the best results of all seem to be produced by flax machinery, modified to the requirements of the new fiber. In the United States the Government and private citizens became interested in the fiber from the showing in the London Exhibition of 1851; in 1855 specimens were obtained for examination, and experiments in culture and manufacture were at once introduced. At the Paris Exposition of 1889 the United States exhibit of ramie, while not large, was sufficient to show that superlative qualities of the fiber can be produced here in unlimited quantities. The Government sent a special agent to the Exposition, who reported on the products, machines, and manufactured fabrics there shown, and further efforts have been made in many ways toward establishing the industry here.

New Jersey some years ago passed a bounty law for the cultivation of the plant, and in Pennsylvania it has been grown with some success; also in North Carolina, South Carolina, Virginia, Georgia, Louisiana, and elsewhere, but the data of actual crops are difficult to obtain except from California, and little more than experimental plantings have been made. California, in 1891, passed an act for the purpose of encouraging the cultivation of ramie in the State, and appropriated \$5,000 each for the two following years to be expended under direction of the State Board of Agriculture for the purchase of ramie roots to the extent of \$1,000 worth in one year, for free distribution to farmers, and in the payment of a bounty of 1 cent a pound for merchantable ramie fiber. Prof. Hilgard says: "By actual trial, the culture of ramie has been found to be readily feasible in all the larger valley regions of the State so far as the

successful growth of the plant is concerned, but it will doubtless prove most profitable where a long growing season combined with irrigation permits of making 3 or 4 cuts annually. In the Kern valley there is little difficulty in getting 4 cuts of good size and quality, and the same is probably true on the stronger soils as far north as Fresno, and southward in the valley of south California. In the Sacramento valley 3 cuts can doubtless be obtained when irrigation is employed, or in naturally moist land. At Berkeley and elsewhere on the immediate coast 2 cuts (the second usually a small one) are all that can be counted on, but in the warm valleys of the Coast range there may be from 2 to 3 full crops. Experiments at the Berkeley Station show an average rate of about 9,000 pounds of dry stalks per acre for the first cut and about 5,210 pounds for the second." Mr. McAfee, of Bakersfield, Cal., says the best fiber is produced when 3 instead of 4 cuts a year are made. The total yield of 3 will not differ materially from that of 4. The San Joaquin Valley Experimental Station reports that ramie grows there successfully, even on light alkali soils, and that it has been distributed to many farmers.

The first United States patent for a decorticator was taken out Sept. 17, 1867, by Dr. Benito Roezl, and within the next few years hundreds of the machines were made in New Orleans and offered for sale at \$225 each; but they failed to work successfully. Other inventions have followed with no better success, and within the past four years at least 10 American machines have been brought before the public. The Agricultural Department, in September, 1892, authorized a trial of ramie decorticators at the Louisiana Sugar Experiment Station, and the Oakburne Plantation, at Lafayette, La., grew stalks to afford tests of ten-hour trials, instead of the usual tests of a few minutes. But 3 machines were entered, and none of them could work the usual run of fiber stalks as they come from the field; or, after running well for a short time, they clogged long before the limit of time was reached.

Both coarse and fine yarns have been carded and spun in this country on cotton and wool machinery, without alteration, and this by the ton. These yarns bring 75 cents to \$1 a pound in the gray, and in colors \$1.50 to \$2 a pound. Cotton, worsted, and silk colors all take readily, and are fast, and jet black has been produced here for the first time. A firm of New England experimenters, in 1890, first degummed and spun ramie in an economical manner. Their degumming is carried only to the point where a *filasse* is produced, which, when separated and broken into short lengths on the Fearnought & Garnet machines, is sufficiently soft and pliant to work well on woolen machinery. Since then some spinners of Paterson, N. J., have produced a high grade of table linen, toweling, laces, plush, chenille, and other fabrics from line ramie, the natural combed fiber. In Jersey City a large company has been established to degum for American manufacturers Chinese ramie.

**REFORMED CHURCHES. I. Reformed Church in America.**—The following is a summary of the statistics of this Church as they were reported to the General Synod in June,



1893: Number of particular synods, 11; of classes, 35; of churches, 603; of ministers, 598; of licentiates, 20; of families, 53,993; total now in communion, 97,520; number of baptized non-communicants, 41,324; of catechumens, 36,037; of Sunday schools, 884, with 119,758 members; of baptisms during the year, 5,597 of infants and 1,194 of adults; of members received on confession, 5,435. Amount of benevolent contributions, \$246,419 for denominational and \$84,030 for other objects; amount of congregational contributions, \$1,095,764. The contributions to the Board of Domestic Missions exceeded \$86,000—the largest amount ever contributed in one year. The board likewise returned a larger number of admissions to the mission churches than in any previous year. The arrangements with the Presbyterians and Congregationalists for the observance of comity in the operations of the home missions had been efficient in preventing unnecessary multiplication of churches and friction resulting therefrom. The board had aided in its Eastern and Western fields 177 churches and missions, having 10,409 members and 13,100 pupils in Sunday schools, in which 1,066 members had been added on confession.

The Board of Foreign Missions returned a total of receipts from all sources of \$111,672. The missions (in China, India, and Japan) included 15 stations, 202 out-stations, 26 ordained and 43 unordained and assistant missionaries, 36 native ordained ministers, 356 other native agents, 55 churches with 5,799 communicants and 467 received on confession during the year, 4 theological schools with 58 students, 14 seminaries with 333 male and 393 females pupils, and 154 day schools, with 4,315 pupils. The hospitals (China and India) had 18,870 patients.

The ninth annual missionary convention of this Church was held in Newark, N. J., Nov. 14 and 15. Subjects pertaining to domestic and foreign missions, the part of the young people in missionary work, and woman's work for missions were discussed.

**General Synod.**—The eighty-second General Synod met in Asbury Park, N. J., June 8. The Rev. Cornelius Brett, D. D., was chosen President. The Special Committee on Federal Union with the Reformed Church in the United States reported that all the classes except that of Arcot, India, which was excused on account of its distance, had reported their approval or disapproval of the union and of the recommendations made in the majority report of the previous General Synod. Sixteen had approved, 18 had disapproved. Among those disapproving the South Classis of Long Island overtured the General Synod to invite the co-operation of the Reformed Church in the United States in perfecting the plan of federal union that shall include all the Reformed Churches holding the presbyterian system. The General Synod adopted the following resolutions and minute:

In view of the nature of the reports received from the classes on the proposed federal union, the following is recommended:

*Whereas*, A majority of the whole number of the classes have reported to this synod their disapproval of the proposed articles of constitution and federal union between the Reformed Church in America and the Reformed Church in the United States with

the amendments and understandings submitted by the last General Synod in order that the mind of the Church might be ascertained; therefore,

*Resolved*, That this synod accepts these reports as evidence that the mind of the Church is not in favor of the adoption of the said proposed articles of constitution and federal union, and that further consideration of the said articles be indefinitely postponed.

While offering this recommendation, the committee deem it proper to add that in their judgment the disapproval reported by a majority of the classes does not in the least degree indicate any want of fraternal affection for and confidence in our brethren of the Reformed Church in the United States. It only indicates that for some reasons in some classes, and for other reasons in other classes, the Church is not ready to consummate this plan of union at this time.

Nor does the disapproval reported cast any reflection upon the commissioners of the two Churches by whom the proposed plan of union was devised. No others stand, or deserve to stand, higher than they in the confidence of their brethren. The task which they undertook was not assumed by themselves, but was imposed upon them by the Churches. It was difficult by reason of both its magnitude and its novelty. It is no disparagement to them that such an attempt does not prove immediately successful. Notwithstanding the partial failure and the consequent disappointment of many cherished hopes, their work has not by any means been in vain. Through the negotiations and correspondence and personal and fraternal intercourse which have been carried on in recent years, the two sister Churches have become better acquainted with each other, the ties of confidence and affection between them have been strengthened, and although the present effort toward a closer external union has not succeeded, it will serve to prepare the way for the success which God will surely grant, and, as we believe, at no distant time. Whether it is advisable at the present time to devise some other and more acceptable plan of union, we leave it to the wisdom of the synod to decide.

Also, without further recommendation, we leave it to the wisdom of the synod to decide what course to adopt concerning the overture from the South Classis of Long Island looking toward a federal union of a broader scope.

The synod commended the subject of the Sunday opening of the Columbian Exposition to the hearts and consciences of the people, urging them to do all in their power to prevent the secularizing of the Lord's Day through the fair; recognized the unanimity of the Chicago brethren and of the Reformed Church generally against Sunday opening; appointed June 25 as a day of special prayer for God's blessing upon his day of rest, and for union in praying "that he will overrule so that the counsels of the ungodly shall be put to naught, and so that our American people may learn to honor him and to be true to their heritage"; and declined to participate in the Parliament of Religions. A resolution of the synod condemned the act of Congress requiring registration of the Chinese as "a direct violation of treaty obligations, a stain on our national honor, prejudicial to American interests, commercial, educational, and religious," and directed a memorial to be sent to the President and Congress asking for its earliest possible repeal. The Arabian mission, which had been established a few years before at Bosrah, Turkey, by individual enterprise, was incorporated with the General Synod's Board of Foreign Missions.

**II. Reformed Church in the United States.**  
—The statistical report of this body for the past

three years, presented to the General Synod in May, gave the following numbers: Of synods, 8; of classes, 56; of ministers, 885; of congregations, 1,583; of members, 212,830; of members unconfirmed, 127,037; of persons confirmed, 32,392; of persons who communed, 160,314; of Sunday schools, 1,563, with 13,319 officers and teachers and 149,023 pupils; of students for the ministry, 285; amount of contributions for benevolence, \$649,892; amount of contributions for congregational purposes, \$3,022,174.

The Home Mission Board reported that the contributions of the Church at large for home missions during the past three years had been \$124,921, while the missions had raised \$27,116 for benevolence, and \$233,946 toward their own support. One hundred and thirty-six missions were supported in various parts of the United States, and with them were connected 157 Sunday schools with 15,749 pupils, teachers, and officers. Efforts were being made to introduce mission work among the Hungarians and Poles in the United States. The services of two ministers from Hungary and Austria had been obtained, they being stationed at Cleveland, Ohio, and Pittsburg, Pa. Both had been successful, and the first Reformed Church for Hungarians was dedicated at Pittsburg in 1892. There were now 16 congregations of this nationality in different parts of the United States. Applications had been received from colonies in New York, New Jersey, Illinois, and Canada for missionaries capable of speaking the Hungarian language. The board had organized church-building funds of \$500 each, of which there were now 24, nearly all of which were loaned to missionaries.

The Board of Foreign Missions had 10 laborers under its care in the foreign field with, in Japan, 9 congregations, 30 preaching stations, 1,730 members, 22 Sunday schools with 922 pupils, and 8 native ministers. The annual revenue for the foreign work had been, in 1890, \$20,260; in 1891, \$19,357; and in 1892, \$25,015. The present indebtedness of the board was \$14,000. Nearly 200 pupils, many of whom were studying for the Christian ministry, were enrolled in the seminary at Sendai, which is described in the report as "the most complete Christian institution of learning in northern Japan." Sixty Sunday schools of the Church in the United States had undertaken to pay \$60 a year toward defraying the expenses of theological students.

The General Synod met at Reading, Pa., May 24. The Rev. Thomas G. Apple, D.D., LL.D., was chosen president. The new constitution reported by the committee having the subject in hand was discussed item by item, and the form determined in which it should be sent down to the classes for their action. A committee reported concerning correspondence which it had had with the Reformed Bund of Germany and Switzerland. The report embodied recommendations for the establishment of port missionaries at Bremen, Hamburg, and other ports of Germany and Holland; that German copies of the proceedings of the Synod be sent to the European synods; and that committees be appointed to take charge of young men coming to the United States to enter the ministry. The Synod directed that a memorial be sent to the Classis

of Amsterdam recognizing the interest given by it to the Church in this country in its early days, and the officers of the Synod were appointed a committee to convey it. A proposition to combine the societies of Andrew and Philip and of Christian Endeavor with the Sunday schools, under one grand organization, to be known as the Reformed League of Young People's Societies, was referred to a committee with instructions to report to the next General Synod a plan for the organization of the young people of the Church. The Synod expressed its approval of the growing interest and increased charities of the Church in behalf of the poor and afflicted, and, declaring that it recognized the right of women to the order and work of deaconness, recommended "the appointment of ladies qualified for this work in such congregations as may feel themselves ready to move in this line of Christian activity." A committee appointed at the previous General Synod to prepare an answer to the question sent up by one of the classes—"whether it is permissible to depart from the mode of baptism which has prevailed in the Reformed Church"—presented a report in which the question was defined as meaning, "Should a minister of the Reformed Church administer baptism by immersion?" and after reviewing the law and course of the Church, recommended the answer, which was adopted by the Synod, "that ministers are required to observe the mode of baptism which has for centuries prevailed in all the historic branches of the Reformed Church." The Synod protested against the purpose of opening the Columbian Exposition on Sunday "as a violation of the Christian sentiment of the American people and of the congressional legislation," and it decided by resolution that it individually or collectively would take no interest in the religious congress in connection with the fair if the doors were open on Sunday. A committee was appointed to consider the overture of the Presbyterian Church in regard to closer union and to make arrangements for carrying into effect a plan for such union. A banquet was given during the meetings of the General Synod in celebration of the one hundredth anniversary of the autonomy of the Church.

The gradual disappearance of the German language from the proceedings of the General Synod is remarked. While at the General Synod of 1869 nearly all the German ministers spoke in their native language, at the General Synod of 1890 very few speeches were made in German, and at the present General Synod "there seemed to be no disposition on the part of any to speak in German."

**III. United Reformed Churches in the Netherlands.**—A union has been effected between the two Free Reformed Churches in the Netherlands, the Christian Reformed Church, which separated from the state Church in 1834, and the Doleerenden, which separated in 1886, and between which no doctrinal differences existed. The first formal steps toward the union were taken in 1892, when the synods of both Churches met at Amsterdam, agreed upon, and effected union. The work was completed at a meeting of the United Synod held at Dort, Aug. 27, 1893. The subject of union of the two theological seminaries—that of Kampen and the



Theological Faculty of the Free University in Amsterdam—was placed in the hands of a committee, to report at the next session of the General Synod, to be held in 1896. The General Synod comprises about 700 churches.

**REORGANIZED CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS**, a church organization incorporated under the State statutes of Illinois and Iowa. It is represented in nearly all the States and Territories of the Union, in parts of Europe, Australia, and the Sandwich and Society Islands. The name Latter-Day Saints finds its special origin or significance among those who trace their religious convictions to the movement that arose in New York State about sixty years ago under the instrumentality of Joseph Smith.

At the time of his death there arose aspirants for leadership which rent the Church into a number of factions, among them being Brigham



JOSEPH SMITH.

Young, who led his portion to the Territory of Utah. The Reorganized Church of Latter-Day Saints was founded by members of the original organization that remained in Illinois and adjoining States, who rejected the claims of such leaders as Young and gathered around the standard of Joseph Smith, son of the prophet. It maintained as its sacred text-books and standard the Bible, the Book of Mormon, and the Doctrine and Covenants. The Book of Mormon is considered as auxiliary to the Bible, and not as superseding it. The Doctrine and Covenants contains reputed revelations through the prophet Joseph Smith, relating principally to church organization and government.

The Reorganized Church, in thus claiming authority for these books, made a marked distinction between themselves and their fellows who departed from them, who took the ground that

"the living oracles" (meaning their priesthood) should be the standard. Each of the books condemns polygamy. The Book of Mormon most emphatically condemns it in the following language: "There shall not any man among you have save it be one wife, and concubines he shall have none; for I the Lord delighteth in the chastity of women." In a suit entered in the Court of Common Pleas in Lake County, Ohio, the following verdict in favor of the Reorganized Church was rendered: "And the Court do further find that the plaintiff, the Reorganized Church of Jesus Christ of Latter-Day Saints, is the true and lawful continuation of, and successor to, the said original Church of Jesus Christ of Latter-Day Saints, organized in 1830, and is entitled in law to all its rights and property." There is now pending a suit in the United States Circuit Court of Western Missouri touching some property in that State. The point of law governing in such cases is, that in the event of dissensions arising in an incorporate body, those holding to the original principles of the body are entitled to the rights of legal succession.

As early as 1863 this Church sent as missionaries to Utah, to combat what they considered the heresy of Young, E. C. Briggs and A. McCord, whose first meetings were held in the parlors of Mrs. Waite, whose husband was at that time Chief Justice of the United States Court in the Territory of Utah.

The Book of Mormon is held to be a record of the ancient inhabitants of America, principally of their religious affairs. Nearly everything that has been published about it rests upon the claims that a manuscript written by Rev. Solomon Spaulding was obtained by Smith and his confederates after the death of Spaulding, and worked over into the Book of Mormon. But the finding of Spaulding's original manuscript by President Fairchild, of Oberlin College, in 1885, settles that phase of the question. President Fairchild, in an article in the "Bibliotheca Sacra," says: "The theory of the origin of the Book of Mormon in the traditional manuscript of Solomon Spaulding will probably have to be relinquished. That manuscript is doubtless now in the possession of Mr. L. L. Rice, of Honolulu, Hawaiian Islands, formerly an antislavery editor in Ohio, and for many years State printer at Columbus. . . . Some other explanation of the Book of Mormon must be found."

The Saints maintain a belief in present revelation not only to the prophet, but to any of its membership, according to their needs. Revelations to the Church that affect the body come through the head of the organization, and are binding only as they are approved by the Church by "common consent." Each quorum or suborganization have ample opportunity to discuss, reject, or otherwise act upon reputed revelations, after which they are submitted to a general conference, which is a representation by delegation of the entire membership. An established rule to govern in such action is that new revelations must be in harmony with the law, the standard books, the Bible, the Book of Mormon, and the Doctrine and Covenants. Their organization includes apostles, prophets, evangelists, pastors, and teachers. Ephesians, iv, and I Corinthians, xii, 28, is the Bible basis for their organic form.

The apostolic powers are vested in a first presidency composed of 3, a quorum of 12 apostles, and 7 quorums of seventies. The local officials are elders, priests, teachers, and deacons. There is also a body composed of 12 high priests called a High Council, who are the highest judicial body in the Church. The duties of these several officials are defined in detail in the Doctrine and Covenants. The temporal and financial departments are under the management of the bishop and his councilors, who have subbishops throughout the Church.

The finances are chiefly for the support of the families of the missionaries and others who give their entire time to the service of the Church, as also for the care of the poor. There are no salaried ministers among them, they claiming that the gospel is "without money and without price," and that they have not the right to make merchandise of it.

Their headquarters are in Lamoni, Iowa, where they have a printing establishment and book bindery. The "Saints Herald," the Church organ, "Zion's Hope," a paper for the young, and "Autumn Leaves," a monthly, are published there.

The numerical strength is something over 30,000. Last year's report at the general annual conference gives an increase by baptisms of 3,069, which is larger than in any previous year. There is in process of erection at Lamoni a college, and also a home for the poor ministers.

**RHODE ISLAND,** a New England State, one of the original thirteen, ratified the Constitution May 29, 1790; area, 1,250 square miles. The population, according to each decennial census, was 68,825 in 1790; 69,122 in 1800; 76,931 in 1810; 83,015 in 1820; 97,199 in 1830; 108,830 in 1840; 147,545 in 1850; 174,620 in 1860; 217,353 in 1870; 276,531 in 1880; and 345,506 in 1890. Capitals, Newport and Providence.

**Government.**—The following were the State officers during the year: Governor, D. Russell Brown, Republican; Lieutenant-Governor, Melville Bull; Secretary of State, George H. Utter; General Treasurer, Samnel Clark; State Auditor and Insurance Commissioner, Albert C. Landers; Attorney-General, Robert W. Burbank; Railroad Commissioner, Edward S. Freeman; Commissioner of Public Schools, Thomas B. Stockwell; Chief Justice of the Supreme Court, Charles Matteson; Associate Justices, Pardon E. Tillinghast, John H. Stiness, George A. Wilbur, Horatio Rogers, and William W. Douglas.

As the May session of the Legislature this year was adjourned by the Governor to January, 1894, before the returns of the April election were canvassed, the six officials first above named held over after the expiration of their term in May till the close of the year.

**Finances.**—For the year 1893 the State treasury statement is as follows: Balance on Jan. 1, 1893, \$100,007.96; total receipts, \$1,338,419.72; total payments, \$1,243,578.37; balance on Jan. 1, 1894, \$194,849.31. While there has been an increase of \$200,220.32 in the annual receipts over the figures for 1892, the yearly expenditures have only increased to the extent of \$129,446.84, of which about \$50,000 may be considered to represent extraordinary appropriations.

The funded State debt on Jan. 1, 1893, was \$1,283,000, of which \$584,000 was paid in July

from the sinking fund, leaving \$699,000 outstanding at the close of the year. As the State then had in its sinking fund more than enough funds to meet this liability, its indebtedness will be seen to be only nominal. In the near future, however, a new debt will be created by the issue and sale of State-house construction bonds, authorized by the Legislature this year.

**Legislative Sessions.**—The General Assembly, elected in 1892, convened at Providence on Jan. 31, and adjourned on May 26. An important result of the session was the passage of an act defining with precision the duties of the Secretary of State in making up the list of members of the General Assembly, declaring who shall take part in the organization thereof, and prescribing the manner in which such organization shall be effected. Another act regulates the proceedings in grand committee. It declares that the grand committee shall consist of a majority of the members of the Senate and a majority of the members of the House duly assembled, pursuant to an invitation from one of said bodies accepted by the other, the acceptance being communicated by message to the body in which such invitation originated. The method of ascertaining and declaring a quorum therein, of recording the proceedings, and of taking the vote, is prescribed. All business therein is forbidden, except such as is specified in the invitation. By another act a commission was appointed to select a site in the city of Providence for a new State House, and to erect a structure thereon. For this purpose the State Treasurer was authorized to raise money by the issue and sale of 4-per-cent. State bonds or scrip to an amount not exceeding \$1,500,000, payable in not over forty years from date.

A constitutional amendment providing for plurality elections for State, city, and town officers was proposed and transmitted to the next General Assembly for concurrence.

Other acts of the session were as follow:

For supplying pupils in the public schools with free text-books and school supplies.

Providing for police matrons in cities.

Amending the law regulating weights and measures.

Prohibiting the carrying of concealed weapons.

Providing a new law for the commitment and care of the insane.

Providing a general law for incorporation of companies.

Authorizing cities and towns to provide by ordinance for the punishment of indecent intoxication.

To prevent the introduction of infectious diseases.

Making the first Monday in September a holiday, known as Labor Day.

Appropriating money for the purchase of a camp ground for the State militia.

Increasing the tax on savings banks from 25 to 40 cents on each \$100 of deposits and of reserved profits.

The General Assembly chosen at the April election assembled at Newport on May 30. The roll of members, as prepared by the Secretary of State, gave the Senate 23 Republicans and 14 Democrats, and the House 40 Democrats and 32 Republicans. A majority of 1 in grand committee was thereby secured to the Republicans. But at the opening session the Democrats, having control of the House, proceeded to unseat the hold-over Republican member from James-



town and to seat a Democrat in his place, on the ground that certain votes cast in the April election for the Democratic candidate had been erroneously rejected in the count, and that these, if counted, would give the latter a majority. They then unseated the hold-over Republican member from Westerly, on the ground of his election to the Senate, leaving a vacancy in the representation from that town. By these tactics they secured 41 members of the House and a majority of the grand committee. Thereupon, on the third day of the session the House sent an invitation to the Senate to join with it in grand committee for the purpose of canvassing the returns of the April election and declaring the result. This the Senate refused to do, on the ground that the House, by unwarrantable action, had changed the political character of the grand committee. There being no choice for State officers by the people in the April election, the duty of selecting them would devolve upon the grand committee, as provided by the Constitution, and for this reason its political character became important. Before refusing to meet the House, the Republicans had carried through the Senate a resolution of adjournment to January, 1894, which the House, upon its reception, laid upon the table. The Senate then certified to the Governor that a difference existed between the two Houses as to the date of adjournment, and, in accordance with section 6 of Article VII of the State Constitution, he issued his order adjourning both Houses till the last Tuesday of January, 1894. The House refused to recognize this order, but, continuing in session, passed an order submitting to the State Supreme Court the following questions:

1. Has the Senate the constitutional power at the May session to pass a resolution of adjournment for a longer period than two days until after it has joined with the House of Representatives in grand committee, request having been made to the Senate by the House of Representatives to join in such grand committee for the purpose of counting and declaring the votes cast for general officers at the preceding April election?

2. In case a resolution of adjournment to the city of Providence to the fourth Tuesday in January following should have been adopted by the Senate before joining the House of Representatives in grand committee at the annual May session, for the purpose of counting and declaring the votes cast for general officers at the preceding general election, should not have been acted upon by the House of Representatives, does such a state of things constitute a "disagreement" on the subject of adjournment, which confers upon the Governor the power to adjourn the General Assembly under section 6, Article VII, of the Constitution?

3. Can the General Assembly at the May session be adjourned by the Governor, under the power conferred upon him by section 6, Article VII, of the Constitution, until after the two Houses have joined in grand committee, for the purpose of counting and declaring the votes cast for general officers at the preceding April election?

An answer to these questions was given by the court on Aug. 12. The first and third questions were answered in the affirmative, while upon the second no direct decision was given, the Court holding that the Governor was sole judge of what constituted a disagreement, and that his action could not be reviewed by the Court. The Democratic majority of the House had, meanwhile,

kept up its sessions from week to week, but on Aug. 17, in view of the opinion of the Court, they decided to adjourn to the time fixed by the Governor.

The only important action taken by the two Houses concurrently at this session related to the plurality election amendment to the State Constitution which was proposed at the January session. This amendment was concurred in, and provision was made for its submission to the people on the fourth Tuesday of November.

**Education.**—During the year the sum of \$1,332,414.83 was expended for education, of which \$300,371.15 was devoted to building and equipment. Of this total there was drawn directly from the State treasury \$274,476.79, and the remainder was derived from the treasuries of cities, towns, and districts.

The number of children enrolled during the year in public schools was 53,695, an increase of 958 over 1892. In addition to this number, 13,660 in 64 private institutions.

The most important events of the educational year were the completion of the Manual Training School in Providence, and the occupancy by the Rhode Island School of Design of its new quarters on Waterman Street, in Providence, which was the generous donation of a public-spirited citizen.

The new State establishment known as the Institute for the Deaf, in Providence, was dedicated on Feb. 21. It began the first year with 52 pupils. The cost of maintenance during the year was \$13,315.94.

There are at the Perkins Institution for the Blind, at South Boston, and its kindergarten, in Jamaica Plain, 9 boys and 11 girls supported by the State.

At the School for Feeble Minded, in Waverly, Mass., there are 6 boys and 5 girls.

**Charities and Prisons.**—The number of inmates at the State institutions on Dec. 31 was as follows:

INSTITUTIONS.	Men.	Women.	Total.
House of Correction.....	220	57	277
Asylum for Insane.....	284	296	580
Almshouse (including boys and girls)..	120	145	265
Prison.....	169	1	170
Providence County jail.....	249	18	267
School for boys.....	250	...	250
School for girls.....	...	...	20
Total.....	...	...	1,829

The building for the insane is finished and occupied, but it will only answer present requirements. Temporary barracks for about 150 men are being constructed to relieve the overcrowded condition of the Providence County jail.

**Militia.**—The returns of the active militia at the close of the year are as follow: Commissioned officers, 170; noncommissioned officers, 329; musicians, 62; privates, 915; total, 1,476. The number of men available in the State for militia service is 130,566. The expenditures for military purposes in 1893 were \$38,739.

**Banks.**—The deposits in the institutions for savings on Nov. 16, 1893, amounted to \$69,053,724.17, distributed among 130,610 depositors. The deposits in the trust companies, participa-

tion account, on that date amounted to \$7,959,703.45, and the number of depositors was 5,136. These figures show a decrease of \$853,268.40 in savings-bank deposits for the year, and a decrease of 11,882 depositors. But the decrease of deposits is due to the receivers of the Franklin Institution for Savings and the Cranston and Union Savings Bank declaring their final dividends. When this withdrawal is credited to the year's account the statement of savings in banks stands as follows: Increase in deposits for year ending Nov. 16, 1893, \$96,245.14; decrease in depositors, 391.

**Political.**—On Feb. 22 the Prohibitionists met in State convention at Providence and nominated Henry B. Metcalf for Governor, Jonathan Larkin for Lieutenant-Governor, Elisha T. Reed for Secretary of State, B. E. Helme for General Treasurer, and J. A. Williams for Attorney-General.

The Democratic State Convention was held at Providence on March 21, and resulted in the nomination of David S. Baker, Jr., for Governor, Dalton E. Young for Lieutenant-Governor, John J. Heffernan for Secretary of State, John G. Perry for General Treasurer, and Clarence A. Aldrich for Attorney-General.

The platform urges reform of the State Constitution, so that a plurality vote may elect; and declares that the executive, legislative, and judicial departments of the State should be separate from and independent of each other; that cities and towns ought to have fair and equitable representation in the General Assembly; that the duration of that body should be limited; and that the pay of its members ought to be increased, and special legislation as opposed to home rule forbidden.

On the same date the Republican State Convention met in the same city and renominated Gov. Brown and Treasurer Clark. For Lieutenant-Governor, Edwin R. Allen was nominated; for Secretary of State, Charles P. Bennett; for Attorney-General, Edward C. Dubois. The platform includes the following declarations:

We recognize the desirability of making such amendments to the Constitution as will facilitate the election and qualification of State officers, decrease the number of elections, allow the creation of non-partisan returning boards, and will enable a more businesslike administration of the Government by clearly defining the responsibility and duties of the several departments.

We charge the Democratic party with insincerity in its alleged desire for constitutional changes, as evidenced in its attitude toward the biennial-election proposition last November.

With a view to strengthening and improving the public-school system of this State, we advocate the substitution of the town for the district plan of organization, the furnishing of free text-books and supplies, and the adoption of such regulations as will promote a higher standard of qualification for teachers, and entitle them to increased remuneration.

We sympathize with the efforts of labor organizations toward the reduction of hours of toil and the better protection of life and limb, and we will cordially assist them in their endeavors to such an extent as will not embarrass the legitimate operations of our merchants and manufacturers in competition with those of other States.

We recommend the adoption of legislation for the purpose of stimulating and fostering the agricultural industry of this State, and the enactment of laws that

will provide for our fishermen the same protection accorded those of neighboring States.

At the April election there was no choice by the people for any of the State offices, no candidate having a majority of the votes cast. For Governor the vote, as announced unofficially, was: Baker, 22,015; Brown, 21,830; Metcalf, 3,265. At the same election members of the General Assembly were voted for, but there was no choice in many of the districts, and a second election became necessary therein. At these by-elections the Democrats were generally successful, securing control of the Lower House, while the Republicans retained their ascendancy in the Senate. An election was held in the two congressional districts of the State on the same date as the State election, there having been no choice by the people in the November preceding. At this second trial, a plurality only being necessary to elect, both districts were carried by the Democrats.

On Nov. 28 a special election was held to determine whether the plurality election amendment, which had passed two preceding Legislatures, should become a part of the Constitution. The vote was overwhelmingly in favor of the amendment, and on Dec. 4 Gov. Brown announced its adoption. This change will put an end to by-elections, and to many complications that have fostered political strife in the State.

**ROMAN CATHOLIC CHURCH.** The golden jubilee year of Leo XIII will pass into history as one of the most felicitous for the Church in this generation. The two hundred and sixty-third successor of St. Peter appeared in St. Peter's on Feb. 19, the fiftieth anniversary of his consecration as Archbishop of Damietta, before an audience of 60,000 persons, in which were included contingents from all parts of the globe. He gave his benediction in a remarkably clear voice, and for hours after the pontifical mass continued to receive the people and reply to addresses, at the end appearing very little the worse for the ordeal. The scene is described as the most enthusiastic and impressive witnessed in Rome in the memory of living men. The 400 church bells rang during the morning, and at night St. Peter's basilica was lighted for the first time since 1870. Congratulatory messages were received from the head of every Government, with the single exception of the Italian, and week after week throughout the year saw pilgrimages which the Holy Father invariably received and addressed in the Vatican. The largest bodies of visitors were composed of French, Spanish, and Swiss workingmen. One of the most remarkable incidents was the visit of Emperor William of Germany, who had a protracted interview with the pontiff, and signalized the occasion by giving a banquet to Cardinal Ledochowski, the prelate who owes his prominence in the papal court to his imprisonment and exile under the Bismarckian era. The offering of Peter's Pence on this occasion was about \$2,000,000, of which the American contribution amounted to \$120,000.

An unprecedented distinction was accorded an American composer, Dr. Frank G. Dossert, by the Pope on the feast of St. Joseph, a *messe solennelle* in honor of the jubilee being produced in St. Peter's before a vast congregation, in which were



Verdi, the American students, the American residents without distinction as to religion, the foreign embassies, and the papal court. The voices were the finest in Rome, Dr. Dossert directing in person by the courtesy of Prof. Meluzzi, the veteran organist of St. Peter's. This is the first time that any composer other than an Italian has enjoyed such a privilege, and it marks also the first European recognition of American musical genius. The expense of the production was defrayed by the following committee: Austin E. Ford, chairman; Hon. William R. Grace, Rev. Charles H. Colton, Augustive Daly, Frederiek R. Coudert, Judge Morgan J. O'Brien, Judge J. F. Daly, James S. Coleman, Patrick Farrelly, George Ehret, Henry Amy, John B. Manning, Peter Doelger, John A. McCall, Rev. J. H. Hayne, Ferdinand Levy, Gov. Roswell P. Flower, Rev. P. M. Corr, and Mrs. Theodore Havemeyer, Mrs. Eugene Kelly, Mrs. J. M. Hecker, and Mrs. T. A. Emmet—all of New York. A banquet was afterward tendered Mr. Dossert at the North American College, and a reception given him by Queen Marguerite. Pope Leo, in congratulating the composer, said that his love for America had grown with his years, that his hope was to see Italy equally happy and free, and that, in departing from the rule in inviting him to perform the mass in Rome, he had desired to emphasize the character of the Church as the patron of art, as well as to encourage its development in the New World, where, in time, he believed it would flower most beautifully.

A review of Leo's pontificate to March 3 elicited the facts that he had erected 1 patriarchate; 27 archdioceses, 14 of which were bishops' sees; 77 new bishops, 1 delegation, and 47 vicariates-apostolic; and 18 new prefectures—a total of 177 new titles, including the 53 cardinals.

**Beatifications.**—Three beatifications crowned the year, viz.: Francesco Savero Bianchi, Barnabite father, Jan. 21; Gerardo Majella, lay brother, Congregation of the Most Holy Redeemer, Jan. 29; Antonio Balduino, Society of Jesus, April 16.

The Sacred Congregation of Rites, by decree of Dec. 17, fixed the patronal feast of the Pious Association of the Holy Family for the third Sunday after the Epiphany.

**Vatican and Quirinal.**—The relation between the Church and the Italian Government became more strained. It reached its intensity on the elevation of Cardinal Sarto, Bishop of Mantua, to the see of Venice by the papal bull of June 17. This was held to be a violation of the right of the Crown of Italy to this piece of ecclesiastical patronage, claimed by it as the representative of the former Republic of Venice, which became extinct in 1797. A suspension of the royal exequator and stipends left 30 Italian sees without their pastors, with a promise of the ensuing consistory adding to the number, as the Pope absolutely refused to recognize the exclusive right claimed by the civil power. There was interference with the Catholic press by the ministry, nearly all the leading papers suffering suspension.

The principal encyclical of the year was that on the study of the Scriptures, Nov. 18, in which the Pope urges upon ecclesiastics the mastery of the Oriental languages necessary to a proper un-

derstanding of the sacred text, explains the Catholic doctrine of inspiration, and shows the disposition with which the subject should be approached.

**The Eucharistic Congress at Jerusalem** (May 12-20), under the presidency of Cardinal Langenieux, was welcomed by the schismatical Churches of the East with an unlooked-for warmth, and substantial progress was reported to the Pope toward the ultimate reunion of those Churches with Rome.

The Benedictines gathered in Rome by order of the Pope, April 16, to witness the reinstallation of their order as a favored institution of the Church, and the laying of the corner stone of the new International College of St. Anselm. Six hundred abbots were present. Leo XIII referred to the order's vast achievements for learning and religion in the ages gone by, and urged that the work of placing it once more in the forefront be taken up in earnest. The Franciscans have taken possession of the Borghese Palace as headquarters of the order.

**The United States.**—The development of the Roman policy in the United States was the marked feature of the year. The coming of Archbishop Satolli in October, 1892, in the capacity of an appellant judge with extraordinary discretion, caused considerable discussion, and a disposition to resent his intervention as an unwarranted interference in the conduct of American ecclesiastical affairs was manifested from the outset. Newspaper controversy enlivened the earlier part of the year, and in both the daily and Catholic press the decision of Mgr. Satolli restoring Dr. McGlynn, the support of Father Corrigan as against Bishop Wigger, the order annulling and superseding those of Bishop Matz and Bishop Wigger, which had in the past prohibited priests from ministering the sacraments to children attending the public schools, were freely criticised. In the Archdiocese of New York so much feeling was exhibited and the name of Archbishop Corrigan was so familiarly used as a leading spirit in the opposition to the papal representative, that it became necessary for his grace to make a public pronouncement of his loyalty, which was done in the presence of Mgr. Satolli and a distinguished audience in St. Patrick's Cathedral. This effectually disposed of the dissensions which were fast dividing the Church into two hostile camps, and thenceforward a more peaceable tendency developed.

The order from Rome silencing opposition to Mgr. Satolli was evidence of the Pope's determination to sustain his delegate. This was followed six days later (Jan. 14) by a vatican decree enhancing the title of the Monsignor, and permanently establishing the American apostolic delegation. Rev. Dr. F. Z. Rooker, Vice-President of the American College at Rome, who had been appointed secretary to the delegate *pro tempore*, was succeeded by Mgr. Sherrati, who became permanent secretary and chancellor. The rescript from Rome dated Jan. 24 declared that the growth and good of religion here demanded the action which the holy see had taken for its "special care and provision," and defined the great power of the delegate in these words:

"We command all whom it concerns to recognize in you [Mgr. Satolli], as apostolic delegate,

the supreme power of the delegating pontiff; we command that they give you aid, concurrence, and obedience in all things, receiving with reverence your salutary admonitions and orders. Whatever sentence or penalty you shall declare or inflict duly against those who oppose your authority, we will ratify, and, by the authority given us by the Lord, will cause to be observed inviolably until condign satisfaction be made, notwithstanding constitutions and apostolic ordinances, or any other to the contrary."

Mgr. Satolli formally opened his headquarters in Washington, not far from the Catholic university. His most important ruling of the year, perhaps, was that of Feb. 2 against Bishop Wigger. The bishop had closed St. Thomas's Church, Bayonne, N. J., built by an English-speaking congregation, which was thus compelled to contribute to the support of a weaker neighboring church in which the German tongue was used. An order to reopen St. Thomas's was issued with the additional provision that all sermons and instructions be in English—a confirmation of the Vatican policy to discourage the perpetuation of racial distinctions in the American Church.

**The School Controversy**, which had raged for a year, received a check in June by a papal letter addressed to Cardinal Gibbons and the hierarchy. It ordered a cessation of acrimonious discussion, recommended conciliation, commended the decrees of Baltimore extending the parochial school system, where feasible, while inferentially upholding the compromise of Archbishop Ireland with the local authorities, and counseling common ecclesiastical and civil action for the cultivation of the arts and sciences and the moral improvement of the citizen. Hostility to the public school, *per se*, is discountenanced, and the rights of parents in the matter of its use are not to be questioned. Mgr. Satolli visited the Northwest, receiving public ovations along the line to the Pacific. At Stillwater and Faribault he inspected the famous schools whose names have been associated in the educational discussion, and expressed himself delighted with what he saw. Later in the year the Faribault plan was discontinued in the city of its birth, owing to a disagreement over the appointment of Protestant teachers in the schools turned over to the school board by the Catholics. Archbishop Ireland, however, continued to extend the principle elsewhere throughout the diocese of St. Paul, and made considerable progress notwithstanding the aggressive opposition of the anti-Catholic American Protective Association. An effort to incorporate the denominational schools in the public system, originating with the Catholic clergy, was bitterly opposed by the Protestant ministers of New Jersey, and finally defeated on a close vote in the Legislature. A similar measure, designated as the Spellissey bill, was draughted in New York, but on the disapproval of Archbishop Corrigan it was discredited. Numerous arrangements looking to a conformity of parochial and public education occurred in various parts of the West and Southwest, probably more than in any one year in the history of the country.

**Statistics of Growth.**—The hierarchy at the end of 1893 (including Mgr. Satolli), showed a

total strength of 93, against 88 the previous year. There were 4 new archbishops; the priesthood increased from 9,338 to 9,717; the churches, from 8,433 to 8,729; the chapels, from 3,920 to 5,704; Catholic schools, from 3,585 to 3,732, with an increase of pupils from 731,385 to 765,988. The archdiocese of Boston gained 51 schools in the year. There are 8 universities, 25 secular and 61 regular seminaries, 179 high schools for boys, and 732 academies for girls. There were 644 academies the year before. Charitable institutions increased from 647 to 753. New York leads in population with 800,000; Boston, second, with 575,000; Chicago, third, with 550,000; Philadelphia, (410,000), fourth; New Orleans (300,000), fifth.

**The Papal Exhibit** at the World's Columbian Exposition, Chicago, attracted as much attention as anything on the grounds. The 17 principal objects were displayed with the Columbus relics in the Convent of La Rabida, and were guarded by United States marines day and night.

The Catholic Educational Exhibit covered 30,000 square feet of the Liberal Arts building. It was opened June 25, under the direction of Bishop Spaulding and Rev. Brother Maurelian. Twenty dioceses and 1,200 institutions were represented.

**Congresses.**—Catholic participation in the World's Parliament of Religions was most generous, 27 representatives speaking in 17 different day sessions, besides Sept. 12, which was designated as "Catholic day."

Catholic congresses were never so numerous as in 1893. Chicago was the meeting place of the principal ones. The first was the National Convention of Catholic Women, May 18, Mrs. Alice Timmons Toomey presiding. Plans for the improvement of woman's condition through organization and education were discussed, and papers designed to encourage it were read by Miss Eliza Allen Starr, Miss Ellen A. Ford, Miss Emma Cary, Frances Costigan, Miss Lily Alice Toomey, Miss Mary Josephine Onahan, M. A. B. Maher, Sarah Moore, and Janet E. Richards. Eleanor C. Donnelly and Mrs. Margaret M. Halvey contributed original poems. A Catholic Woman's National League to promote temperance and charitable work among the sick and poor, and advance the kindergarten schools, was one of the results of this congress. The Catholic Total Abstinence Convention was held in June.

The second American Catholic Congress was held in September at the Art Institute, Chicago. Its proportions were so vast that its organizer, Hon. William J. Onahan, found it impossible to adhere to the original programme. It practically resolved itself into a series of huge mass meetings. Beginning Sept. 4 there were day and evening sessions ending with Sept. 8, Sept. 9 being Catholic Congress day on the fair grounds. Judge Morgan J. O'Brien, of New York, was elected permanent chairman. The papers dealt with the mission and character of Columbus, and the influence of the Church on American institutions, woman, education, labor, etc. One by M. T. Elder, New Orleans, placing the Catholic loss by proselytism and absence of precautions at 20,000,000, caused much adverse criticism. The resolutions favored the autonomy and independ-



ence of the Pope, opposed the secularization of the Sabbath, proclaimed that "only the school bell and the church bell can prolong the echo of the liberty bell," and concluded with the words of Mgr. Satolli: "Forward! in one hand the gospel of Christ, and in the other the Constitution of the United States."

The fourth Colored Catholic Congress was held in the same building at the same time, and the report of the committee appointed to inquire into the question of discrimination among the clergy on account of color, especially at the South, upheld the charge, and an address was adopted protesting against such departure from the teachings of the Church and demanding everywhere the same consideration and equality as exhibited by the Catholic Congress in making the colored convention a part of itself. During the same week conventions of Catholic editors, Catholic young men's unions, German Catholic guilds, and St. Vincent de Paul conferences were also held.

**Catholic Summer School.**—This project ceased to be an experiment and became a permanency after a very successful session at Lake Champlain extending from July 15 to Aug. 6. The New York State Board of Regents granted it a charter Feb. 9, classifying it in the system devoted to university extension. Land has been secured in the neighborhood of Plattsburg, and a \$30,000 building fund is being raised.

**The Redemptorist Order,** denied a foothold in the diocese of Brooklyn under Bishop Loughlin, secured the permission of Bishop McDonnell, his successor, to build its first house in South Brooklyn.

Important hierarchal changes were made May 13 in the appointment of Bishop Kain, of Wheeling, as coadjutor to Archbishop Kenrick, of St. Louis; the promotion of Bishop Hennessy, of Dubuque, to the rank of archbishop, and the translation of Bishop Burke, of Cheyenne, to the see of St. Joseph, and Bishop Rademacher, from Nashville to Fort Wayne.

The Rev. Edward McGlynn, D. D., completed his reconciliation with the Roman authorities by a visit to the Vatican in June.

Bishop McNierney, of Albany, was made a member of the State Board of Regents by the New York Legislature, the first direct recognition of the Catholic hierarchy in the membership of that body.

**Jubilees.**—The centenary of the founding of the New Orleans Cathedral was celebrated April 25. Cardinal Gibbons's silver jubilee, which fell on Aug. 16, was honored magnificently Oct. 18. The other silver jubilees celebrated were: Bishop McCloskey, Louisville, May 24; Bishop McQuaid, Rochester, and Bishop O'Hara, Scranton, July 12; Bishop Mullen, Erie, Aug. 2; Bishop Becker, Savannah, Aug. 16; Bishop Hogan, Kansas City, Sept. 13; Bishop Ryan, Buffalo, Nov. 8. Bishop Watterson's priestly jubilee was celebrated Aug. 8. Great demonstrations were occasioned by the golden jubilee of the dioceses of Pittsburg and Little Rock.

**France.**—A better state of feeling between Church and state and the priests and people pervaded France during 1893 than in many years. There were but a few discordant inci-

dents. One was the insistence of the Government on a say in the naming of the successor of Cardinal Lavigerie and the Vatican's denial of that right unless provision was made by France for the support of the African hierarchy. The matter remains an open question. The neutral school policy was questioned by a great Catholic meeting at the Champs Elysées, Paris, and an organization was formed to restore religion as a necessary part of instruction in the free schools. Leo XIII, while favoring the public system and deprecating anything calculated to injure it, approved of the propaganda in so far as it aimed at the recognition of religion as the basis of morality.

The general policy of the Vatican toward the republic remained unchanged notwithstanding the powerful opposition of Cardinal Kopp in Germany, and the royalists in France. On the eve of the general election Leo XIII addressed another letter to the French bishops and people, urging an earnest interest in the duties of citizenship and a cordial support of the existing institution. One result of this was the largest popular vote, although Count de Mun, one of the most ardent supporters of the Pope's conciliatory policy, was among the defeated. The nucleus of a legislative Catholic Republican party was returned. Pope Leo announced to the French pilgrims that he would signalize his regard for France at the close of his jubilee year by canonizing Joan of Arc.

The French Government in April restored all the rights and stipends of 8 prelates who had been cut off in consequence of their avowals of hostility to the republic, making Archbishop Gouthe-Soulard of Aix, who had been tried and fined for insubordination, the only exception. Cardinal Langenieux was in June made Archbishop of Rennes, and the Bishop of Bayeux promoted Archbishop of Lyons. A great Catholic congress was held in Besançon in March, at which the main topic of discussion was the labor question. It was resolved to organize clubs of Catholic workmen to counteract the anarchistic propaganda, with the encyclical of Leo XIII for a platform, such organizations taking the initiative in all movements for the improvement of social conditions. Count de Mun made an eloquent address, the theme of which was that such work carried on under the auspices of the Church, as it should be, would redeem France from infidelity and faction and save her for God and civilization.

**Great Britain and Ireland.**—Catholicity in England, according to the London "Court Journal," is receiving accessions from the Church of England, especially "the clergymen and literary men and women of some means, not in single files, but in battalions," and "there has not been a more decided movement toward Rome in years." The discussion on "Hell" caused by Prof. St. George Mivart's application of evolutionary theories to the subject, after involving nearly all the leading English-speaking theologians for more than a year, was finally ended by a Roman decree unfavorable to Mivart's articles, and their author, over his own name, in December, publicly acquiesced in the judgment.

**The Census of 1891,** completed and issued this year, shows an increase of Catholic priests in ten years of from 2,089 to 2,511.

The question of undenominational Christianity for the London schools was raised by the report of the Board Committee in November, and the Catholics decided to vote with the opposition to such a system in the elections a year hence, when the question will be submitted for decision. The hierarchy of England circulated petitions at the church doors in November in accordance with the decision to ask Parliament, in the name of the whole Catholic body, to settle the twenty years' agitation by granting Catholic schools their share of the education rate.

The Isle of Man, in October, passed a Catholic emancipation act.

Ireland celebrated the completion of St. Patrick's Ecclesiastical College, Maynooth, one of the finest structures in the world, this year, and substantial progress was made toward abolishing Protestant monopoly of university education. The amendment of the National School Board rules so as to admit the Christian Brothers' schools to the benefits of the state grants for Irish education, which was one of the conditions imposed by the Irish party to the passage of the Compulsory Education act, was postponed by Secretary Morley, and aroused a strong protest, which took the form of legislative obstruction, on the part of Mr. Sexton, M. P., with favorable result to the Brothers' institutions. Rt. Rev. Dr. Fitzpatrick, Lord Abbot of the Trappist Monastery of Mount Melleray, a position which he held for forty-five years, died Dec. 5, at the age of eighty-one. Among the other institutions founded by him was the monastery at Dubuque, Iowa.

**British America.**—The Catholic appeal to the Dominion Cabinet and the Supreme Court in favor of the disallowance of the Manitoba School act was pushed, on the ground that, apart from the provincial Constitution, the educational clause in the British North America act, guarantees the inviolability of the Catholic separate schools. The Manitoba majority government sets up that the clause does not apply to the province. A misunderstanding occurred in Ontario, in March, between the Irish and French population, the former claiming that presence of French children in their schools interfered with grading and efficiency. A compromise was effected, by which French children will not be excluded from the Catholic English-speaking schools unless the teachers so request. An investigation in the counties of Prescott and Russell, where there was much trouble, in 1889, over the language question, revealed the fact that a complete change had taken place in the French Catholic schools—of the 3,640 children 3,581 being taught English. In January M. Tarte was elected member for L'Islet on the educational issue, and on March 6 moved a resolution censuring the Cabinet for refusing to summarily disallow the Manitoba act of 1890 abolishing the separate schools. After a three days' debate the resolution was rejected—120 to 71. The school question developed in New Brunswick, the Protestants claiming that, through the action of the Catholic majority on the Board of Education in Bathurst, they are compelled to pay rates for the support of religious teachers in institutions which were formerly public schools. An investigation with a view to a proper adjustment of

taxes is under way. In Quebec a movement for the lay control of Catholic schools—4,615 out of the whole 5,618 in the province—developed.

Hon. Honore Mercier, ex-Premier of Quebec, on April 4 placed himself at the head of the movement for Canadian independence in a speech in which he declared either that or annexation to the United States was necessary to the preservation of the religious equality, language, and influence of French nationality. On June 25, the celebration of the two hundred and fifteenth year of the founding of Montreal, M. Mercier, in his French monument dedicatory speech, appealed for a union of French and other Catholics as a necessity to preserve their liberty and existence from English encroachment.

The sisters of Notre Dame suffered a severe loss June 8 by the destruction of their great educational convent of Ville Marie. It took four years to build the institution, of which only the boarding school was saved. Loss, \$1,500,000; insurance, but \$100,000.

Two law cases affecting Catholics came up in the Quebec courts, the first resulting in a decision early in the year that marriages between Catholics unsanctioned by the Church are invalid, the second being a judgment against Archbishop Fabre, of Montreal, in the action brought by the "Canada Revue," Sept. 25, for damaging its business interests through a pastoral boycott because the paper criticised the ecclesiastical tax exemption and tithe system.

Mayor Desjardins, July 30, refused to preside at a dinner to Italian war-ship officers in Montreal lest it might be taken as a countenance of the acts of the Government which has deprived the Pope of his temporal power. Leo XIII decorated him for his protest.

**Germany** exhibits a Catholic advance in every direction. The Center party manifested its power by defeating the Army bill and compelling an appeal by Emperor William and Caprivi to the country—although in so doing a division was caused—resolving the party into aristocratic and democratic elements. The democratic Catholic contingent made the most numerous showing in the subsequent June elections of any single party, and taken all together—Centerists, Government Centerists, Poles, Guelphs, Alsations, etc.—the Catholics have the balance of power in the new chosen Reichstag. Cardinal Ledochowski advised the 19 Poles to throw in their lot with the Government in return for concessions, although all overtures to the Pope direct failed to secure any word of encouragement for the Emperor. Cardinals Hohenlohe and Kopp both favored the Government, but their exhortations proved futile with the people. The visit of Emperor William to the Pope in April helped on the cause of conciliation, but gained nothing for the support of the triple alliance. In December the Catholic party made a decided effort to secure the repeal of the last vestiges of the penal laws enacted under the Cultur-Kampf of 1872. Count Hompesch, as spokesman, made an able and conciliatory speech in favor of the return of the religious orders. "Socialists and anarchists," said he, "are free to preach the destruction of every social institution, and a Jesuit alone is expelled for teaching the word of God." The Opposition was weak, the ministry refraining from debate, and on mo-



tion—the Catholics being joined by the Social Democrats, the Alsations, Poles, and most of the Liberals—the first and crucial clause of the bill was passed by a vote of 173 to 136. The Protestant Conservatives deciding to reintroduce the scholastic law in favor of Christian education, the Catholics decided to support it, thus insuring its passage. The Center party entered a protest in the Reichstag against the inadequacy of Catholic representation in public office, especially in the Department of Worship, which is completely in Protestant hands. Of 10 councilors in Prussia, where the state nominates bishops and pastors, controls the Church property, passing upon the needs for new buildings and repairs for old ones, but one is a Catholic, the great Protestant military chaplain being chairman of the council.

**Russia.**—Official excesses marked the whole year, notwithstanding the Czar's friendly assurances to the Pope. Governors refuse to appoint priests to vacant posts on the plea that they are not wanted, with a view to eventually close the churches and disperse the flocks. The seminaries are threatened with civil inspection, the Bishop of St. Petersburg is prohibited from visiting in his diocese, and on April 8 Orzewski, one of the new governor-generals, warned the priests against intermeddling in politics, and, as a sort of emphasis, immediately afterward banished Father Zyworonck to Siberia for five years, and Father Endryk to Astrakhan for six years. The convent prison of Aglona, it is said, is full of exiled priests. In November 22 priests were exiled from the Vistula district, an attempt at rescue on the part of their flocks resulting in a wholesale massacre by the Cossacks. Much indignation was manifested at the Vatican over the report that the diplomatic negotiations between Pope and Czar indicated an abandonment of Polish national rights. Leo, in answer to the congratulations of the Polish pilgrims, took occasion to stigmatize these reports as mischievous. His first concern in all his dealings with Russia was for them. In July the Benedictine convent at Krone, in Lithuania, was closed by the Government, and the nuns carried off to a public institution in a neighboring city. The attempt to close a Catholic chapel in the same place in December was coincident with fearful Cossack atrocities. Male and female worshipers were ridden down, a score killed, 200 beaten to a jelly with the knout, and the town sacked. Gov. Klinkenburg, the responsible official, was transferred to another province, and, without further reference to the losses and injuries of the people, the concern of the St. Petersburg government ceased. The new orders of the Czar prohibit any bishop from writing to Rome except through the intermediary of the Imperial Chancellor, and any priest baptizing the offspring of a mixed marriage, or hearing the confession of a Uniate, is exiled to Siberia.

**Turkey.**—According to the announcement of Mgr. Azarian, Patriarch of the Armenian Catholic's and ambassador extraordinary to the Pope during the jubilee festivals, under date of April 2, religious liberty there is an assured fact. The devotees of the Koran recognize Christianity as a true safeguard of the principle of authority, he says, and favor the spread of Catholicity in the empire on that score. The bishops, the 15

suffragans, of the patriarch, have civil jurisdiction in all their districts, and all questions of testaments, heritages, and contracts of marriage are under the jurisdiction of their tribunal. Not only is free exercise of religion guaranteed, but exterior manifestations of worship are respected; the streets and highways are open to processions; the crowds give honor to the Blessed Sacrament; and the schools, works, missions, and all religious institutions rise and prosper with the sympathy of the Government. The person of the Patriarch of Constantinople is surrounded with attention, his word is listened to in the most high places, and on more than one occasion he has been sent on diplomatic missions by the Sultan. Referring to all this, Leo XIII, on Feb. 21, praised "the benevolence of the sovereign and the deference of the imperial authorities, thanks to whom Catholics in Turkey owe the exercise of their religion." Recognizing the schismatic Armenians as also his children, the Pope has interceded for the amelioration of the civil conditions which make their lives a hardship. As a result of this intercession, one congregation of 10,000 souls has resumed its relations with Rome.

**Austria** presented the same unfavorable attitude as during the preceding year on the marriage and baptismal laws. The hierarchy vigorously resisted the civil interference in these matters. Advised by the Vatican, the protest promised to take the form of political opposition. The tendency of Government, however, was to insist upon its precedence over religious rights. The vacancy in the see of Agram, caused by the refusal of the Holy See to accept Mgr. Vaceticz, Emperor Joseph's choice, after a three years' dispute, has been finally settled by the surrender of the Emperor and the selection of a bishop acceptable to the Pope with an assurance of royal love and loyalty. Cardinal Vasury, Primate of Hungary and leader in the opposition to the Government, narrowly escaped assassination April 10. The dagger intended for the Cardinal was buried twice in his secretary. Great preparations were being made in the latter part of the year for the first Catholic Congress in Hungary. A meeting demanding the restoration of the Pope's temporal power was held in Vienna in February, and caused counter-demonstrations by its Italian opponents against the triple alliance. The feeling was allayed only by the Emperor sending the archduke as special envoy from his household to the royal wedding festivities in Rome in April.

**Spain.**—The first Spanish Eucharistic Congress was held at Valencia for four days, beginning Nov. 20, attended by thousands and presided over by Cardinal Sanz y Forrés, Archbishop of Seville. Its object was the revival of public and private devotion to the Holy Sacrament, and the encouragement of an eucharistic literature and scholarship. The second Congress will be held at Lugo, in 1897.

The restoration of the Convent of La Rabida and its return to the Franciscan order by the Spanish Government in honor of the Columbian celebration elicited a letter of thanks from the Pope in May.

**Japan** as a missionary field attracts the attention of the propaganda, and M. Corre, of the

Paris Foreign Missions, sends out a general appeal for assistance. The former nobility, he says, make the readiest converts. A hospital for lepers has been established at Gotemba, and it overflows with patients, many of whom are radically cured by the treatment of the fathers.

**China.**—The persecution of the missionaries was allayed somewhat, owing to the demands of France and the measures of the Government, who levied the damages upon the districts where the mission houses were destroyed or looted in July.

**Mexico.**—The relations of Church and state are not so happy as formerly, owing to the disposition of political extremists to take advantage of the so-called reform laws restricting religious institutions such as convents. A question of personal liberty under these laws was brought before the courts in April in the case of Jesusa Lopez, a young woman arrested on the complaint of her brothers that she intended to violate the spirit of the law by entering a convent in Louisiana. The brothers were sustained by the courts. A disagreement has arisen between the Jesuits and the Archbishop of Mexico, the latter threatening to expel the order from his diocese. Archbishop Alancon denies all sympathy with opposition to President Diaz, whom he declares is no enemy of the Church. Clerical influence with the state, he says, can be regained best through the arts of peace. "No real friend of either Church or state will engage in the work of fomenting discords." The Pope has ordered that the feast of the Virgin of Guadalupe shall be observed as a general feast in Mexico. Three new bishops—Dioza, Moza, and Gezambus—were consecrated during the year.

**South America.**—An apostolic delegate for South America in the person of Mgr. Lasagna, Bishop of Tripoli *in partibus*, was named in March. He is credited to all the governments without fixed residence, and has done splendid work in developing the missions of St. Francis de Sales, to which order he belongs. His main work, however, has been as arbitrator in the dispute between Ecuador and Peru, through which up to the end of the year war had been avoided.

British Honduras was erected into a diocese, and in April its first bishop was consecrated.

Chili was troubled with an agitation against clerical control of education. A few serious riots took place in Santiago. They were suppressed by the Government, and the matters of complaint are in fair way of amicable adjustment.

**ROUMANIA**, a constitutional monarchy in eastern Europe. There are 120 members in the Senate, elected by two electoral colleges for each district, and 183 Deputies, elected by three colleges. Carol I, a prince of the house of Hohenzollern-Sigmaringen, was elected and recognized as hereditary Prince of Roumania in 1878, and proclaimed King in 1881. In default of a direct heir his nephew, Ferdinand of Hohenzollern, born in 1865, was appointed Crown Prince in 1889 with the approval of the Senate. Ferdinand married Princess Marie of Edinburgh, who, on Oct. 15, 1893, gave birth to a son, Carol. The ministry in 1893 was composed as follows: President of the Council and Minister of the Interior, L. Catargi; Minister of Agriculture, Commerce, Industry, and Domains, P. P. Carp;

Minister of Foreign Affairs, A. Lahovari; Minister of Finance, M. Germani; Minister of Justice, A. Marghiloman; Minister of War, Gen. J. Lahovari; Minister of Public Works, C. Olanescu; Minister of Worship and Public Instruction, Take Jonescu.

**Finances.**—The revenue is estimated in the budget for the financial year 1893-'94 at 189,610,500 lei, or francs, of which 51,455,000 lei are derived from indirect and 28,665,000 lei from direct imposts, 45,700,000 lei from state monopolies, 28,453,000 lei from domains, 14,429,000 lei from public works, and 20,908,500 lei from other sources. The principal items of expenditure are 68,135,293 lei for the public debt, 40,424,072 lei for war, 23,869,645 lei for financial administration, 19,918,421 lei for public instruction, 17,176,897 lei for the interior, 6,302,348 lei for public works, 5,580,360 lei for justice, and 5,378,382 lei for domains. The capital of the public debt on April 1, 1893, was 1,032,519,125 lei, paying for the most part 4 and 5 per cent. interest.

**Commerce.**—The total value of the imports in 1892 was 380,747,296 lei, and of the exports 285,384,057 lei. Of the imports, Germany furnished 113,501,000 lei; Austria-Hungary, 89,356,000 lei; Great Britain, 84,090,000 lei; France, 30,911,000 lei; Belgium, 20,551,000 lei; Turkey and Bulgaria, 16,504,000 lei; and Russia, Switzerland, Italy, and Greece most of the rest. Of the exports, 120,584,000 lei were sent to Great Britain, 42,968,000 lei to Belgium, 33,236,000 lei to Germany, 31,566,000 lei to Austria-Hungary, 20,389,000 lei to Italy, 17,349,000 lei to Turkey and Bulgaria, 11,035,000 lei to France, and a small amount to Russia and other countries. The export of cereals, the only important product of the country, amounted to 251,900,000 lei in 1892. A new commercial treaty favorable to the importation of Roumanian grain into Germany was ratified in December, 1893.

**The Army and Navy.**—Personal military service is obligatory for all able-bodied Roumanians from the age of twenty-one. The period of active service is three years in the permanent army, four years in the territorial cavalry, and five years in the territorial infantry. The soldiers of the permanent army are drawn by lot, and the others are called out for exercises only twice a year. The peace effective for 1892 was 2,960 officers and 46,000 men, with 10,000 horses and 600 guns. The war strength of the army is 3,500 officers and 148,000 men, besides 50,000 trained men in the militia and Landsturm. There is a naval force on the Danube consisting of a flush-decked cruiser, 2 paddle-wheel dispatch vessels, 2 gunboats, 3 coast guards, 2 steamers, 4 sloop gunboats, and 5 torpedo boats, armed with 6 large and 59 small guns altogether, and manned by 96 officers, 25 mechanics, and 1,480 sailors.

**Communications.**—The merchant marine in 1893 consisted of 30 steamers, of 1,899 tons, and 84 sailing vessels, of 7,661 tons. The railroads belong to the state, which in 1893 had 1,568 miles completed and 343 miles begun, and 620 miles more were projected. The state telegraph system had a total length of 3,525 miles, with 7,915 miles of wire. The number of messages forwarded in 1892 was 1,592,525. The post-office handled 15,645,630 letters, 4,787,565 postal cards,



and 7,960,771 other pieces. The receipts were 3,650,123 francs, besides 2,498,919 francs from telegrams, and the expense of both services was 7,960,771 francs.

#### European Commission of the Danube.—

The receipts of the International Commission created in 1878 for the regulation of the Danube were 3,381,445 francs in 1892, and the expenses were 2,235,067 francs. The surplus on hand, including reserve and pension funds, was 2,628,993 francs. The number of freight vessels that cleared the Sulina mouth during the year was 1,532, of 1,427,087 tons, of which 1,124, of 1,349,715 tons, were steamers. Of the total tonnage, 866,758 tons were British, 199,491 Greek, 82,804 Austrian, 76,075 Turkish, 50,048 Italian, 49,095 Norwegian, 39,177 French, 33,352 Russian, 26,285 German, and 3,602 Dutch, Spanish, Roumanian, etc. The export of wheat was 4,031,000; of rye, 575,000; of maize, 3,231,000; of barley, 1,215,000 quarters.

**Legislation.**—Among other measures that became law during the session that was closed in the beginning of June, 1893, were important reforms relating to local administration, to the clergy, and to popular education. A law regulating agrarian contracts, designed to alleviate the hardships and the discontent of the rural population, embodies principles which the Old Conservatives were strong enough to resist when they were in opposition, but but which Catargi now induced them to accept. Jonesco worked out a reform measure extending and organizing primary education. A bill dealing with the forestry, agricultural, and commercial schools was amended by Anti-Semites so as to restrict gratuitous instruction to Roumanian citizens, and to exclude foreigners from the industrial schools altogether. Carp objected strongly to the exclusion of foreigners and Roumanian Jews, who are also foreigners according to the law, though they are obliged to serve their time in the army, where they can not be promoted even to be noncommissioned officers. The Liberals, outdone in popular measures by the Junimists, allied themselves with the extreme Democrats, led by N. Flevea, who took advantage of a well-intended but complicated bill to equalize and regulate the municipal taxes on articles of consumption to start an agitation against the ministry that resulted in riot and bloodshed in Bucharest.

The town councils have raised a large part of the local revenues by imposing taxes on articles of food and drink brought in from outside. The ministry framed a bill prescribing maximum rates, and making the tax on consumption applicable also to articles, such as liquors, produced in the towns. The local tradesmen, excited by the harangues of the Liberal Opposition, held mass meetings and arranged demonstrations, and, when the bill came up for discussion, marched to the legislative hall and presented a monster petition. The President of the Chamber, Gen. Mano, promised that the petition would be considered; but when the Chamber proceeded to discuss the bill and the police cleared the hall, the people began to throw stones and assault the police and the ministers and Deputies when they appeared on the street. The mounted police dispersed the mob, and when the riot was

renewed on the following day it was suppressed by the regular troops.

**RULE OF THE ROAD.** A law has been defined to be "a rule of action prescribing what is right and prohibiting what is wrong." Under the law popularly known as the Rule of the Road are included the regulations concerning passage from place to place on land, and the rules regulating lights, signals, steering, and sailing on the water. The rule of the road is one of those laws to which we yield instinctive obedience constantly in daily life; and when we are walking through the streets, riding or driving on the highways, or traveling by railroad, steamboat, or sailing vessel, it is the rule of the road that protects us from injury to person and property.

**For Pedestrians.**—The rule of the road for foot passengers requires them to keep to the right of the footpath or highroad. This provision of the law follows a custom dating from time immemorial. Primitive man always turns to the right, for it is in the right hand that men carry their weapons or their burdens, and turning to the right obviates the danger of the two burdens colliding. So far as we know, the first actual enactment giving the force of law to this custom is several centuries old, dating from the time when Pope Boniface, to prevent accidents among the vast concourse of pilgrims flocking to Rome, gave orders that in crossing the bridges the people should keep to the right-hand footway, leaving the left side to persons going in the opposite direction. This differs little from our plan, which is to take either footway we please, but to keep to the right-hand moiety of it. And if, by reason of our keeping to the left, we come into collision with another person who is keeping to the right, we are responsible for any damage that results. The rule of the road is more frequently violated by women, either from their ignorance or from their desire to look into the shop windows. In every civilized country the rule of the road for pedestrians is the same, except that among the German nations officers of the military service have the right of way, and they may keep to the right or left as they choose, and others must give place to them.

**For Equestrians and Vehicles.**—But the carriage ways are more important than the footways in the matter of the rule of the road. The speed with which horsemen and vehicles move, and the serious results of any collision between them, must have created in the very earliest times some kind of system. In the United States the power to regulate all traffic or passage on land (unless it be interstate commerce) is inherent in the several States, and the General Government has no authority to prescribe laws on the subject. In all the States the rules of the road are identical: When we meet persons coming the opposite way we must turn to the right, and in passing any one whom we have overtaken we must pass to the left. Equestrians, vehicles, and foot passengers have equal rights to the road, and each must respect the rights of the others. Some of the States have special statutes on this subject; others have held the custom to be part of the common law.

While the generality of pedestrians in all countries keep to the right, there are some countries in which drivers and riders keep to the left.

Such is the case in England, and in parts of Italy and Switzerland. Couplets and quatrains in considerable number have been composed to impress the English rule on the memory of those persons who can call to mind a particular maxim with more readiness if it be set forth in rhyme. One of these is as follows:

The rule of the road is a paradox quite;  
In riding or driving along,  
If you keep to the left you are sure to go right,  
If you keep to the right, to go wrong.

Much debate has arisen upon the respective advantages resulting from keeping to the right or turning to the left. Those who prefer the American method of keeping to the right urge that it is better to adopt the same rule for the carriage ways as for the footways, in order not to burden the memory with conflicting rules; they also contend that it is better because it gives more scope and sweep to the whip of the driver. The advocates of the English method can find no argument save that by turning to the left each driver can see at a glance whether the passing wheels have space to keep clear of each other.

The fact that the American rule of the road differs from the English rule has provoked much comment. It is argued that as we have inherited the crude framework of our Government and the mass of our common law from England, so we should have inherited the English rule of the road as part of those customs and laws. But the reason of the divergence is not difficult to determine. The earliest Anglo-Saxon emigrants to New England were for some time prior to their landing on Plymouth Rock domiciled in Holland, where the rule of the road was to keep to the right. Habituated by their stay in Holland to observe this custom, the pilgrims of the "Mayflower" very naturally followed it after arriving in America, and it became the approved method of avoiding collision. The custom must have received additional confirmation from the French Huguenots who sought an asylum here (and who, of course, followed the custom of France in this respect), and from the influence of the Dutch in New York.

**For Vessels.**—But the observance of the rule of the road is far more important at sea than on land, because the safety of life and property is so absolutely dependent upon it. On a dark night on a broad ocean ships are traveling in different directions, each carrying a light or lights as a beacon. This beacon would not suffice without the establishment of rules for passing, overtaking, and crossing.

The laws of all the commercial nations regulating traffic on the sea are very nearly identical, so that, though each ship obeys the regulations of its own government, yet if two vessels of foreign countries come into collision the same rules to determine the blame are enforced against each.

By the Constitution of the United States, Congress has the exclusive power to regulate the traffic on the high seas and inland navigable tide waters; yet some of the States have laws (often relics of preconstitutional times) regulating navigation on the waters within their boundaries; but in such instances the State laws are identical with laws of Congress and need not be specifically mentioned here. The laws passed

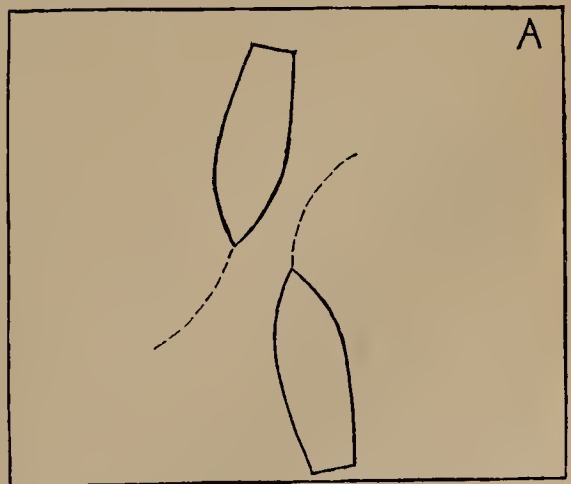
by Congress are divided under three heads—lights, signals, and sailing and steering—and declare that every steam vessel which is under sail, and not under steam, shall be considered a sailing vessel, and every steam vessel which is under steam, whether under sail or not, shall be considered as a steam vessel.

**Lights.**—In all weathers, between sunrise and sunset all steam vessels under way shall carry on the starboard side a green light of such character as to be visible on a dark night, with a clear atmosphere, at a distance of at least two miles, so constructed as to throw a uniform and unbroken light over an arc of the horizon of ten points of the compass, and so fixed as to throw the light from right ahead to two points abaft the beam on the starboard side. Similarly, a red lamp must be carried on the port side, and these lamps must be fitted with inboard screens, so as to prevent them from being seen across the bows. In addition to these side lights, all ocean-going steamers and steamers carrying sail shall show at the foremast head a bright white light visible for five miles. Steam vessels, when towing other vessels, shall carry two bright, white, masthead lights, one over the other. River steamers navigating waters flowing into the Gulf of Mexico must carry on the outward side of their smoke pipes red and green lights. All other steam vessels must carry the red and green lights and two white lights, one at the bow and the other at the stern, at least 15 feet above the bow light. The lights of ferryboats, however, are to be regulated by the supervising inspectors of steam vessels.

All vessels at anchor must show a white light in a globular lantern, at a height not exceeding 20 feet above the hull. Open boats are not required to carry the side lights, but if they do not they must have red and green lanterns to show when they approach other vessels.

**Fog Signals.**—Steam vessels under way must sound a steam whistle at intervals of not more than one minute; sailing vessels under way must sound a fog horn every five minutes; and all vessels not under way must sound a bell at intervals of not more than five minutes.

**Steering and Sailing.**—If two sailing vessels are approaching each other so as to involve the



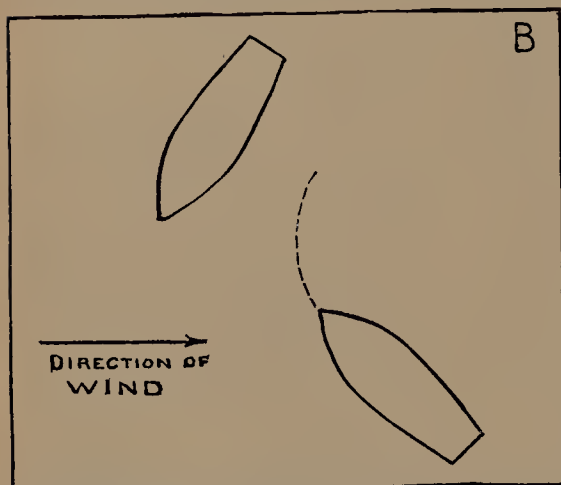
risk of collision, each must pass to the port side of the other (see A). When two sailing vessels



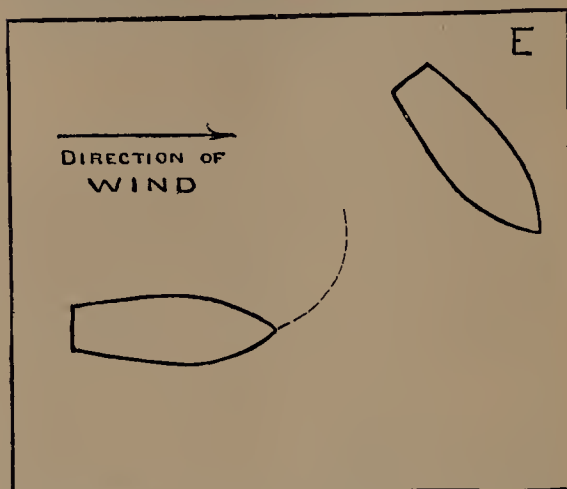
are crossing so as to involve risk of collision, the vessel with the wind on the port side shall keep out of the way of the vessel with the wind on

the vessel that is to windward shall keep out of way of the vessel that is to leeward.

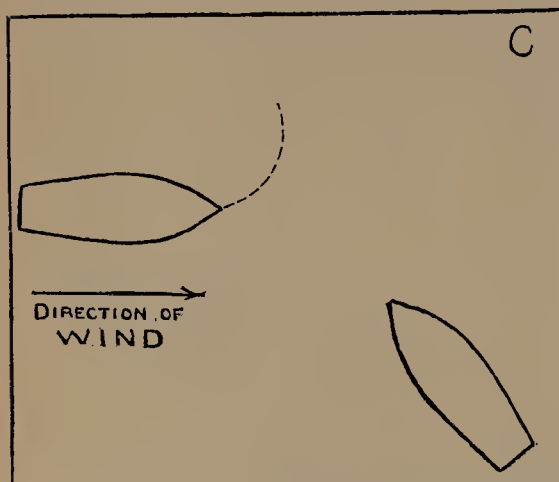
Two steam vessels meeting end on, so as to in-



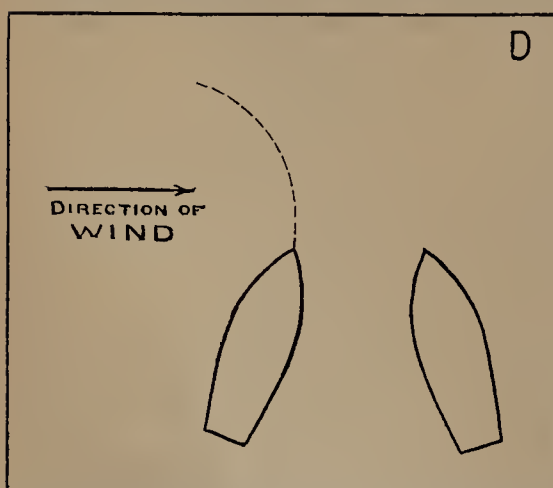
the starboard side (see B), except when the vessel with the wind on the port side is close hauled



volve risk of collision, shall pass to the right (see A). When two steam vessels are crossing so as to involve risk of collision, the vessel that has the other on her own starboard side shall keep out of the way (see F). The steam vessel must



and the other vessel free, in which case the latter vessel must keep out of the way (see C).



But if they have the wind on the same side (see D), or if one of them has the wind aft (see E),

give way to the sailing vessel. Every steam vessel, when approaching another vessel so as to involve the risk of collision, must slacken her speed or stop and reverse; and in a fog every steam vessel must go at moderate speed.

Every vessel overtaking another vessel must keep out of the way of the overtaken vessel.

These rules are not to be followed blindly, for special circumstances may render a departure from them necessary.

**RUSSIA**, an empire in northern Europe and Asia. The legislative, executive, and judicial power is concentrated in the Emperor. The throne is transmitted through the male line by primogeniture, and to female descendants in default of males, in the Romanoff-Holstein-Gottorp family. The Emperor is assisted by the Committee of Ministers, members of which preside over the executive departments and suggest projects of law relating to them; the Council of State, which examines projects of law and discusses the budget; the Ruling Senate, which

superintends the judiciary, acts as the court of last resort, and examines into the general administration of the country; and the Holy Synod, which superintends religious and ecclesiastical affairs. The ministers in 1893 were as follow: President, N. C. Bunge; Minister of the Imperial Household, Count Vorontzoff-Dashkoff; Minister of Foreign Affairs, Nicolas Carlovich Giers; Minister of War, Gen. P. S. Vannovsky; Minister of Marine, Admiral N. M. Tchikhatcheff; Minister of the Interior, J. D. Durnovo; Minister of Finance, S. J. Vitte; Minister of Communications, Krivoshein; Minister of Public Instruction, Count J. D. Delianoff; Procurator-General of the Holy Synod, K. P. Pobiedonostseff; Minister of Agriculture and Domains, A. S. Yermoloff; Minister of Justice, N. A. Manassein; Controller-General, T. J. Filippoff; without portfolio, D. M. Solski and N. J. Stoianovsky; also the Grand Dukes Nicholas, Vladimir, Alexis, and Michael.

**Finances.**—The ordinary revenue for 1892 was 970,164,000 rubles, which was 83,620,000 rubles better than the budget estimate. The extraordinary receipts amounted to 198,679,000 rubles. The ordinary expenditures amounted to 910,684,000 rubles, or 984,000 rubles less than the estimate, and the extraordinary expenditures to 214,771,000 rubles. In the budget of receipts for 1893 the direct taxes are calculated at 94,950,680 rubles, of which 44,703,249 rubles are the product of land and personal taxes, 37,732,431 rubles of trading patents, and 12,515,000 rubles of a tax of 5 per cent. on incomes from capital; the yield of indirect taxes is 535,900,773 rubles, of which 134,970,000 rubles come from customs, 339,651,323 rubles from duties on consumption (257,393,721 from drinks, 30,043,102 from tobacco, 16,041,000 from petroleum, 28,655,500 from beet sugar, and 7,518,000 from matches), and 61,279,450 rubles from stamp and registration duties and taxes on transportation and travel by express trains, on passports, on fire insurance, etc.; 38,537,114 rubles come from state monopolies, 22,677,400 from posts (11,950,000 from telegraphs, and the remainder from mines and the mints); 136,322,617 rubles are derived from state property (81,189,000 from railroads, 13,647,282 from rent of domains, 10,780,759 from movable property, 827,720 from sales of land, 16,716,680 from forests, 9,489,076 from mines and manufactories, and 3,672,100 from railroad concessions); 77,000,000 rubles are paid by peasants for the redemption of land; and 78,510,959 rubles are miscellaneous receipts. The total estimated revenue is 961,222,143 rubles from ordinary and 79,236,242 from extraordinary sources. The total ordinary expenditures are estimated for 1893 at 947,690,385, and the extraordinary expenditures at 92,768,000 rubles. Of the ordinary expenditures, 264,325,647 rubles are for the public debt (including 68,021,242 rubles for railroad loans), 2,115,165 rubles are for the superior government bodies, 11,887,004 rubles for the Holy Synod, 10,560,000 rubles for the Ministry of the Imperial Household, 5,289,909 rubles for the Ministry of Foreign Affairs, 232,937,030 rubles for the Ministry of War, 49,892,803 rubles for the Ministry of Marine, 122,572,579 rubles for the Ministry of Finance, 25,458,305 rubles for the Ministry of Domains, 82,352,-

659 rubles for the Ministry of the Interior, 22,411,434 rubles for the Ministry of Public Instruction, 70,800,814 rubles for the Ministry of Communications, 25,310,830 rubles for the Ministry of Justice, 4,466,043 for the Department of Control, 1,310,163 rubles for the imperial stud, and 16,000,000 rubles for unforeseen uses.

The Government debts payable in specie on Jan. 1, 1893, amounted to 547,586,500 rubles, besides £2,489,700 sterling. The sum of the debts payable in credit rubles was 2,889,585,622 rubles, including 568,527,206 rubles of paper currency not secured by reserves. This does not include the debt of the Kingdom of Poland or the railroad obligations, which raise the total to 1,275,399,077 metallic rubles, 3,079,800,785 credit rubles, £2,489,700 sterling, and 541,502,000 francs. A new internal  $4\frac{1}{2}$ -per-cent. loan of 100,000,000 rubles was sanctioned in March, 1893, to cover the deficit in the budget for that year and the disbursements of the treasury on account of the famine of 1891. The Government in the same month suspended the coinage of silver rubles on private account, the depreciation in silver having lowered their exchange value till they were worth less than the paper ruble, which is payable in silver or gold. The amount of paper currency which under the law ought to have been destroyed in 1892 was kept in the treasury to tide over the difficulty caused by the famine-relief expenditure. The Minister of Finance resorted to extraordinary measures to check speculation in paper rubles, refusing to allow the Imperial Bank to pay out any except for the purposes of legitimate trade. He asked for the co-operation of bankers in devising regulations to prevent speculation. A law was passed imposing a tax of 1 kopeck per 100 rubles on currency sent or carried out of the country. Importation of foreign silver coins forbidden.

**Commerce and Production.**—The total value of the imports of merchandise for 1892 was 403,900,000 rubles, of which 346,600,000 rubles came from Europe, 11,900,000 rubles from Finland, and 45,500,000 rubles from Asia. The total value of the exports was 489,400,000 rubles, of which 399,600,000 rubles went to Europe, 21,100,000 rubles to Finland, and 68,700,000 rubles to Asia. The values of some of the chief imports by the European frontiers were: Raw textiles and yarn, 114,078,000 rubles; metal goods and machinery, 36,636,000 rubles; raw metals, 26,458,000 rubles; tea and coffee, 20,038,000 rubles; coloring matters, etc., 12,908,000 rubles; coal, 12,122,000 rubles; skins, leather, and peltry, 8,382,000 rubles; wines and spirits, 8,282,000 rubles; textile manufactures, 6,388,000 rubles. The principal exports by the way of the European frontiers were: Cereals, 136,025,000 rubles; textile materials, 81,798,000 rubles; timber, 48,652,000 rubles; linseed, 27,077,000 rubles; animals, 15,178,000 rubles; skins and peltry, 11,693,000 rubles; sugar, 5,772,000 rubles; textile manufactures, 5,398,000 rubles. The principal import from Asia was tea of the value of 18,783,000 rubles, and the principal exports to Asia were cereals, tissues, and miscellaneous merchandise. The imports of precious metals were 110,531,000 rubles from Europe and 3,015,000 rubles from Asia, and the exports were 117,000 rubles to Europe and 4,316,000 rubles to Asia. The Gov-



ernment has lately decided to appoint official commercial agents in central Asia and also in the European and American centers of trade. Bokhara and the Russian part of the Pamirs have been incorporated in the Russian customs frontiers.

**Navigation.**—There were 5,650 vessels entered at the Baltic ports, 642 at the White Sea ports, and 4,514 at the Black Sea and Sea of Azov ports in 1891; total, 10,806 vessels, of which 4,790 carried cargoes and 6,016 were in ballast. The departures numbered 5,512 from Baltic ports, 615 from White Sea ports, and 4,513 from the Southern ports; total, 10,640, of which 9,523 carried cargoes and 1,117 were in ballast. The total number of steamers entered was 7,711, and cleared 7,613. Of the total number of vessels entered, 3,359 were English, 1,529 German, 1,387 Russian, 1,349 Swedish and Norwegian, 1,017 Danish, 686 Turkish, 213 Austrian, and 132 Dutch, etc.

**Communications.**—The railroads have a total length of 27,814 versts, or 18,340 miles, without counting the railroads of Finland or the Transcaspian line of 900 miles. The eastern section of the Trans-Siberian Railroad, from Vladivostok to Nicol'sk, was opened in the beginning of September, 1893. The Cesarevich has been made president of the committee for expediting this national undertaking. The state and other telegraphs have a length of 126,474 kilometres, with 301,240 kilometres of wire. The number of dispatches in 1891 was 12,133,940. The post-office carried 192,005,000 domestic and 25,679,000 foreign letters, 30,345,000 postal cards, and 169,833,000 printed inclosures.

**The Army.**—The army is organized in 21 corps of about 45,000 men each, distributed in 14 circumscriptions. The infantry, which is armed with a repeating rifle very much like the French Lebel, comprises 165 regiments of the line, 20 regiments of chasseurs, 16 regiments of grenadiers, and 12 regiments of the guard. The cavalry is divided into 671 squadrons, of which 352 are regular cavalry, including cuirassiers, dragoons, hussars, and uhlans, and 319 are Cossacks, who furnish their own horses and uniforms, and are therefore exempt from all taxes. The artillery is composed of 96 siege batteries, 194 field batteries, 15 mountain batteries, 43 mounted batteries, and 3 mortar regiments, having altogether nearly 5,000 field and light guns and 1,500 siege guns.

About 1,000,000 young men are available annually for service, of whom the best are enrolled in the active army and the rest in the militia. The militia, which is composed of all able-bodied Russians between twenty and forty-five years of age who are not in the active army, is divided into two vans. The first van, destined to fill vacancies in the regular army and its reserve, is made up of the young men and those who have served their time in the regular army and reserves. The second van constitutes a territorial militia, to which recourse would be had only in case of invasion or extraordinary danger. The peace strength of the active army is 50,561 officers and 787,872 rank and file; total, 817,933. The war strength is 3,420,746, without counting the Cossacks or the territorial army. The first steps were taken in 1893 to Russify the Finnish

army, which under the privileges granted by the Emperors after the conquest has had a national organization entirely distinct from the Russian military system, being commanded exclusively by Finnish officers and liable to service only for the defense of Finland. When encamped for the first time with the Russian troops, in the summer of 1893, the Finnish soldiers showed their animosity in various acts of violence. The Russophiles, who dominate the Government, wish to see the Finnish troops added to the effective force of the empire and commanded where necessary by Russians and to change the period of active service in Finland from three years to five, so as to put the Finns on the same footing as Russians, and abolish the Finnish militia.

**The Navy.**—The Russian navy is composed of four separate fleets—on the Black Sea, the Baltic, in Siberia, and on the Caspian. The Baltic fleet in 1893 consisted of 5 armored turret ships, 16 armored cruisers, 1 casemated cruiser, 12 armored coast-guard monitors, 3 armored gunboats, 2 flush-decked cruisers, 11 clippers, 3 torpedo cruisers, 3 corvettes used as school ships, 10 torpedo gunboats, 6 yachts, 3 floating batteries, 12 first-class torpedo boats, 80 small torpedo boats, and 6 transports, carrying altogether 379 large and 894 small guns. The Black Sea fleet comprised 5 armored turret ships, 2 *popoffkas*, 1 cruiser, 8 gunboats, 3 steamers, 2 torpedo cruisers, 16 first-class torpedo boats, and 6 transports, having an aggregate armament of 88 large and 295 small guns. In Siberia there were 4 gunboats and 2 torpedo boats, and on the Caspian 2 gunboats and 4 other vessels. The navy was manned by 1,249 officers, 807 employees, and 25,736 seamen. In the beginning of October, 1893, the "Roosalka," one of the old ironclad monitors, went down in the Gulf of Finland with all on board. A new naval and military port was opened in August, 1893, at Libau, which will also be opened for commercial vessels. This port is not as liable to be closed by ice as Cronstadt. A naval commission has been appointed to select a naval harbor on the northern coast near the Norway frontier, whence war ships could have access to the ocean in case the Baltic fleet should be blockaded by Great Britain or some other naval power. The site chosen is the Bay of Pujmanki, near Cape Kalassari, in northern Finland, which can be connected with the northern terminus of the Finland railroad system at Uleaborg by 400 miles of railroad. A squadron was stationed in the Mediterranean in 1893, consisting of some of the vessels that visited America, and afterward returned at Toulon the visit of the French fleet at Toulon. The "Rurik," a large cruiser, carrying 4 8-inch and 16 6-inch guns, one of the fastest vessels afloat, was equipped in 1893, and the "Ushakoff," a powerful ironclad for coast defense, was launched in the Baltic yard on the Neva, and at Nikolaieff the "Three Saints," the sixth first-class battle ship in the Black Sea.

**Tariff War with Germany.**—In November, 1891, negotiations were begun for a commercial treaty with Germany, to facilitate which the Russian Government lowered its duties on a large number of articles. The German Government, anxious to secure favorable tariff arrangements with Austria, Italy, Belgium, and Switzer-

land, and, influenced by the demand for protection, preferred to carry on a tariff war with Russia, which was then willing to bind itself not to raise its tariff for a certain time on a list of articles manufactured in Germany, asking in return reductions in the German duties on cereals, wood, cattle, etc. After the German treaties were made with the countries of the triple alliance, Russian corn had to pay 42 per cent., wood 33 per cent., horses 100 per cent., and eggs 50 per cent. higher rates than similar imports into Germany from other countries. The Russian Government tardily resorted to retaliatory measures, framing a new general tariff and applying it to Germany, while to France and other European countries and the United States were given the advantage of special rates; and, lastly, differentiating against the considerable German trade with Finland subsequent to the new German treaty with Roumania, admitting Roumanian rye on reciprocity terms. Germany is the only export market for Russian rye, and the closing of this market caused great distress among the farmers, which the Government endeavored to alleviate by purchasing supplies for the army sufficient to last for years and by constraining the banks to lend money on the stock of unsold grain to the amount of 50 per cent. of its market value. The German consumers were not put to as great inconvenience as the Russian farming population which has formerly supplied them, because imports from Roumania, America, and perhaps some from other parts of Russia imported through Roumania or Austria, kept down the price. In the beginning of October the negotiations for a treaty were resumed in Berlin, and in two months one was concluded at last in

which Germany made satisfactory concessions. While the German agrarian party continued to oppose it bitterly, it was no less obnoxious to the Russian manufacturing interests, which are concentrated at Moscow. In the arrangement, as negotiated by the plenipotentiaries, Russia makes a reduction in the duties on textiles, paper, leather, woodwork, ceramic wares, musical instruments, chemicals, minerals, iron, tin, and copper wares, agricultural instruments, starch, and vegetables averaging 20 per cent., and reduces the rates on coal and on telegraph materials 50 per cent. The German duty on Russian cereals is lowered 30 per cent.

**Bering Sea Sealing.**—In July, 1892, the naval authorities patrolling the waters adjacent to the Russian seal rookeries in Bering Sea captured 6 Canadian schooners, on which were found guns for killing seals in the water and clubs for killing them on land and a large number of seals, of which 90 per cent. were females. The British Government protested, but agreed to a provisional arrangement regulating sealing for 1892. Russia claimed a territorial limit of 30 marine miles from the coasts of Robben and the Commander Islands and 10 miles from the Kamchatka coast, to which the British Government agreed, while the Russian Government agreed to restrict the catch on the islands of Komandorsky and Tulenew to 30,000 seals for the year. British naval vessels were to co-operate in enforcing the regulations. The British Parliament ratified the agreement in June. In July the Emperor issued an ukase forbidding the killing or capturing of fur seals, in any waters under the control of Russia, without especial permission from the Government.

## S

**SALVADOR**, a republic in Central America. The legislative body is a single Chamber of 42 Deputies, elected annually by the votes of all citizens except public functionaries. The President is elected for four years by universal suffrage. The active troops number 4,000 and the militia 15,000. Gen. Carlos Ezeta was elected for the term beginning March 1, 1891.

The area of the republic is 8,100 square miles. The population was 780,426 in 1892.

The receipts of the treasury for 1892 were \$6,896,000, including a loan of \$1,702,000. The import duties amounted to \$3,045,000; tax on brandy, \$1,650,000; stamps and post-office and telegraph receipts, \$490,000. The expenditure for war was \$1,676,000; for the interior, \$1,086,000; for financial administration, \$396,000; for justice, \$195,000; for public instruction \$308,000; for public works, \$323,000; for amortization of loans, \$2,732,000; total expenditures, \$6,784,000. The internal debt in 1892 amounted to \$3,614,000, and the foreign debt to £269,519.

The value of the imports in 1892 was \$2,756,000; of the exports, \$6,838,000. The exports of coffee were worth \$4,500,000; of indigo, \$1,151,000; of sugar, \$164,000; of tobacco, \$158,000.

There are 62 miles of railroad. The telegraphs have 2,396 miles of wire. The number of

dispatches in 1892 was 602,947, of which 198,796 were official. The post-office in 1891 forwarded 609,658 pieces in the internal and 1,058,212 in the foreign service.

**SAMOA**, a monarchy occupying the Samoan Islands in the Pacific Ocean, declared independent and neutral by the Samoan Conference at Berlin, June 14, 1889. King Malietoa Laoupepa, who succeeded to the throne in 1880, was deposed by the Germans and carried away as a prisoner, first to the Cameroons and afterward to the Marshall Islands. In consequence of the protests of the United States, supported by Great Britain, the German protectorate was not consummated, King Tanasese was dispossessed, and the exiled King was restored on Dec. 10, 1889. In the treaty the three powers agreed to allow the native people to govern themselves according to their own laws and customs and elect their sovereign. It was stipulated, however, that Malietoa Laoupepa should be restored, and his successor elected according to native custom. A European chief justice was appointed to decide cases affecting the interests of foreigners. All future sales of land to foreigners was prohibited. O. K. W. von Cedererantz, a Swedish jurist, was appointed Chief Justice.

The area of the islands is 1,700 miles and the population 36,000. There are about 300 whites,



over two thirds of them British subjects and Americans, and the others mostly German, and 1,000 Polynesians from other islands laboring on the plantations. The imposts raised from foreigners amounted in 1892 to 114,565 German marks, of which the Germans paid over 62 per cent., the English 20 per cent., Americans 10 per cent., and other foreigners 8 per cent. Of the total imports, valued at 1,303,702 marks, German houses imported 51 per cent., English, 22 per cent.; American, 15 per cent.; and others 12 per cent. Of the exports, consisting, besides copra, of cotton, coffee, and fruit, and valued at 766,533 marks, German houses exported 62 per cent. and English houses 38 per cent.

After the restoration of Malietoa, as when Tamasese was King, the foreigners domineered over the natives and took advantage of them in money transactions. The chiefs and people, who are of the same race as the Hawaiians, became involved hopelessly in debt, and the native Government, under the guidance of the two European officials, the Chief Justice and Baron Senfft von Pilsach, the German President of the Municipal Council in Apia, who is the official adviser of the King, was reduced almost to bankruptcy. Malietoa, when he was first placed back on the throne, abdicated in favor of Mataafa, but he was induced to resume the royal authority by the white officials, the Berlin Conference having decided that he should be restored. Mataafa again became the leader of a patriotic party opposed to foreign domination, and he was encouraged by some of the whites, who hoped to profit by war and revolution. Mataafa, the hero of the war with the Germans, was the choice of the people, who had elected him according to their laws, but were overruled by the powers; hence they refused to pay the capitation tax of \$1 for each man, woman, and child, which was the only source of revenue for the King's Government, the customs duties and other taxes levied on the whites having been held to be reserved for the expenses of the town and port of Apia. The treaty provided for the taxation of real property in Apia, but the municipal council would not pass the necessary ordinance, although it levied the tax on workingmen and others whose property lay outside of the town limits. The municipality was supported by the customs duties until the Chief Justice decided that they belonged to the General Government. This bankrupted the municipality, until the decision was overruled by the three powers on complaint of the consuls, when the King's Government was again left without money to pay salaries and other obligations. There was constant friction between the Chief Justice and the King's adviser, who endeavored to carry out the spirit of the treaty by safeguarding the interests of the people, and the white planters and traders, on the other hand, and their champions, the foreign consuls. The treaty had imposed a curb on the German Trading and Plantation Company, which formerly dominated the Government and had a free hand to acquire all the fertile land of the islands and cultivate it with imported contract laborers, but in giving a better chance to the British and Americans it exposed the natives to the avaricious wiles of many ingenious individuals instead of the more open

rapacity of a single great corporation. The people, while never questioning the patriotism and good intentions of Malietoa, regarded him as the creature of the whites, and except the Tuamasa, who live in the province surrounding Apia, none would obey his rule, and all looked to Mataafa to deliver them from the foreigners and regain their independence. With the white officials at loggerheads with the white people and the native authorities repudiated by the natives, the purposes of the tripartite treaty were frustrated, and the political, social, commercial, and productive conditions of the country lapsed into chaos. The only real ruler was Mataafa, who set up a camp and a court at Malie, not far from Apia, hoping to impress upon Malietoa and the whites the necessity of carrying out the final act of the Berlin Conference by re-establishing an untrammelled native Government for native affairs. He actually collected some of the head tax and sent it to Malietoa, with whom his relations were at first friendly, then grew strained and hostile as the country sank more and more into destitution and disorder. No one would pay taxes. The whites not only evaded the ground tax provided for in the final act, but found ways to escape paying customs duties. The natives gave a reason, satisfactory to themselves, for withholding the head tax, which was wanted for no public purpose, but only to enable the judge and the president to draw their salaries of \$6,000 and \$5,000 respectively and ship the gold off to Europe. These well-meaning but inexperienced and incompetent officials had no friends either among the whites or the blacks. Their mistakes were magnified and their motives distorted in the only newspaper, and this led the president to commit the serious blunder of secretly buying the newspaper with some of the public funds that remained in the treasury, the proceeds of customs duties that had at first been more effectively collected and had accumulated until they were assigned by the judge's contradictory decrees, first to the municipality, and then to the royal Government. This and the building of an official residence for the president and the payment of salaries left the treasury empty, and thus the ordinances for the building of bridges and improvement of roads could not be carried out. A curious example of the crude misconceptions of the young German was his edict declaring that the pound sterling and the 20-mark gold piece were to be received at \$5 in United States money, which is the currency of the country, instead of \$4.76, the exchange value. Baron von Pilsach and Judge Cedererantz both wanted to resign early in 1893 when they saw that their attempt at government was a hopeless failure. The powers had to deliberate and confer before appointing new men. Meanwhile the natives were drifting into a situation that must result in civil war. Mataafa's followers said that if war came they would drive the whites from the islands; Malietoa's followers said that this would serve them right, for they were the cause of all the trouble; the whites said that the only solution was to annex the islands to some European power and make them rulers over the natives. Mataafa's people had a few firearms that had been hidden away after the last war or smuggled

in. Malietoa had more and better rifles, and he determined to break up the rival Government at Malie. First he asked the powers to intervene, and they tardily sent war ships to Samoa, but none would act until the naval forces of all three were present. After the long preliminary deliberations and challenges that precede Samoan warfare, and after the naval vessels of all the treaty powers had arrived, Malietoa encamped with his Tuamasaga warriors near Malie. Skirmishing began on July 7. An indecisive battle was fought on July 13, in which 30 of Mataafa's men were killed and 20 wounded. The Tuamasaga, boasting a victory, marched into Apia displaying in triumph the heads of their fallen enemies. Before hostilities could proceed further the war ships intervened and sent a force against Mataafa, to which he surrendered. A conference of the consuls and naval commanders decided that he should be deported, with 10 of his chiefs, to the Marshall Islands, while 24 other rebels were sentenced to penal servitude for three years and 87 were fined. Mataafa was carried away into exile, and the native party for a time dispersed and deprived of a leader. The unpopular judge and president of the municipal council were at length relieved. Henry Ide, of Vermont, was, in September, appointed Chief Justice, and Baron von Pilsach was replaced by a German named Schmidt, who had been a vice-consul on the islands.

**SANTO DOMINGO**, a republic in the West Indies occupying the eastern part of the island of Hayti or Santo Domingo. The Congress is a single House of 22 members, elected indirectly for four years, like the President and Vice-President. The President is Gen. Ulises Heureaux, who was re-elected in November, 1892. The revenue was about \$2,000,000 in 1893.

The area of the republic is 18,045 square miles. There are about 417,000 inhabitants, of mixed negro, Indian, and Spanish blood, speaking the Spanish language, and in the towns also French or English. The imports in 1892 amounted to \$2,430,000, and the exports to \$2,197,000.

There are 71 miles of railroad and 230 miles of telegraph. The post-office carried 204,546 internal letters, circulars, and papers, and 182,015 in the foreign service in 1889.

**Attempted Revolution.**—President Heureaux, who is a despot of iron will, has furthered the development of the natural wealth of the country. He encourages the introduction of American capital and enterprise, and favors the cession of Samana Bay to the United States Government. His enemies say that he is working for the annexation of Santo Domingo to the United States. A treaty has been made between Hayti and Santo Domingo whereby they mutually bind themselves never to grant any territorial rights over any part of the island to a foreign power. Notwithstanding this public compact, when an American syndicate treated in 1893 for the transfer to them of the Holland loan of \$7,000,000, guaranteed on the customs, together with the privilege of building a railroad from Palarto de Plata to Santiago, the opponents of the President circulated the story that for an enormous bribe he was giving Americans control over the revenues of the country, and preparing the way for annexation. This sus-

picion was enough to rouse an insurrection in Santo Domingo and secure sympathy and aid from Hayti. Risings occurred in the border districts and where the supporters of Marchena, the rival candidate for President in 1892, were strong. Heureaux, always swift and unhesitating in action, arrested Marchena after having granted him permission to reside in Paris, and confined him in the ancient Columbus tower. Other prominent men in the capital who were suspected of being implicated in the plot to overthrow Heureaux were arrested before the signal for revolution was given. The sporadic disturbances that occurred later were speedily and effectually stopped by energetic military measures that Gen. Heureaux carried out in person. Strong bodies of troops occupied the discontented districts. A boat's crew from the American schooner "Hatty Crosby" was fired on by the ignorant guards at Azua, although the boat displayed the United States flag. For this an apology was made and an indemnity promised to a seaman who was wounded. On Dec. 10, 1893, Gen. Campos, governor of the Azua district, was assassinated and a few days later an attempt was made to murder President Heureaux and his escort with dynamite bombs. Gen. Marchena and Carlos and Pablo Baez, nephews of ex-President Baez, were taken to Azua on a Government yacht, and on Dec. 21 were shot with the 6 dynamiters.

**SERVIA**, a monarchy in southeastern Europe. At the abdication of King Milan Obrenovich, March 6, 1889, in favor of his son, Alexander I, the executive powers were committed to a regency composed of J. Ristich, J. Belimarkovich, and K. S. Protich. The death of Gen. Protich in June, 1892, left only 2 Regents. Under the Constitution of Jan. 3, 1889, the Skupstina, which meets annually to make laws for the nation, is composed of 134 members, 1 to 4,500 inhabitants, elected by the direct suffrage of all citizens who pay their poll tax. The Cabinet at the beginning of 1893 was composed of the following members: Premier and Minister of Foreign Affairs, J. Avankumovich; Minister of War, Gen. A. Bogichevich; Minister of Finance, D. Stojanovich; Minister of Public Works, K. Alkovich; Minister of Public Instruction, J. Giorgievich; Minister of the Interior, S. Ribaratz; Minister of Justice, Z. Belichkovich; Minister of Agriculture and Commerce, S. Gwozdich.

**Area and Population.**—The area of the kingdom is 19,050 square miles. The population was estimated at the end of 1892 at 2,226,741 persons, of whom 1,143,661 were males and 1,038,080 females. There are 143,684 individuals whose language is the Roumanian, and 37,581 speaking Bohemian. The number of marriages in 1892 was 20,934; of births, 93,883; of deaths, 74,128. Belgrade, the capital, has 54,249 inhabitants.

**Finances.**—The budget for 1893 makes the total revenue 60,135,839 dinars or francs, of which 22,186,469 dinars are derived from direct taxation, 3,700,000 dinars from customs, 3,000,000 dinars from excise, 12,426,000 dinars from the tobacco and salt monopolies, 2,395,000 dinars from law courts, 9,230,000 dinars from state property, including railroads, posts, telegraphs, mines, manufactories, and domains, and 7,198,370 dinars from other sources. The total expendi-



tures are set down as 62,719,846 dinars, including a supplementary credit of 2,609,251 dinars. The chief items are 20,466,188 dinars for the public debt, and 11,327,483 dinars for the army. The debt on Jan. 1, 1893, amounted to the capital sum of 324,956,542 dinars, of which 155,310,000 dinars were borrowed to build railroads.

**Commerce.**—The value of the imports in 1892 was 37,069,000 dinars, against 42,806,000 dinars in 1891; of the exports, 46,452,000 dinars against 52,480,000 dinars. The principal exports are prunes, wine, hogs, cattle, sheep, grain, and barrel staves. Every peasant owns his small farm, orchard, or vineyard.

**Communications.**—The state railroads have a length of 337 miles. The post-office handled 5,195,000 internal and 3,655,000 foreign letters in 1891, besides 354,000 postal cards. The telegraphs have a total length of 1,942 miles, with 3,717 miles of wire. The number of dispatches in 1892 was 653,449, of which 463,798 were paid domestic dispatches.

**The Army.**—The law of Jan. 31, 1889, introduced obligatory service for one year with the colors. The strength of the active army and its reserve is 2,474 officers and 102,233 men with 26,486 horses and 282 guns. The military strength of the nation, including the first and second bans of the militia, is 57,000 officers and 239,950 men, with 45,100 horses and 402 cannon.

**Politics.**—After the dissolution of the Skupsh-tina in December, 1892, the Regents ordered the general elections to be held in February, 1893. The last Skupsh-tina was strongly Radical, but in spite of that fact a Liberal ministry had been appointed, and the Regents declared that even should the new Skupsh-tina contain a majority of Radicals, the latter would not be allowed to form a Government. The law prohibiting citizens to vote who had not paid their taxes was enforced against Radicals, while all Liberal votes were counted. When, nevertheless, the Radicals elected a majority, the Government declared the election of 7 Radical members illegal, and thereby obtained a majority of 3. Of the 134 members, the Liberals claimed 63, the Radicals 57, and the Progressists 3. The new Skupsh-tina was convoked on April 6, 1893. On the first day of the session the Radicals and Progressists left the House in a body and declared their intentions of remaining absent, thereby preventing the organization of the Chamber. The Regents simply declared the law passed in 1891 by a Radical majority increasing the number of delegates from 125 to 134 to be unconstitutional, organized the House, and commenced business.

**The Coup d'État.**—The abuse of power by the Regents had roused public indignation to the highest pitch, and fears were entertained of a civil war, when, on the night of April 13, 1893, King Alexander, still an infant, and during whose infancy the regency had been appointed, declared himself of age and took the reins of the Government into his own hands. For the purpose of carrying out this *coup d'état* he invited the Regents and all the ministers to a banquet, given in his palace, to celebrate his successful examinations as a Servian student. During the banquet the houses of the Regents and ministers were taken possession of by military forces, whose co-operation had been secured previously,

and all Government buildings were guarded by troops. After the third course of the banquet the King arose and addressed the Regents:

Gentlemen, for four years you, in my name, have administered the kingly power. I thank you heartily for the trouble you have taken. I now feel able to administer the power myself, and will exercise it from this moment. I beg you, therefore, at once to hand me your resignations in writing.

M. Ristich, the first Regent, replied that he could not and would not comply with the King's request, which, he said, was unconstitutional. The Regents and ministers remaining obdurate, they were then escorted to a wing of the palace and kept there under guard for the night, and their homes were guarded by soldiers for a few days longer. On April 14 the King issued a proclamation stating that the Constitution had of late been placed in sore jeopardy, the rights of citizens imperiled, and the constitutional position of Parliament so abased that no course was left open for the King but to make an end of this unhappy condition of affairs, and announcing that he took the kingly power into his own hands and that from that day the Constitution went into effective force and acquired its full significance. It further declared that the Regents, Ristich and Gen. Belimarkovich, were relieved of their posts, that the Cabinet of Avakumovich was dismissed, and that the newly appointed ministry was composed of the following members: Premier and Minister of Public Instruction, Dr. Dokich; Minister of Finance, Dr. Vuich; Minister of the Interior, M. Milosavljevich; Minister of War, Col. Franassovich; Minister of Foreign Affairs, Andreas Nikolich; Minister of Public Works, Lieut.-Col. Stankovich; Minister of Commerce, Miloshevich. The Skupsh-tina was immediately dissolved, and writs for new elections to be held on April 30 were issued. The change of government was received with rejoicing by the people. The elections resulted in the return of 121 Radicals, 11 Progressists, and 1 Liberal. The Liberals generally abstained from voting, but this reduced the total ballot only from 237,900 to 231,000. The ministers tendered their resignations when the Skupsh-tina met on June 13. All were asked to retain their posts except Gen. Franassovich, who made way for Gen. Sava Gruich, a Moderate Radical. The speech from the throne was a severe arraignment of the late Liberal Government, which, while the Regency was incomplete and therefore legally incompetent, to administer the country, had dissolved the Assembly, which was invested with the mission of filling the vacancy, and had unscrupulously endeavored to stifle the electoral voice of the country, and when the electorate refused to be intimidated, had altered its verdict, and finally, with the Regency not yet completed after the prescribed term had passed, opened an Assembly that was not legally constituted. The Radicals were in a difficult position in regard to the finances, because their party had demanded the repeal of the tobacco and salt monopolies, and many peasants were already illegally planting tobacco. The Liberals were in a large measure responsible for the deficits because they had been lenient in assessing and lax in collecting taxes in order to attract the peasantry to their

party. The Radical Minister of Finance was compelled to put an end to these illegal practices and not only retain the tobacco monopoly, but impose duties as heavy as those on tobacco and salt on spirits, petroleum, cigarette paper, and matches, and also to issue a loan of 44,000,000 francs. New commercial treaties with Austria-Hungary and Germany and with Great Britain reduced the income from import duties. The new loan was required to pay off the floating debt and for strengthening the military establishment, an object not favored by the Radicals, who have formerly demanded the abolition of the regular army. The Extreme Radicals, though not admitted in the Cabinet, were predominant in the Skupshtina. They gave their chief attention to drawing up articles of impeachment against the ex-ministers, overriding in this the wishes of the Government. Among the instances in which they were charged with invading personal and property rights were the suppression of a communal council and the incarceration of all the members, and the shooting down of 16 peasants in Gorachitza by regular soldiers. The new Government took steps to settle a troublesome boundary question that has been pending since 1884 by appointing commissioners to meet Austrian commissioners and delimit the frontier between Servia and Bosnia near the river Drina.

**SIAM**, an absolute monarchy in southeastern Asia. Khulalongkorn, born Sept. 20, 1853, the fifth sovereign of the dynasty founded by Chakri in 1782, succeeded his father, Maha Mongkut, in 1868. The area is about 250,000 square miles, including the Laos territory now annexed to French Indo-China, and the estimated population 6,000,000, of whom 2,000,000 are Siamese, 2,000,000 Laotians, 1,000,000 Malays, and 1,000,000 Chinese. Bangkok, the capital, has 350,000 inhabitants, of whom half are Chinese. The King's revenue is about \$10,000,000, obtained from invested funds, monopolies of spirits and opium, customs, royalties of tin mines and fisheries, a tax on gambling, etc. The standing army numbers 12,000 men, but all able-bodied men may be called into the service. The Government had 60,000 stands of improved arms, and procured more during the dispute with France in 1893. The naval force consists of 1 protected cruiser, 2 wooden corvettes, 6 gunboats, and 3 yachts. The navy is officered by Danes and Englishmen, and the King's guard of 4,000 men, armed with Mannlicher rifles and Krupp field guns, has been instructed by German officers.

The imports in 1892 were valued at \$9,425,000. The value of the exports was \$10,084,000, consisting principally of the following articles: Rice, \$6,897,000; teak wood, \$457,000; pepper, \$389,000; dried and salted fish, \$353,000; cattle, \$199,000. The external trade is mainly in the hands of the English, the Germans coming next and the French third. Formerly the French share was much larger than it is now. The main part of the commerce is with Singapore and Hong-Kong, carried in English bottoms. The internal commerce is in the hands of the Chinese. There is a postal service directed by Germans which forwarded 208,872 domestic and 234,537 foreign letters in 1891. Bangkok has electric lighting and various other modern im-

provements, including an electric street railroad built by Americans. A steam railroad between Bangkok and Paknam was opened for traffic on April 11, 1893.

**Conflict with France.**—The Mekong river, north of Cambodia, runs through the country of the Laos tribes. They are of the same race as the Siamese, and those bordering on Siam have long paid tribute to the court at Bangkok, while those dwelling between the river and the mountains that divide them from Annam were formerly unwilling vassals of the Emperor of Annam. During the hostilities that ended with the establishment of a French protectorate over Annam the Annamite garrisons were withdrawn from the positions which they held in the Laos States, whereupon the Siamese established posts on the upper river and in the north checked the ravages of the Chinese marauders. North of the Laos States, on both sides of the Mekong, are Shan tribes over whom the British Indian Government claimed some suzerain rights as the successor to the empire of the Kings of Burmah, which were disputed in respect to the provinces between the eighteenth and twenty-first parallels by Siam and in respect to the country north of the twenty-first degree of latitude by China, and which it abandoned to those powers in return for compensation in other quarters. M. Ribot, in 1892, first asserted the historical claim of Annam to the whole left bank of the upper Mekong and of Cambodia to the valuable district east of the river in the vicinity of the cataracts which was actually occupied and administered by Siam. After his announcement the Siamese Government took steps to render more effective their occupation of the disputed territory, while the French did nothing to give effect to their claims until the beginning of 1893, when they transported gunboats in sections to the river north of the cataracts and sent Annamite troops under the command of French officers over the mountains. The Laotians resisted the advance of their old enemies, and the Siamese Government raised a large army by conscription, stripping the rice fields of laborers in order to defend the eastern frontier. In the southeast of Siam the rich districts of Battambang and Angkor belong historically and ethnologically to Cambodia by a better title than any part of the Laos country does to Annam, for they are conquered provinces of the ancient kingdom whose inhabitants bear uneasily the yoke of the Siamese and desire to be reunited with their brothers. But the French Government was precluded from claiming these provinces by the treaty of 1856, which acknowledged them to be a part of Siam. Between Annam and Siam the boundary had never been delimited, and grounds for the French claim for a rectification of the frontier were furnished by the Laotian tribes, of whose incursions into Annam the French minister at Bangkok began to complain in 1889. The English railroad enterprises in Siam, one of which contemplated a line to Luang Prabang, the chief mart on the upper Mekong, near the border of the Shan States, caused the French to take active measures to adjust the frontier according to their idea. The arrangement to delimit the frontier between Siam and the northern Shan States by



a British Indian commission evoked a declaration in the Chamber from the French Government, which had not been consulted regarding the partition of the territory on both sides of the Mekong between Siam and China.

A border fight between some Laotians and the Annamite frontier guards afforded the desired pretext for the French advance. On April 1, 1893, a body of Annamite *tirailleurs* took the Siamese post of Stung Treng by surprise, and the Siamese commissioner and troops withdrew without fighting. Prior to the advance of the French forces the Siamese Government offered to submit the boundary question to arbitration, and suggested the President of the United States as an arbitrator. The Siamese commissioner to the Columbian Exposition had authority to ask the good offices of the United States, but was told by Secretary Gresham that the United States could not intervene. The British Government was appealed to for moral or material support, and the Siamese were left in doubt as to what assistance they could expect from that quarter until, after an exchange of views, the French Government, on giving assurance that the integrity and independence of Siam would be respected, was told that England would in no way oppose it in the conflict with Siam regarding frontiers. The Siamese Government made a proposition, when the French began their advance, that, pending a definite settlement of the frontier by arbitration or negotiation, a belt of country 30 miles wide, from the thirteenth to the nineteenth degrees of north latitude, should be marked off on the western side of the crest of the mountains, and that, with certain specified exceptions, all Siamese and Annamese garrisons should be removed from the whole of this belt and no new military posts established there, but that the civil administration should be in Siamese hands. When the French Government formulated its claim to the whole country down to the Mekong, the Siamese authorities refused to discuss it and made preparations to defend the Mekong valley with the assistance of the inhabitants, at the same time strengthening the fortifications of the Menam river below Bangkok. The older statesmen and the people in general were in favor of peace and compromise, but the foreign minister, Prince Devawongse, and the young nobility of the Queen's party were eager for war. Stung Treng had been occupied by a French force about nine years before, and after they evacuated it by a Siamese commissioner, who ruled by military force, but was unable to extend the conquest eastward of the river into Laos. Other points on the left bank of the Mekong north of Stung Treng were occupied by the Siamese later. After the French had regained possession of this village they next occupied, on April 4, the island of Kong or Khone, where there were 2 Laotian villages, and on it they erected fortifications, intending to launch there the gunboat flotilla for the middle Mekong. The Siamese garrison evacuated the island without resistance, and in like manner they gave up So Sang, Muong Vinh, and other posts. After they had begun their works at Kong a French column was suddenly attacked by an overwhelming force of Siamese and Laotians. Many Annamite soldiers were

killed, and Capt. Thoreux, the military commander, was taken prisoner. The Siamese authorities at Bangkok disavowed responsibility for the incident, attributing it to the inveterate hostility of the Laos tribes toward the Annamites. The Siamese mandarins led the Laotians against Kong, which they attacked several times and invested, cutting off supplies, until a French relieving column, under Capt. Adam de Villers, arrived on May 22. The important post of Cammon was surrendered to Resident Luce, and the mandarin was conducted to the Mekong by a French inspector of militia, M. Groscurin, and an Annamite escort. The Frenchman fell ill at Keng Chek, and the mandarin sent across the river for an armed force of Siamese, who on June 3 massacred the entire escort. M. Groscurin was shot, according to French report, while helpless in bed, by the mandarin.

The French squadron in the far East was immediately ordered to Siam, and the French representative at Bangkok demanded reparation. On June 15 the French occupied the island of Samit, off the coast; on June 17, the island of Rong; and on June 18, Rong Sam Len. When the French ships arrived at the mouth of the Menam, M. Pavie, the French minister, requested permission for 2 more gunboats to ascend to Bangkok, where the "Lutin" was anchored with decks cleared for action and machine guns mounted menacingly in her tops. Permission was denied, and the minister sent instructions to Admiral Edgar Humann not to enter the river. The Siamese had sunk junks in the river, closing the channel except a very narrow passage. They threatened to sink the French ships if they attempted to cross the bar. The minister's message did not reach Admiral Humann, whose officers, as night was falling on July 13, crossed the bar with the "Inconstant" and "Comète," notwithstanding the explosion of a submarine torpedo directly ahead of them. As he approached Paknam, where, under the treaty, French war vessels had an unquestioned right to anchor, a blank shot was fired from the forts, followed by a solid shot across the bow of the leading vessels. The French vessels forged ahead, steaming 10 knots an hour, while the forts and the 6 Siamese vessels kept up a constant fire for half an hour, which was returned by the French. Little damage was done, as it was growing dark. In the Siamese ships and forts 20 men were killed. One gunboat was rammed and sunk. The French lost 3 killed. The 2 vessels anchored alongside the "Lutin," opposite the French legation. The "Jean Baptiste Say," a French mail steamer that piloted the gunboats over the bar, was disabled by a shot from the forts, and run aground below Paknam to save her from sinking. On the following day the Siamese boarded and sacked and attempted to sink the vessel and maltreated the crew. A party from the gunboat "Forfait" boarded her to pull down the Siamese flag and save her from destruction, but was driven away. The French Government declared the Siamese authorities guilty of an unprovoked aggression in firing upon the French vessels, because the treaty of 1856 secures their right to ascend not only to Paknam, but with previous notification and an arrangement about anchorage also to Bangkok.

While these events were happening the Siamese made extraordinary efforts in the Mekong valley to check the French occupation and prevent the passage of gunboats. They massed troops on both sides of the Mekong near Kong, erected forts, especially on the left bank, and resumed the siege of the French forts on the island. Capt. de Villers, on July 14, to prevent the blockade, assaulted and captured the forts of Donthane and Taphan with a force of marines, losing 6 men and inflicting heavy losses on the Siamese. Subsequently he expelled the Siamese from their 4 forts on the islands of the Kong group by a series of assaults, in which they lost 300 killed. In the vicinity of Cammon the Siamese renewed their attacks on the French posts and were repelled. When the French ships had forced the passage of the Menam and menaced Bangkok the peace party at the court prevailed on the King to propose an armistice, which the French accepted. The Siamese agreed to withdraw their forces from Mekong valley.

On July 20 M. Pavie presented to the Siamese Government the ultimatum of France, in which she demanded the acceptance within forty-eight hours of the following terms: (1) The recognition of the rights of Annam and Cambodia to the left bank south of 23° of north latitude, and to the islands of the Mekong; (2) the evacuation within a month of the Siamese posts on the left bank of the Mekong; (3) satisfaction for the incident of Keng Chek and for the aggression upon the French gunboats in the Menam; (4) punishment of the guilty and reparation to the families of the victims; (5) an indemnity of 2,000,000 francs for damages caused to French subjects at various times; (6) the deposit of 3,000,000 francs to cover all claims or an assignment of the revenues of the provinces of Battambang and Siemriep or Angkor.

The Chinese *chargé d'affaires* in Paris informed M. Develle that Siam possessed no territory east of the Mekong as far north as latitude 23°. The Siamese Government signified its partial acceptance of the French terms, agreeing to deposit the sum demanded to cover indemnifications; to punish persons found guilty of acts of aggression against French citizens contrary to national or international law; and to regard as Annamite and Cambodian territory the left bank of the Mekong south of the northernmost point occupied by the Franco-Annamite troops, in latitude 18°, while the use of the islands should be common to Siam, Annam, and Cambodia. This reply was considered unsatisfactory, and M. Pavie left Bangkok with the three gunboats on July 26. The French Government notified the powers of its intention to blockade the coast of Siam without prejudice to other measures that might be taken to secure the rights of France. The British Government asked if there was a state of war, and announced that if a pacific blockade was intended British merchant vessels would not be required to observe it. The French minister explained that a pacific blockade was meant, and acknowledged, after some discussion, that the trade of neutral powers could not legally be interfered with. The blockade was notified by the French authorities on July 27 as beginning on the following day, three days being given to vessels to load and leave Bangkok. On

July 29 the Siamese minister in Paris, Prince Vadhana, informed M. Develle that Siam accepted all the terms of the ultimatum without reserve. This gave entire satisfaction to France.

As soon as France formulated her territorial demands the British Government intervened to claim a direct British interest in the districts on the Mekong north of Luang Prabang. The Burmese frontier touched the Mekong in its upper course. The Shan State of Kiang-Hung was considered a part of the former Burmese Empire, but it was claimed by China; the Indian Government had permitted the Chinese to occupy it, and would probably recognize their claim in order that the expense and danger and difficulty of preserving a conterminous frontier between the Indian Empire and the French possessions in Tonquin. With the same object in view, the Indian authorities had ceded to Siam the southern Shan State of Kiang-Chang, which lies on both sides of the Mekong, on the condition that it should never be alienated. The French Cabinet agreed to the British proposal, that buffer states should be preserved or created, and left it to be decided by future negotiation as to what territories should be marked off and treated as a neutral zone, inviolable by both powers. The principle of a buffer territory had been already recognized in 1889, in an interchange of views regarding Indo-China.

In answer to the acceptance of the conditions offered, M. Develle, in a note dated July 31, demanded certain supplementary guarantees. Instead of undertaking to farm the revenues of the provinces of Angkor and Battambang, France would content herself with occupying the port and river of Chantabun until the complete evacuation of the left bank of the Mekong, but she demanded, for the purpose of continuing the good relations re-established with Siam and preventing a conflict in the neighborhood of Lake Tonlesap, that Siam should undertake to maintain no military forces in Battambang and Siemriep, nor within 25 kilometres of the Mekong river, and should also abstain from keeping armed vessels on the lake or on the Mekong. The French Government furthermore reserved the right of establishing consulates at Korat and Mungnan. On Aug. 1 Prince Vadhana accepted for his Government the new ultimatum.

Orders were immediately sent to raise the blockade, which had already disturbed the rice trade with Singapore and Hong-Kong. The blockade came to an end on Aug. 5, as soon as the preliminary treaty was signed at Bangkok, whither M. Pavie had returned. Le Myre de Vilers had already departed from France as a special envoy to arrange the details of the final settlement.

The treaty finally arranged by M. Le Myre de Vilers, in October, embodied the conditions of the ultimatum and supplementary demands and certain explanatory or additional stipulations. The French Government obtained the right to establish consulates not only in Korat and Mungnan, but wherever it may think proper. The Siamese Government is bound to open negotiations within six months for the revision of the commercial treaty of 1856, and for the special regulation of the customs and commercial system in the zone of 25 kilometres on the right



bank of the Mekong and the provinces of Battambang and Siemriep, where no regular or irregular armed force may be maintained and all existing fortifications must be razed. Meanwhile no customs duties will be established in this zone, to the products of which the French Government grants reciprocity. In these districts French subjects or political dependents have the right to travel about freely and do business on receiving passes from the French authorities. The French Government has the right to build docks and establish coal and wood depots wherever necessary on the right bank of the Mekong. In the appended convention it was stipulated that all French subjects, either Annamites, Cambodians, or Laotians, who were detained for any cause should be delivered up; that the Siamese posts on the left bank of the Mekong and the islands must be evacuated within a month; that a French representative should witness the execution of the sentence against the murderers of Groscurin and his men and the captors of Capt. Thoreux, and that if the penalties were deemed insufficient, the French Government might demand a fresh trial before a mixed tribunal; and that the French Government would continue to occupy Chantabun until the stipulations of the convention were executed.

**SOUTH CAROLINA**, a Southern State, one of the original thirteen, ratified the Constitution May 23, 1788; area, 3,750 square miles. The population, according to each decennial census, was 249,073 in 1790; 345,591 in 1800; 415,115 in 1810; 502,741 in 1820; 581,185 in 1830; 594,398 in 1840; 668,507 in 1850; 703,708 in 1860; 705,606 in 1870; 995,577 in 1880; and 1,151,149 in 1890. Capital, Columbia.

**Government.**—The following were the State officers during the year: Governor, Benjamin R. Tillman, Democrat; Lieutenant-Governor, Eugene B. Gary; Secretary of State, J. E. Tindal; Treasurer, W. T. C. Bates; Attorney-General, D. A. Townsend, succeeded by O. W. Buchanan; Comptroller, W. H. Ellerbe; Superintendent of Education, W. D. Mayfield; Adjutant-General, Hugh L. Farley; Railroad Commissioners, Jefferson A. Sligh, D. P. Duncan, H. R. Thomas; Chief Justice of the Supreme Court, Henry Melver; Associate Justices, Samuel McGowan, Y. J. Pope. Eugene B. Gary, the Lieutenant-Governor, was elected in December by the State Legislature to succeed Justice McGowan.

**Finances.**—Following is a summary of the accounts of the State treasury for the year ending Oct. 31, 1893: Total cash assets, \$227,728.55; net cash liabilities, \$494,906.42; total net liabilities, \$6,864,074.98; balance cash Oct. 31, 1892, \$201,748.90; total cash receipts during the year, \$4,208,456.36; total expenditures during the year, \$4,182,476.71; balance on hand Oct. 31, 1893, \$227,728.55. Among the receipts the State dispensary sales are credited at \$100,332.13, and among the expenditures the State dispensary is set down at \$134,493.87. The amount received for general taxes 1891-'92 and back taxes was \$735,411.03, and the phosphate royalty was \$233,544.33. The educational, charitable, penal, and sanitary institutions cost \$223,835.61; the militia, \$10,000; the public printing, \$23,932.45; elections, \$18,167.66.

The new 4½-per-cent. Brown consols were sold

in block to a syndicate. All the old bonds have been redeemed.

**Railroads.**—The total number of miles of railroad in the State is 2,552.45, and of this, roads aggregating 1,132.81 are in the hands of receivers.

**Railroad Tax Cases.**—The Governor issued a circular, Jan. 28, to the sheriffs throughout the State, directing them to seize enough personal property of the railroads to satisfy the claims of the State for taxes. These had been declared by the courts, in 1892, to be illegal. The sheriffs accordingly levied upon the rolling stock of such railroads, and chained cars to the track. After hearing the petition of the Richmond and Danville road concerning this "arrest of trains," Judge Simonton, of the United States Court, issued an order releasing all trains that have been tied up and restraining sheriffs from further interference with the property. This was ordered served upon the sheriffs, Feb. 8, by United States marshals.

In view of this order the Governor telegraphed to the sheriffs:

Where the amount of taxes in execution for 1891 and 1892 is less than \$2,000, hold the property to satisfy the execution unless it is taken from you by force. Then submit to arrest, and we will take the case to the United States Supreme Court on *habeas corpus* proceedings and make this Federal judge obey the decrees of that court.

On Feb. 16 injunctions were granted restraining sheriffs from interfering with the property of certain roads. The sheriffs of Aiken, Anderson, Abbeville, and Newberry Counties were adjudged to be in contempt of court for refusing to surrender the property when so ordered, and were each ordered to pay a fine of \$500 and stand committed to the custody of the United States marshal until this order be complied with. The Governor advised the sheriffs not to pay the fine, but submit to imprisonment, and he would then apply to the United States Supreme Court for a writ of *habeas corpus*. The case of the sheriff of Aiken County did so come before the United States Court, and the application was denied. The opinion said:

The seizure of the property by force was unjustifiable and could not be defended. The claims of the State for taxes are not superior to the general rule which makes property placed in the hands of a receiver subject to an order of court; they are to be determined in the regular way and proper manner.

The fines, costs, and fees, amounting to \$4,000 were then paid out of the Governor's contingent fund. The testimony as to the validity of the assessment was taken by the United States circuit court, in the summer and autumn, to be argued later. In an argument on the case in his message to the Legislature in November the Governor said:

Why should the Court obtain jurisdiction in the matter of taxes, which it could not otherwise pass upon, simply by reason of the receivership? Why should a bankrupt corporation obtain immunity from the State law when a solvent one can not obtain it? Why should a Federal judge throw the protecting arm of his great power around this class of property and give receivers special privileges which no other taxpayers can claim? If it is law, it is not right, and I think I can show it is neither.

**Penitentiary.**—The management of the State Prison seems to be very satisfactory from a business point of view. The report rendered in November showed that the profits for the past year exceeded the expenses by nearly \$24,000, and that the Penitentiary owned a fine lot of cattle and hogs, and was able to hold all its cotton for the best prices, not then having sold a pound. Many improvements have been made and paid for, including improved quarters for the officers and guards and electric power for the machinery.

**Charities.**—The report of the Home for Mothers, Widows, and Daughters of Confederate Soldiers has the following items: During the year there have been in the home 89 persons, of whom 63 were pupils of the school, receiving their board and tuition, 3 were officers of the domestic department, and 23 were permanent inmates.

The expenses of the year were \$6,190.68.

**Education.**—The Girls' State College, called the South Carolina Industrial and Winthrop Normal College, has been located at Rock Hill. The act establishing it provided that it should be built in the place making the best offer and affording the best advantages. Rock Hill is in the upper part of the State, near the foothills of the Blue Ridge mountains, has fine water and a healthful climate, and on account of its railroad connections is easy of access.

The building as planned will front 200 feet and extend back about 90 feet, with a large chapel in the rear. It will be 3 stories high above the basement, and will contain 40 rooms exclusively for school and industrial work, none of them for dormitories. In addition to ample provision for academic, normal, and industrial work, a good gymnasium and large society halls have been arranged for.

The Legislature gave \$50,000 for building a dormitory to accommodate 400 or 500 students.

The normal department of the institution has been conducted at Columbia in the past year as usual, having closed its seventh session in June. The expenditures amounted to \$4,281.98. In the seven years of its existence the college has sent out 157 trained teachers.

Clemson Agricultural College was opened on July 6. The sum of \$234,704 has been expended on the site, buildings, and equipment. The college will have about \$86,000 a year, and 301 students registered the first week. The maximum attendance during the year was 445.

The South Carolina College, at Columbia, seems to be still in a declining condition. The Governor recommended in his message that its doors be opened for girls, and that provision be made for normal training. The Committee of Ways and Means incorporated in the appropriation of \$25,000 to the college the provision that young women be allowed to enter, not lower than the junior class, at the next session.

**A Great Storm.**—The terrible storm and flood that devastated the southern coast Aug. 27 was most severe in South Carolina. The winds, coming from the east and southeast for hours together, drove in a great volume of water from the sea and heaped it up along the coast. At Charleston, according to the observations made by the local weather observer, the height of the resultant wave, as measured in protected areas, was about 5½ feet above mean high-water mark, which

was enough to flood all the lower levels of the city to nearly that depth. Near Beaufort the force of the wind was much stronger, the volume of incoming water was correspondingly greater, and the topography of the coast at that point enhanced the rise of the flood. St. Helena and Port Royal Sounds presented two large V-shaped openings to the east and southeast, into which the sea was swept without meeting any obstruction, and being concentrated in the narrower channels inland, rose to a still greater height in them and along their shores. The water in the river at Beaufort, well inland, rose 8 feet above spring tide, and waves 20 feet high rolled into the town. The low-lying islands and mainland about Beaufort were covered by a flood from the sea, the dead level of which was 10 feet above mean high-water mark.

Port Royal, Beaufort, and Charleston suffered severely, but the most complete devastation was on the Sea Islands. It was estimated that 1,000 lives were lost. The great majority of the dead were negro inhabitants of the islands. The growing crops were ruined by the salt-water flood, and the phosphate industry, the only other resource of the people of the islands, was paralyzed. The population of the islands is about 45,000. In Charleston the wharves were ruined, the battery was devastated, one church was almost wholly destroyed, and all the 70 churches were damaged. The loss of life there was comparatively small, not more than 6 deaths being reported. The whole loss in the region was estimated at not less than \$2,000,000. The Governor issued a proclamation asking help for the greatest sufferers, and assistance was promptly sent from other parts of the State and from other States.

For the relief of the sufferers the State Legislature made no appropriation, but it did extend the time allowed for the payment of taxes, and authorized Beaufort County to sell bonds. The Red Cross Association took in hand the region of Beaufort and the islands, where at least 30,000 people were to be provided for.

**The State Dispensary.**—The new law on liquor-selling went into effect July 1. Trouble in its enforcement began immediately and continued through the year. The first week in July an injunction was sought by citizens of Darlington to prevent the establishment of a dispensary, on two grounds. The first had to do with the petition and bond of the dispenser, which were alleged to be insufficient. The second was that the law itself was unconstitutional. Judge Hudson, of the Court of Common Pleas, before whom the action was brought, granted the injunction on both grounds. He took the ground that the law embraces two distinct acts of legislation: One prohibiting the sale of intoxicants by private individuals, which is within the scope of legislative authority, and therefore constitutional and valid; the other providing for a State monopoly of the liquor traffic, which is beyond the scope of legislative authority, and therefore unconstitutional and void. He said:

The police power can regulate the weight of bread, can insist on the inspection of meat and milk, can require the storage of powder, kerosene oil, or other explosive and inflammable materials within certain limits and in certain safe receptacles; and just so it can regulate the sale of intoxicating liquors, but it can



no more take possession of the trade in one of those articles of commerce than it can of the trade in any or all the others.

On an appeal to the Supreme Court the authorities obtained from Justice Pope a writ ordering a stay of the injunction, and permitting the dispensary to go on with business. Judge Wallace gave an opinion in favor of the law, since there is nothing in either the State or the national Constitutions expressly forbidding it.

The trouble continued through the year. As was expected, serious obstacles arose in the way of enforcing the law. In cases of supposed violations and consequent search, complaints were made that the law of personal liberty was disregarded, and private apartments were invaded. Still another decision was given by Judge Hudson in an action to enjoin a man from keeping and maintaining a place for the illegal sale of intoxicating liquors in Darlington, and to procure an order to search his premises, and to abate the nuisance alleged to have been created by him. Judge Hudson refused the order of injunction applied for, on the ground that the existence of the nuisance is doubtful and must first be established by the verdict of a jury; and refused the search warrant because it was a criminal process and wholly foreign to equity jurisdiction.

Similar actions arose in different parts of the State, growing out of efforts on the one hand to resist the opening of the State dispensaries, and on the other to detect and punish violations of the law by illegal sellers. Most important, however, were the cases against the railroads for receiving and delivering liquors in violation of the dispensary law. The decision in one of these cases, by Judge Simonton, was as follows:

Section 25 of the Dispensary act makes it a misdemeanor for the railroad employee to deliver any liquors from his train, and this without requiring any knowledge on his part that the package contains intoxicating liquors or that it is intended for sale. In every other instance mentioned in this section, including private carriers and railroad and express companies, knowledge that the intoxicating liquor is intended for sale is expressly required. This is a discrimination against one class of people—railroad employees—and is in conflict with the Constitution of this State, and so not within its police powers, and therefore not within the provisions of the act of Congress known as the "Wilson act." This being the case, the clause of section 25 of the Dispensary act, under which the petitioner was charged and arrested, is void under the Interstate Commerce law and the fourteenth amendment.

One of these cases involving the railroads came up in August, and continued in one phase or another into 1894. It was that of a dispensary agent, C. B. Swan, who seized a barrel of whisky at the freight depot of the South Carolina Railway in Charleston and took it to the sheriff's office. This railroad, being one of those in the hands of the United States courts, obtained an order against the agent in the United States circuit court, calling upon him to show cause why he should not be punished for contempt, and also be restrained from further intermeddling with the railroad, and from disposing of the property which he seized, and be compelled to return it whence he took it. He was acting under orders from the Governor. It was decided that he had no right to seize the property without judicial pro-

cess, and the order was given that he should remain in custody till he returned the property, and then three months longer as a punishment.

The State authorities obtained from the United States Supreme Court an order to the United States marshal to show cause why Swan should not be released on *habeas corpus* proceedings, and the case was heard in Washington in November. The decision, Dec. 18, was adverse to the State, and the agent was accordingly obliged to go to jail. Many other cases came up under the law. In some cases violent resistance was made to the constables' attempts at arrest and seizure; and in Spartansburg, in December, an attempt to arrest an alleged liquor seller led to an affray in which he was killed, and the officer dangerously wounded.

There was some doubt whether rice beer came within the meaning of the law, which allows the free sale of any beverage having less than 2½ per cent. of alcohol, and the new bill passed by the Legislature of 1893 places it among the forbidden liquors.

The report of the State Commissioner, D. H. Traxler, rendered Nov. 27, gives the following summary of the business: Total expenses to Nov. 1, \$72,566.38; cost of merchandise, \$70,251.22. Appropriation, \$50,000; cash on account, \$100,332.13; leaving a balance of \$7,514.55. Total assets Nov. 1, \$143,225.69; liabilities—appropriation, \$50,000; bills payable, \$61,027.53; profits, \$32,198.16. It is explained that the difference between this account and the State Treasurer's was occasioned by warrants drawn by the Commissioner after Nov. 1 to cover October business.

**Legislative Session.**—The Legislature convened Nov. 28, and adjourned Dec. 23. There were 4 Republicans in the House, none in the Senate, and 120 Democrats in the House and 36 in the Senate. One associate justice of the Supreme Court and 5 circuit judges were elected.

Among the most important acts was the redistricting of the State. The object of the measure is described as follows by the Charleston "News and Courier," which is in opposition to the Governor and the prevailing Reform-Democrat party:

The scheme is designed to put all these people [the greater part of Beaufort, Berkeley, Charleston, Georgetown, Williamsburg, and Colleton] into a district with an overwhelming negro majority. They will be cut off by it from the rest of the State by lines of division which will compel them to accept a Republican and a negro as their representative in Congress. Their highest interests will be in his hands. The white people, the Democrats of the district, will have to look to him to speak for them in Congress on all questions touching their welfare.

An act was passed reconstructing the system of county government. The Governor is to appoint, upon the recommendation of the Senator and representatives from the county, 3 township road commissioners for each township—their terms of office to be coterminal with that of the Governor appointing them. The township boards of assessors and boards of equalization are abolished, and their duties devolve upon the county board of commissioners. Convicts sentenced to hard labor for not more than two years are to be put to labor on the roads in chain gangs.

The charter of the Port Royal and Augusta Railroad was repealed. Its affairs were taken into court in the winter of 1892-'93. The State authorities complained that the Central Road had been holding the Port Royal and Augusta for the purpose of keeping it from competing with Savannah and the Central system for business, and Gov. Tillman advised that, unless the road could be wrested from the control of the Central, its charter should be revoked.

A new dispensary law was made. It raises the salary of the State commissioner from \$1,800 to \$3,000. Any county, town, or city wherein the sale of alcoholic liquors was prohibited by law prior to July 1, 1893, may secure the establishment of a dispensary within its borders, on these conditions: A petition signed by one fourth its qualified electors will entitle it to an election, and if a majority vote at that election in favor of a dispensary, one shall be established. All profits, after paying all expenses of the county dispensary, shall be paid—one half to the county treasury and one half to the municipal corporation in which it may be located.

Clubs and like associations are debarred from keeping liquors for use, barter, sale, distribution, or division among their members; though the State Board of Control may exempt hotels where tourists or health seekers resort upon a bond in the sum of \$3,000 being given by the manager to observe the dispensary regulations. The provisions for disposing of the liquor are in the main like those of the law of 1892, but the regulations for enforcing the law are more stringent.

A new county was formed from parts of Edgefield and Abbeville, and named Greenwood. Acts were passed providing for a public printer, and establishing separate school districts for cities and towns. The law for the appointment of county boards of physicians to examine the diplomas of physicians and surgeons was repealed, and a State examining board with similar duties was established.

For the relief of the owners of phosphate plants destroyed by the cyclone of Aug. 27, in order to enable them to rebuild their plants and resume operations, the royalty on phosphate rock was reduced for a period of five years from \$1 a ton to 50 cents when the market price is \$4. When the price exceeds that figure, an additional percentage will be collected.

It was recently decided in the circuit court that South Carolina laws did not recognize the validity of a divorce obtained in another State, and that a divorced person who married again was a bigamist by the law of this State. A bill to remedy this was passed at this session.

It was resolved:

That it is the sense of this General Assembly that the United States Congress, now in session, ought to take decisive action at once, providing for the coinage of silver, as well as gold, as a standard money metal, and that the Representatives in Congress and Senators from this State be requested to use their best endeavors to restore the currency of the country to a bi-metallie standard.

**SOUTH DAKOTA**, a Western State, admitted to the Union Nov. 3, 1889; area, 77,650 square miles; population, according to the census of 1890, 328,808. Capital, Pierre.

**Government.**—The following were the State officers during the year: Governor, Charles H. Sheldon, Republican; Lieutenant-Governor, C. W. Herried; Secretary of State, Thomas Thorson; Treasurer, W. W. Taylor; Auditor, J. E. Hipple; Attorney-General, Coe I. Crawford; Superintendent of Public Instruction, Cortez Salmon; Commissioner of School and Public Lands, Thomas H. Ruth; Commissioner of Labor and Statistics, Walter McKay; Railroad Commissioners, E. F. Conklin, H. C. Warner, J. R. Brennan; Chief Justice of the Supreme Court, John E. Bennett, who died on Dec. 31; Associates, Alphonso G. Kellam, Dighton Corson.

**Valuations.**—The assessed valuation of property for 1893, as equalized by the State Board of Equalization, aggregated \$137,035,974, as against \$127,377,990 in 1892. The number of acres of land assessed was 15,849,036, an increase of 719,926 acres in one year. The total valuation placed upon railroad, telegraph, telephone, express and sleeping-car property was \$9,168,497. Included in the assessment were 295,042 horses, 554,193 cattle, 327,148 sheep, and 213,957 swine. The State tax levy for the year, as fixed by the board, was 2 mills for the general fund, 2 mills for the deficiency fund,  $\frac{1}{10}$  mill for the bond interest and sinking fund, and  $\frac{1}{10}$  mill for the special sinking fund—a total of  $4\frac{2}{10}$  mills.

**Legislative Session.**—The regular biennial session of the Legislature began on Jan. 3 and ended on March 4. For the purpose of encouraging the construction of storage reservoirs for irrigating agricultural lands, an act was passed authorizing persons or companies to take and store away any unappropriated water from the natural streams of the State that is not needed for immediate use, and to construct ditches for carrying such water to and from such reservoirs. The owners of any reservoir, may also conduct water therefrom into and along any natural stream, and may take them out again at any point desired, without regard to the prior rights of others to water from such streams.

Another act provides that in civil actions cognizable by a justice of the peace, which are tried in the circuit or county court, three fourths of a jury may render a verdict. The introduction into the State of any armed police or detective force, or any armed body of men other than United States troops, for the purpose of suppressing violence was prohibited except upon application of the Legislature when in session, or of the Governor at other times.

The time in which property sold under a mortgage may be redeemed was extended to two years, provided that taxes and interest are paid at end of the first year by the mortgagor.

Telegraph, telephone, express and sleeping-car companies doing business in the State who fail to pay any State tax for thirty days after it becomes due are subjected to a penalty of 12 per cent. per annum upon such tax. The managers of the State Penitentiary were authorized to employ prisoners in the manufacture of binding twine, and \$8,000 was appropriated for purchase of machinery, stock, etc., to be used in this business. The mistake of the Legislature of 1891 in failing to provide for a State exhibit at the World's Columbian Exposition was corrected at this session, an appropriation of \$60,-



000 being made for this purpose. Authority was given for the levy of an annual State tax sufficient to pay interest on the \$100,000 of State bonds issued in 1890, and to create a sinking fund for their retirement in 1900. Provision was made for refunding \$62,000 5- and 6-per-cent. State bonds becoming due in 1893 into the same amount of 3½-per-cent. bonds. The bonds to be retired were originally issued in aid of the Agricultural College, the Territorial University, and the Deaf-Mute School. An additional hospital for the insane was located at Redfield, in Spink County, but no money was appropriated for the construction of buildings.

Three amendments to the State Constitution were proposed for submission to the people at the next general election. The first makes county superintendents of schools eligible for more than four years, the second allows women to vote for any school officer at any election at which such officer is to be elected, and the third amends section 4 of Article VI so as to read as follows: "The Legislature shall by general law limit and define the value and size of a homestead of each head of a family which shall be exempt from attachment or mesne process, and from levy and sale on execution, and from any other final process issued from any court, except upon the foreclosure of a mortgage or vendor's lien or liens for labor done or things furnished in the construction or repair of any building, erection, or other improvement thereon, and shall also provide for such exemption of a reasonable amount of personal property."

Other acts of the session were as follow :

Providing for inspection of private banks by the public examiner.

Authorizing county commissioners to offer a bounty for the destruction of pocket gophers.

Providing for the formation of co-operative building and loan associations, and regulating their business.

Abolishing dower and courtesy.

Amending the Australian ballot law.

Providing for a recount of ballots where a tie vote appears on the first count.

To prevent destruction of buffalo, elk, deer, antelope, and mountain sheep.

To prohibit the killing or capture of quail for five years.

To prevent oppressive garnishment and the transferring of claims for the purpose of depriving debtors of their exemption rights.

To provide for surveys of the geology, natural history, and physical features of the State.

To prohibit the dockage of grain.

Providing for a uniform insurance policy.

Providing for the organization of township mutual insurance companies.

To provide for the sinking of artesian wells, and for the levying of a tax to pay the expenses thereof.

Establishing a State board of pharmacy, and regulating the practice of pharmacy in the State.

Establishing a State board of medical examiners, and regulating the practice of medicine in the State.

Dividing the State into 3 districts, and providing for the election of a railroad commissioner in each district.

To provide for the construction of systems of sewerage in cities.

Providing for the employment of a State agent to prosecute claims of the State against the United States.

To regulate the shipment of cattle.

Amending the antitrust law.

Establishing a uniform system of weights and measures.

**Education.**—The number of children of school age in the State, as determined this year, was 96,774, an increase of nearly 6,000 over the figures for 1892. There was distributed to the counties from the State school fund income, for public-school purposes, a sum equal to \$1 for each census child.

On Oct. 15 the State suffered a loss of about \$100,000 by the burning of the main building at the State University at Vermillion. There was no insurance, and no money in the State treasury was available for rebuilding. The work of the institution was not interrupted, but will be conducted under great disadvantages for some time, as the next Legislature, which alone can authorize rebuilding, will not meet till 1895.

**Indian Reservation.**—On Dec. 31, 1892, an agreement was signed by the Yankton Sioux tribe of Indians and commissioners appointed under act of Congress by which the Indians agreed to cede to the United States a considerable portion of their reservation, comprising 430,405 acres of land between the Choteau and Missouri rivers. Of this tract, 167,325 acres have been already allotted and patented to the Indians under the act of 1887. The allotments made but not approved under the act of 1891 include about 95,000 acres more, so that the residue actually ceded includes about 168,000 acres. The Indians are to receive about \$3.60 per acre for this tract. A bill to ratify the agreement was pending in Congress at the close of the year.

**Political.**—The only State officers to be chosen at the November election this year were 3 justices of the Supreme Court. At a convention held at Huron the Independent party nominated the first ticket in the field, its candidates being J. B. Fairbank, C. B. Kennedy, and H. H. Porter. On Sept. 7 the Democrats, in State convention at Scotland, nominated Chauncey L. Woods, W. H. Stoddard, and Henry C. Hinckley; and on Sept. 20 the Republicans, at Huron, renominated Justices Bennett, Corson, and Kellam. Platforms, referring chiefly to national questions, were adopted at these conventions. At the election in November the Republican ticket was successful. The vote was as follows: Corson, 21,048; Kellam, 20,702; Bennett, 20,903; Fairbank, 12,603; Kennedy, 12,608; Porter, 12,903; Woods, 7,683; Stoddard, 6,701; Hinckley, 7,188.

**SPAIN,** a constitutional monarchy in southeastern Europe. The Cortes is composed of a Senate and a Congress or Chamber of Deputies. The Senate consists of 57 members in their own right, including royal princes, grandees, and high functionaries, 123 life members appointed by the King, and 180 members elected by corporations and heavy taxpayers for ten years, one half of them being renewed every five years. The Congress has 430 members, 1 to every 50,000 people, elected for five years by electoral colleges. The crown is hereditary in the male and female lines of the house of Bourbon-Anjou. The king is Alfonso XIII, an infant, born May 17, 1886, whose mother, Maria Christina, an Austrian archduchess, was constituted Queen Regent during his minority.

The Council of Ministers, appointed in December, 1892, was composed as follows: President, P. M. Sagasta; Minister of State, Marquis de la Vega de Armijo; Minister of Justice, Montero Rios; Minister of War, Gen. J. Lopez Dominguez; Minister of Marine, Admiral Cervera; Minister of Hacienda, or Finance, G. Gamazo; Minister of Government, or the Interior, Venancio Gonzalez; Minister of Fomento, or Public Works, Commerce, and Agriculture, Moret Prendergast; Minister of the Colonies, Maura.

**Finances.**—The revenue for the fiscal year 1893-'94, is estimated at 737,476,353 pesetas, or francs, of which 290,423,473 pesetas are derived from direct taxes, 281,768,000 pesetas from indirect taxes, 129,940,000 pesetas from stamps and *régie* enterprises, and 22,874,880 pesetas from public property, and 12,470,000 pesetas were in the treasury. The estimated expenditure is 736,561,837 pesetas, of which the chief items are 309,219,669 pesetas for the debt, 133,372,215 pesetas for the army, 76,645,346 pesetas for public works and education, 54,650,000 pesetas for indemnities and pensions, 53,254,299 pesetas for justice, 26,544,829 pesetas for the interior, and 22,503,410 pesetas for the navy.

The capital of the public debt, which pays 4 per cent., was 5,962,043,090 pesetas on Jan. 1, 1893; interest for the year, 271,150,858 pesetas.

**Commerce.**—The imports for 1891 were valued at 1,018,771,000 pesetas; exports, 932,245,000 pesetas. The values of the principal imports were: Cotton, 85,022,000 pesetas; coal, 50,305,000 pesetas; timber, 42,990,000 pesetas; machinery, 38,802,000 pesetas; grain, 31,020,000 pesetas; tobacco, 30,271,000 pesetas; sugar, 30,230,000 pesetas; codfish, 28,580,000 pesetas; iron, 27,580,000 pesetas; woolens, 26,286,000 pesetas; spirits, 21,162,000 pesetas. The principal exports and their values were: Wine, 310,244,000 pesetas; lead, 61,930,000 pesetas; copper, 47,401,000 pesetas; iron, 43,439,000 pesetas; cork, 26,847,000 pesetas; shoes, 21,028,000 pesetas; animals, 14,924,000 pesetas; raisins, 14,459,000 pesetas; flour, 12,867,000 pesetas; quicksilver, 10,561,000 pesetas; grapes, 10,539,000 pesetas; almonds, 10,494,000 pesetas; oranges, 10,417,000 pesetas; olive oil, 10,227,000 pesetas.

**Navigation.**—The number of vessels entered in 1892 was 17,367, aggregating 11,585,712 tons, and the number cleared was 17,116, aggregating 11,579,217 tons. The mercantile navy on Jan. 1, 1893, consisted of 1,233 sailing vessels, of 196,650 tons, and 474 steamers, of 455,489 tons.

**Communications.**—The railroads in operation in 1893 had a total length of 6,710 miles. The post-office in 1891 carried 103,375,000 domestic and 15,184,000 foreign letters, 842,000 postals, and 74,670,000 newspapers, etc., besides 185,000 registered letters, containing 377,413,000 pesetas. The telegraphs, having a total length of 25,746 kilometres, with 56,512 kilometres of wires, transmitted 3,421,255 paid internal and 1,147,442 international dispatches.

**The Army and Navy.**—The law of Dec. 16, 1891, increased the annual recruit of the army from 49,000 to 80,000 men. The war effective is estimated at 203,000 foot and 21,000 horse. The peace strength of the permanent army in 1893 was 115,735 men of all arms.

The war fleet in 1893 was composed of 1

armor-clad turret ship of 9,902 tons, 3 armored cruisers, 3 deck-protected cruisers of the first class and 3 of the third class, 2 frigates, 13 unprotected cruisers, 47 gunboats of various sizes, 7 torpedo gunboats, 12 sloop gunboats, 1 torpedo catcher, 12 first-class and 3 third-class torpedo boats, 1 submarine torpedo boat, and 1 monitor. There were 2 turret ships lacking their armament, and in various stages of construction there were 2 armored frigates, 3 armored cruisers, 1 torpedo dispatch vessel, 2 torpedo gunboats, and 4 first-class and 20 second-class torpedo boats.

**The Sagasta Ministry.**—The Conservative ministry of Canovas del Castillo was defeated through a revulsion of virtuous indignation in its own party because it shielded some of its corrupt followers from punishment and because it showed no determination to correct the abuses that perpetuated the deficit in the budget. The Liberal leader formed a Cabinet of the most distinguished men of his party, taken from all sections, who were pledged to reform the budget under the guidance of a financial moralist who had pointed out the source and nature of the fiscal disorder. A dissolution was necessary to give the Liberals a majority. The Chamber consisted of 286 Conservatives, 96 Liberals, 9 Republicans of the Castelar group, 17 Advanced Republicans, 4 Carlists, 4 Ultramontanes, and several Cuban Autonomists. The general election took place on March 5, 1893, after all the officials had been changed and the usual measures taken to secure an overwhelming ministerial majority. The Conservatives and Moderate Republicans were allowed to elect respectable minorities, while the Government employed all the old devices to thwart the Extreme Republicans, only to find that under universal suffrage the vote of the industrial centers could no longer be constrained. The Liberals elected 322 members, the Conservatives 48 adherents of Canovas and 15 who follow Silvela, the Republicans 16 Moderates and 23 Extremists, and the Carlists 6 representatives. In Madrid 6 Republicans and 2 Ministerialists were elected. In the senatorial elections a few days later 7 Moderate Republicans were chosen by the universities and academies.

The Cortes were opened on April 5. The speech from the throne promised economies and increased revenue that would abolish the deficit of 70,000,000 pesetas. The Marquis de Armijo retired from the Cabinet to accept the presidency of the Chamber. Admiral Cervera had resigned a fortnight before because he would not consent to the reduction of the naval budget, and Admiral Pasquin was induced, on March 23, to accept the portfolio. Señor Gamazo encountered obstacles in every direction in attempting to carry out his programme of financial reform. The rigorous assessment and collection of the taxes which influential rich men have always evaded—the taxes on land, trade, mines, incomes, etc.—was a work requiring time and one which bristled with difficulties from the start. Retrenchment in every department was a plainer course, of which every one saw the necessity until it affected his pocket. The Queen Regent was willing to sacrifice 1,000,000 pesetas of the civil list, but the host of supernumerary officeholders and the 22,000 officers on the pay rolls of an army of 90,000 rank and file



fought to retain their salaries, and generally had influence enough with the party managers to prevail, although some of his colleagues loyally endeavored to carry out Gamazo's plans and insisted on resigning when they failed. The Minister of War, interdicted from cutting down the number of captain-generalships and compelled to allow extra pay to the few officers who were retired, could only economize by reducing the strength of the standing army. The Minister of Justice proposed to consolidate the district criminal courts, whereupon the lawyers struck and refused to plead. In his budget, presented on May 10, Señor Gamazo announced economies in all departments of 32,000,000 pesetas, besides 1,000,000 pesetas remitted by the Queen, and an increase in the revenue of 26,000,000 pesetas. He asked for authority to negotiate for a new internal loan of 700,000,000 pesetas at 4 per cent. for the purpose of paying the debt to the Bank of Spain and other liabilities. The Government dreaded the consequences of a Republican victory in the communal elections in May. To avert it, a bill was brought in postponing the elections till November. The pretext for this measure was that the Republicans had gained elections in the large cities by fraudulent registration and false returns, a statement designed to rebut the bitter complaints made by the Conservatives against the Liberals for permitting the Republicans to reappear in the arena of practical politics. The Republicans, incensed at the calumny and determined to frustrate, if possible, the plans of the Government to extinguish their constitutional movement, obstructed the bill, keeping the house sitting for fifty-four consecutive hours, until the legal date for the elections had come. The ministry postponed the elections arbitrarily by a royal decree, and, taking advantage of the momentary retirement of the Republicans to consult after the rejection of their substitute bill, called a vote against the protests of the Republican members who were left on guard, and passed the bill instantly by the almost unanimous vote of the members present, for none except the Carlists sustained the Republicans in their fight. The introduction of the bill was delayed until within two days of the communal election day because the House was not organized before, the ministers having consumed a month's time in futile efforts to produce legal grounds for unseating the Republican Deputies. For years Sagasta and his fellow Liberals had invited and urged the Federalist, Progressist, and Centralist Republicans to take part in the pacific and legal political contests and challenged them to show their electoral and legislative strength. They had formed a Republican coalition in the last campaign, had put forward their best men, an illustrious galaxy, outshining by their reputation for patriotism, rectitude, eloquence, and learning the chief representatives of both the great parties, and had organized their party so quietly that the Liberals and Conservatives were dumbfounded at their electoral success. Sagasta now showed that he was determined to stifle the Republican vote, and for this reason the Republican members, as soon as they returned from the lobby, announced that they would resign their seats, and left the hall in a body. Although it was late at night, the news spread through the city and 10,-

000 people gathered to cheer them until the crowd was dispersed by the police with drawn sabers. Castelar, who since the establishment of universal suffrage, trial by jury, and freedom of the press, has been a Liberal in everything excepting acceptance of the dynasty, announced his retirement from public life, while his lieutenants, Abarzuzu and Almagro, with the Possibilist journals and committees, proclaimed their fidelity to Castelar's ideas of a peaceful Republican evolution.

Montero Rios, despairing of financial reform in his department and meeting with opposition to his plans in the Chamber, resigned on May 24, and on July 6 was succeeded by Ruiz Capdepon. Moret Prendergast, who took charge of Foreign Affairs temporarily, was confirmed in that post, though still retaining the portfolio of Public Works. On Oct. 15 Lopez Puigcerver was appointed Minister of the Interior in the place of Venancio Gonzalez, who retired on account of ill health. The prospect of saving in the army expenses was rendered remote by the operations in Morocco, but he succeeded in obtaining the consent of the Cortes to the main features of his reform of the antiquated territorial organization of the army. Instead of the numerous captaincies-general there will be 8 *corps d'armée* in Spain and detached divisions in the Canaries, the Balearic Islands, and Morocco. Of Gamazo's projects, including a readjustment of the alcohol and other duties, the abolition of the Court of Accounts and sinecures in various departments, the funding of the floating debt and of State pensions, and many other changes, some were abandoned and some were modified to accommodate the Conservatives or objecting members of his own party. The budget thus modified was approved in the beginning of August, and the Cortes were then adjourned.

A part of the Government programme affected the ancient privileges of the Basque provinces, and Republicans and Carlists joined in urging the Basques to defend their prescriptive rights. In San Sebastian, where the Queen was staying, the populace mobbed the band for refusing to play the Basque national hymn, "Guernicaco Arbola," and stoned the hotel in which Premier Sagasta was lodging and the troops that were called out to quell the riot. Additional troops were sent into the district to repress the incipient rebellion which threatened to develop into a civil war like that waged against the Government of Queen Christina by the Basque Carlists for the same cause. Sagasta, in his first ministry, had annulled the political *fueros* or special privileges of the Basques when they were weakened by the war, and now he had decided to annul their right, after the termination of the compact of 1886, to assess and collect the national taxes in their own way and pay the general sum into the treasury through their provincial authorities, and had informed the municipalities that henceforth they would be treated on the same footing as the rest of Spain.

In other provinces also opposition to the Government reforms took the form of defiance of the law. In Valencia, Catalonia, and Navarre, people refused to pay taxes or to allow others to pay. The new duties on wine, spirits, and tobacco were especially resented by the poorer classes.

**Bomb Outrages.**—In the early part of 1893 the police were rendered watchful by bold public demonstrations of anarchists in Barcelona and other cities and the spread of incendiary literature. On March 14 several of their dens were raided in Madrid, where they were preparing bombs. A gang was captured in a farmhouse near Xeres, where they were plotting vengeance for the execution of their comrades who were executed a year before. On June 12 a large torpedo was exploded in the plaza adjoining the palace in Madrid, and on June 20 one anarchist was killed and another wounded by the explosion of a petard in the garden of the ex-Premier Canovas del Castillo, who had offended by not pardoning the Xeres conspirators who were garroted on Feb. 10, 1892. The leader, Olves, escaped, but was arrested in Lisbon on Sept. 1. On Sept. 24, while Marshal Martinez Campos was reviewing the troops at Barcelona, a notorious anarchist named Pallas Latorre threw 2 petards under his horse, wounding him and 4 generals of his staff and several others and killing a policeman. Latorre, a typesetter by trade, did not join the fleeing multitude, but flung his cap into the air, shouting that none could call anarchists cowards when one attacks an army single-handed. An extensive plot was suspected, and the suspicions of the police were strengthened by the discovery of bomb factories and depositories in various cities. Latorre was tried by court-martial and shot on Oct. 6. The explosion of a cargo of 50 tons of dynamite in the harbor of Santander, which killed over 300 persons and destroyed buildings and shipping, was caused by an accidental fire. On Nov. 7, 2 large iron bombs of the kind used by Latorre were thrown from the gallery of the Liceo Theatre in Barcelona during the performance of an opera, one of which killed or fatally injured over 30 persons. Although more than a hundred arrests were made, a large bomb, of which the fuse was extinguished in time, was placed in the plaza a week later, where the people were gathered to cheer the troops departing for Melilla, and on the same day one was exploded at the gate of the barracks in the neighboring town of Villanueva.

The Spanish Government made overtures for an international treaty dealing with dynamiters, which were favorably received in Paris, but not in London. Among the arrested persons were prominent citizens of Valladolid and traders and members of the secret police of Barcelona. A society that planned and directed outrages in this part of Spain was found to exist at Mesina de Rio Seco, a little town near Valladolid. All the suspected anarchists were tried by court-martial, and hundreds were transported to the penal settlements.

**Colonies.**—Besides Cuba and Puerto Rico, Spain possesses the Philippine Islands, together with the Sulu, Caroline, and Marianne groups, having an aggregate area of 116,256 square miles and a population of 7,030,000, including 1,350,000 independent savages, and in Africa the island of Fernando Po and the dependencies of Annoboni, Corisco, Elobey, etc., having an aggregate area of 850 square miles and 30,000 inhabitants, besides the protectorate of Rio di Oro and Adrar, embracing about 243,000 square miles, with 100,000 inhabitants. Manilla, the capital

of the Philippines, had 154,062 inhabitants in 1887. The budget of the Philippines in 1893-'94 makes the total receipts \$12,899,546 and the expenditures \$13,350,794. The imports for 1892 were valued at \$27,000,000; exports, \$33,479,000. The principal exports were Manilla hemp for \$14,624,000; sugar, \$12,983,000; tobacco, \$2,034,000; copra, \$908,000.

For the expulsion of American Protestant missionaries from the Caroline Islands the United States Government demanded of Spain either a lump sum as indemnity or the restoration of their missions and effective protection and the full right to resume their labors.

**STANFORD UNIVERSITY** (officially designated as Leland Stanford, Junior University), an institution endowed by the late Leland Stanford, in 1885, in memory of his only son, then recently deceased at the age of seventeen. On Nov. 11 of that year Mr. and Mrs. Stanford executed a deed in trust in accordance with a general act of the State of California, passed March 9, 1885, legalizing and regulating all similar trusts for the advancement of learning and of the arts and sciences. The deed conveyed to Lorenzo Sawyer and 23 other associate trustees and their successors forever the following-named real and personal property: The Gridley farm, in the county of Butte, California, containing 21,000 acres, the value of which was \$1,500,000; the Vina farm, or ranch, in the counties of Butte and Tehama, containing 55,000 acres, of the value of \$1,800,000; the Palo Alto farm, in the counties of San Mateo and Santa Clara, containing 7,000 acres, of the value of \$2,100,000. This farm is devoted mainly to improving, training, and perfecting the breed of thoroughbred and trotting horses, of which there are 800 on the ranch. The water rights, water ditches, pipes, flumes, canals, aqueducts, and reservoirs used in connection with these tracts of land were included in the deed. The value has advanced materially since the date of the trust deed. Further donations by Mr. Stanford before his death, June 20, 1893 (see page 571 of this volume), made the endowment over \$20,000,000, and it is understood that the provisions of his will are to result in a total endowment of over \$30,000,000. This would readily yield an income of \$2,000,000, equal to that of Oxford University and superior to that of Cambridge. The donation of real estate was declared by the deed to be inalienable and to be devoted forever to the purposes of the trust, the rents, issues, and profits only being subject to the sale or disposal of the trustees. The trustees are required to make an annual report to the Governor of California, with a full account of their financial operations for the preceding year and a statement of the financial affairs of the institution.

Mr. Stanford's desire was to provide in California a place and means for practical education to fit men and women for the duties of life, yet without neglect of such measure of culture as may be essential to good citizenship. The preliminary clause to the trust deed declares that Mr. Stanford and his wife were desirous of promoting the public welfare by founding and endowing a university for both sexes with colleges, schools, seminaries of learning, mathematical institutes, museums, galleries of art, and



other things necessary and appropriate to a university of high degree. In that deed the purposes and objects of the institution are set forth thus:

Its nature, that of a university, with such seminaries of learning as shall make it of the highest grade, including mechanical institutes, museums, galleries of art, laboratories, and conservatories, together with all things necessary for the study of agriculture in all its branches and for mechanical training and the studies and exercises directed to the cultivation and enlargement of the mind. Its object, to qualify students for personal success and direct usefulness in life. And its purposes, to promote the public welfare by exercising an influence in behalf of humanity and civilization, teaching the blessings of liberty regulated by law, and inculcating love and reverence for the great principles of government as derived from the inalienable rights of man to life, liberty, and the pursuit of happiness.

All sectarian instruction at the university is absolutely prohibited both in the trust deed and in the act of the Legislature; but the immortality of the soul is taught, and the "existence of an all-wise and benevolent Creator, and that obedience to his laws is the highest duty of man." It was provided that a church should be erected, wherein the professors of various religious denominations shall from time to time be invited to deliver discourses not sectarian. The trust deed also provides that the rights and advantages of association and co-operation are to be taught in the university, not in the spirit of agrarianism, communism, or Nihilism, but subject to the rights of man as declared in the Declaration of Independence; that, for the protection of these rights in each individual, the combined force of the whole State should be used and exercised; that equal facilities and advantages should be given to both sexes; and that a farm shall be maintained on the Palo Alto estate for instruction in agriculture in all its branches. The following are the provisions that allow any person at any age to perfect himself in any special branch of science, mechanics, or agriculture:

1. To establish and maintain, in connection with the university, such a number of free scholarships as the endowment of the institution, considering all its objects, will justify. Such scholarships must be given either to those who, by good conduct and study, have earned the right thereto, or to the deserving children of those who, dying without means in the service of the State or in the cause of humanity, have a special claim upon the good will of mankind.

2. To fix the terms and conditions upon which the students generally may be admitted to all or any of the privileges of the university.

3. To fix the terms and conditions upon which the students of the public and private schools and other deserving persons may attend the lectures of the university, or engage in original research thereat, and the terms and conditions upon which the agricultural farms, laboratories, museums, art galleries, mechanical institutes, conservatories, and other institutions, part of the university shall be opened to deserving persons without their becoming students thereof.

4. To establish and have given at the university, by its ablest professors, courses of lectures upon the science of government and upon law, medicine, mechanics, and the other arts and sciences, which shall be free to the post-graduates of the colleges of the university hereby founded and to the post-graduates of all other colleges and universities and to all deserving persons, to the full capacity of the lecture rooms, under such rules and regulations as the trustees may adopt.

In 1886 the Palo Alto farm was made the site of the university. The railroad station of that name, 3 miles distant, is nearly 40 miles south of San Francisco. The site, containing 100 acres, is at the edge of the foothills on the eastern side of the Santa Clara valley. The prevailing style of architecture is an adaptation of the old California missions, low buildings with heavy walls and roofs of tile. The main group of 14 buildings incloses a quadrangle 600 feet long by 250 feet wide. These buildings are mainly intended as class rooms. They are of cream-colored sandstone, are 70 by 50 feet, and the height from the ground to the roof tree is 60 feet. The materials used in their construction were wholly the products of the State of California, with the exception of the tiles. The buildings open upon an arcade that runs around the whole quadrangle. The main entrance, covered by a lofty arch, is in the middle of one side of the quadrangle. On the opposite side is the museum, and on the west side the memorial church. The surface of the quadrangle is covered with a heavy coat of asphaltum pavement. Eight circular beds in the quadrangle are filled with semitropical trees and plants, which add greatly to the beauty of the scene. The separate dormitories for boys and girls are outside of the quadrangle. That for boys, known as Encinia Hall, is of sandstone, 5 stories high, with accommodations for over 300. The cost was \$400,000. That for girls, known as Robles Hall, is of concrete, 3 stories high, with accommodations for 100. Near the dormitories are the cottages of the faculty. These are so arranged that additions may be made to the group at any time, and it is expected that the majority of the professors will be domiciled there as well as many families of those who have children in the university. The museum contains many works of art that had been collected by Mr. Stanford. The plan includes the erection of a conservatory of music.

The requirements for admission are as follow:

Candidates must be at least sixteen years of age, and must pass satisfactory examinations in the following subjects:

General requirements: 1. English. 2. Arithmetic. 3. Algebra, including quadratic equations. 4. Plane geometry. 5. Geography. 6. American history. 7. Latin, including 4 books of Cæsar, 4 orations of Cicero, and Latin prose composition, or German, or French. 8. Physics or any one of the subjects numbered 9 to 14.

Scientific requirements: Any one of the following to be passed before the beginning of the second year: 9. Mathematics, including advanced algebra, solid geometry, and plane trigonometry. 10. Free-hand drawing. 11. Chemistry. 12. Physiology. 13. Zoölogy. 14. Botany.

Language and Literature: Any two of the following to be passed before the beginning of the second year: 15. Latin, including 2 additional orations of Cicero, 6 books of Virgil, and Roman history. 16. Greek, including Book I of Xenophon's Anabasis. 17. Greek, including Books II-IV of the Anabasis, 2 books of Homer, Greek prose composition, and Greek history. 18. French. 19. German. 20. English literature. 21. History.

Students of mature age who are not candidates for a degree and who wish to pursue some one study and its related branches may be permitted to do so without having passed the usual entrance examination (excepting that in the English language) on recommendation of the professor under whom the specialty is to be taken.

For the present the certificates from high schools or academies credited or commissioned by the University of California or by the universities of other States will be received in place of examinations in the entrance subjects which they cover.

Students entering the university from other institutions of recognized collegiate rank will receive the standing to which their examinations or certificates may entitle them.

The baccalaureate degree will be granted to students who have successfully completed the equivalent of 15 lectures or recitations weekly for four years. These four years of work shall include as a major subject the entire course given by some one of the professors in the university, and as minor subjects such work in other departments as the professor in charge of the major subject may require as collateral work. These specified studies will amount to about one third in the nontechnical courses, and two thirds in the engineering courses, of the whole work required for graduation, the remainder being entirely elective.

All students, candidates for a degree, must take, either as preparatory or as undergraduate work, subjects 9 and 20, and also either 18 or 19, as enumerated in the entrance requirements above, with such work in rhetoric and composition as may be required.

The degree of Master of Arts (A.M.), Mechanical Engineer (M.E.), and Civil Engineer (C.E.) will be granted to graduates of this university and of other institutions of equal rank on the completion of an additional year of satisfactory work in residence at the university, in the department concerned, accompanied by an approved thesis embodying the results of independent investigation and research.

The degree of Doctor of Philosophy (Ph.D.) will be granted after the successful completion of an approved course of graduate study of not less than three years and the presentation of an acceptable printed thesis which shall embody the results of original research.

No degree will be granted to any person who has not spent at least one year as a student in residence at the university. No honorary degrees will be given.

The university was opened, with appropriate ceremonies, on Oct. 1, 1891, and Mr. Stanford delivered an address setting forth its objects. Addresses were also made by David Starr Jordan, president of the university, and Martin Kellogg, President of the University of California. The faculty has been gleaned with great care from the universities and colleges in the United States. Over 400 students matriculated on the opening day.

**SUNDAY REST, INTERNATIONAL CONGRESS.** An International Sunday Rest Congress met in Chicago, Ill., Sept. 28. Gen. O. O. Howard presided. An address of welcome was made by C. C. Bonney, of Chicago. In replying to it, the Rev. Dr. W. W. Atterbury related the history of the Sunday-rest movement, which originated in Geneva, Switzerland, about thirty years ago, under the leadership of Alexander Lombard, a banker, and also gave an outline of the scope of the congress, which aimed to present the Sunday question from all points of view, including the industrial, economic, social, and religious. Communications commending the work of the congress were received from Count Bernstorff, of Germany, who had been called home; the Netherlands Sunday Rest Association; the Glasgow Workingmen's Association; the Workingmen's Lord's Day Rest Association of England; M. Léon Say, of France; President Gompers, of the American Federation of Labor; and other representatives of trades and labor associations. Papers were read on "The

Physiological and Pathological Value of Sunday Rest," by Dr. S. B. Lyon, of the Bloomingdale Asylum; "The Legal Aspects of Sunday Rest," by ex-Senator J. R. Doolittle; "Sunday Laws," by William Allen Butler and Dr. H. W. Rogers; "Sunday in the Public Service," by Gen. O. O. Howard; "Sunday Post-Office Regulations," by the Hon. John Wanamaker; "The Sabbath in Judaism," by Rabbi Felsenthal, of Chicago; "Sunday Rest in Relation to Workingwomen," by Alice L. Woodbridge and Florence Kelly; "The Popular Desire for Sunday Rest," by Jane Addams and Mrs. Henrotin; "The Relations of Sunday Rest to the Fundamental Principles of Moral Life," by the Rev. O. Remier, of Paris; "The Place of Sunday Observance in Christianity," by the Rev. W. W. Atterbury; "The Lutheran View of Sabbath Observance," by the Rev. Dr. Spaeth, of the Lutheran Theological Seminary, Chicago, and the Rev. Dr. Heilman; "Recent Movements for Sunday Rest in Europe," by E. Deluz, Secretary of the International Federation, Geneva, Switzerland; "The Sacred Character of the Sabbath," by the Rev. Dr. Arthur Little; "The Right of Labor to a Weekly Rest," by George E. McNeill; "The Sunday Question in Great Britain," by Charles Hill, Secretary of the Lord's Day Rest Association of London; "Sunday Rest in French Industrial Establishments," by A. Gibon, of Paris; "The Work in Behalf of Sunday Rest in the Netherlands," by the representative of a society in that country; and the relations of Sunday observance to religion were further discussed by Cardinal Gibbons, the Rev. J. W. A. Stewart, Pastor Prunier, of Paris, the Rev. W. R. Huntington, D. D., the Rev. Joseph Cook, D. D., and other persons.

**Sabbath Union, American.**—The fifth anniversary of the American Sabbath Union was held in the city of New York, Dec. 10 to 12. The Rev. George S. Mott presided. The general secretary presented his annual report, embracing items of interest from 30 affiliating Sabbath associations and Sabbath committees. It defined the aim of the Union as being to unite the Sabbath-loving citizens of the republic in concentrated movements for the protection of the Sunday, which was incorporated in the civil structure at the beginning by our forefathers. The Union embraces fourteen Christian denominations, and is heartily approved by many statesmen, civilians, and wage earners. "The masses now," the report continues, "irrespective of race or creed, are studying as never before the Sabbath question in its social and economic bearings. The laxity of many Christians in reference to the sacred observance of the Sabbath is, to the best leaders of Christian thought, an alarming fact, and the Church is becoming aroused to a sense of her obligation."

Resolutions were adopted recognizing the indebtedness of the society to its late President, Col. Elliott F. Shepard, recently deceased; recommending the observance of the first week in April, 1894, as a special season of prayer throughout the world for the preservation of the Sabbath; offering thanks to God for the vindication of the Sabbath at the Columbian Fair, as manifested in the face of opened gates, in "the covered exhibits, the meager attendance,



the conspicuous absence of workingmen, the unmistakable opposition of public sentiment, together with the financial loss entailed by Sabbath opening"; regarding the publication and circulation of the Sunday newspaper "a most subtle and dangerous agency for the secularization of the Sabbath, inasmuch as it destroys the respect of its readers for the divine command, deprives a multitude of laborers of their weekly rest day, and proposes to make money by its publication on the day upon which it is unlawful to carry on worldly business"; and appealing to pastors and members of churches and all order-loving citizens not to patronize any paper issued on the Lord's Day, either by purchasing or advertising. A number of addresses were delivered during the meetings on subjects relating to the American Sabbath and its faithful observance.

**SUNDAY SCHOOLS. International Convention.**—The International Sunday-School Convention is the body which has the charge of the Uniform International Sunday-School Lessons now used in the Sunday schools of the majority of Protestant denominations throughout the world. It meets every three years. Its first meeting was held in Baltimore, Md., in 1875. Subsequent meetings have been held in Atlanta, Toronto, Louisville, Chicago, and Pittsburg. The seventh meeting was held in St. Louis, Mo., beginning Aug. 30. The Hon. J. I. Harris, of Alabama, presided. Statistics were presented showing that there were in the United States 121,797 Sunday schools, with 1,303,254 officers and teachers and 9,688,596 pupils; in the Dominion of Canada, 8,086 Sunday schools, with 67,142 officers and teachers and 557,228 pupils; and in Newfoundland and Labrador, 314 Sunday schools, with 2,162 officers and teachers and 22,817 pupils. The report of the Lesson Committee showed that by the end of the coming December the schools would have gone three times through the Bible since the institution of the International system of lessons, under which it was intended that the whole book should be reviewed once every seven years—not continuously, but in such a way and with such selections of passages as should give a clear idea of the thread of the Bible story and a presentation of the essential doctrines taught in it. Its contents had been covered as fully as possible within the limit assigned. Of 1,031 lessons provided during the past seven years, 461 had been from the Old Testament and 570 from the New Testament. In reply to criticisms that had been made of the lessons, the report said:

As to the complaint that our system does not furnish a sufficient amount of denominational teaching, our reply is that the difficulty must be with the teachers, and not with the lessons. If these denominational teachings have not been included in the International Lessons, it is because they are not in the Bible. The whole Christian world may be challenged to point out a clearly revealed biblical doctrine which has been avoided or omitted. It is true we have not arranged the lessons so as to teach any peculiar system of theology, or to prove any denominational declaration of faith. That work we have left entirely to expositors and teachers, for catechetical instruction and supplemental lessons. But the proof texts for all the essential doctrines found in the Bible are included in our lessons. It has been very truly said by one in no way connected with our committee that the Inter-

national Lessons conform to the "plan of the Bible as a book of books, rather than to a system of doctrines, or to a series of duties, or to any central truth." As the "Sunday School Chronicle" of London well expressed it, "Our International system is based on the idea that the moral and religious principles embodied and illustrated in the Bible are the proper subjects of Sunday-school teaching."

Resolutions were adopted recognizing that the International system had stimulated Bible study to a degree never before known; had placed "the richest intellect and the latest acquisition of Bible knowledge in the hands of the common people"; and had developed and deepened the Christian brotherhood and fellowship; affirming belief in it as being, all things considered, the most practical system for Sunday schools generally; urging adherence to it; and relieving the International Lesson Committee from the instructions hitherto given excepting those providing for a temperance lesson every three months.

**World's Convention.**—The meeting of the International Convention was followed by that of the World's Second Sunday-School Convention in St. Louis, Sept. 4. A chart suspended over the platform gave the following as the numbers in Sunday schools in the nations mentioned other than the United States. The exhibit is not complete, for Australia and several missionary lands are omitted:

France—Sunday schools, 1,456; teachers, 3,800; pupils, 60,000; total, 63,800.

Germany—Sunday schools, 5,900; teachers, 34,983; pupils, 749,786; total, 784,769.

Switzerland—Sunday schools, 1,637; teachers, 6,916; pupils, 113,382; total, 120,298.

Belgium—89 Sunday schools; 310 teachers; 4,112 pupils; total, 5,422.

Austria—212 Sunday schools; 513 teachers; 7,195 pupils; total, 7,708.

Finland—6,853 Sunday schools; 11,534 teachers; 147,134 pupils; total, 158,668.

Denmark—506 Sunday schools; 3,043 teachers; 55,316 pupils; total, 58,359.

Norway—550 Sunday schools; 4,399 teachers; 63,980 pupils; total, 68,370.

Portugal—11 Sunday schools; 56 teachers; 1,066 pupils; total, 1,122.

Newfoundland—359 Sunday schools; 2,275 teachers; 22,976 pupils; total, 25,251.

India—5,548 Sunday schools; 10,715 teachers; 197,754 pupils; total, 208,469.

Italy—Sunday schools, 403; teachers, 654; pupils, 10,969; total, 11,623.

Ireland—Sunday schools, 3,584; teachers, 27,740; pupils, 308,516; total, 336,256.

Canada—Sunday schools, 8,336; teachers, 68,348; pupils, 564,228; total, 632,576.

Scotland—Sunday schools, 6,275; teachers, 62,994; pupils, 694,866; total, 757,854.

England and Wales—Sunday schools, 37,201; teachers, 585,457; pupils, 5,976,357; total, 6,561,994.

The Rev. B. F. Jacobs, of Illinois, was chosen president of the convention. Addresses were delivered concerning "Sunday-Schools in Connection with Missions," "The System of Home Bible Study," "The Bible," "The Teacher's Work," "The English System of Systematic Visitation of Sunday Schools," "The Examination of Teachers and International Diplomas," "Normal Sunday-School Work," "Primary Work," and "The International Bible-Reading Association."

**SURGERY AND MEDICINE, RECENT ADVANCES IN.** The discoveries of the ninth decade of the century inaugurated an amazing epoch in the development of the medical sciences and of the art of healing. It has been like a sunrise, but its sun is not yet half above its horizon; and great as the achievements have been in both science and practice, it is universally felt that they are but as dawn to high noon in comparison with "the promise and potentiality" of the vital secrets now opened and opening before the medical profession. The development of micro-biology under the lead of Pasteur and Koch has made of pathology a new science, and laid the foundation of a new art of healing. Although the first enthusiastic expectations of victory over that almost ubiquitous demon of disease, the microbe, have been damped, and even its true relations to disease are in dispute, it is undisputed that careful specialists have used the new knowledge to good purpose as an auxiliary in the treatment of plagues like consumption, Asiatic cholera, diphtheria, etc.; while the vantage acquired through bacteriology for tracing their sources, arresting their spread, and repelling their invasions needs only to be universally employed, as it is beginning to be in some places, to make an enormous reduction in the bills of mortality. The Pasteur Institute of Chicago reports a total of 230 patients bitten by undoubtedly rabid animals, besides 72 strongly suspected, with only one case of hydrophobia; and this corresponds closely with the results in Paris, New York, and other cities where the treatment has been established. But the most decisive results thus far attained through the science of bacteriology will be noted further on in the department of surgery, after mentioning important medical applications recently made of certain other modern sciences. Among these, electricity and phonography are doing valuable service in diagnosis. The illumination of the internal cavities and passages of the body by the electric light, together with optical apparatus for their observation from without, now often enables the physician or surgeon to proceed with certainty and promptitude where of late he would have had to act upon imperfect knowledge, upon doubtful conjecture, or after too long awaiting of developments. Interior auscultation by means of a conductor analogous to the common speaking tube (aided, perhaps, by the macrophone) affords further aid by more accurately detecting or distinguishing symptomatic sounds of the heart, lungs, and some organs which have never before given testimony to their condition in this way (Dr. Benjamin W. Richardson). At the same time the phonograph records these audible indications, both of the original and succeeding conditions of a case, for the most deliberate and critical consultation that may be at any time desirable (Dr. J. Mount Bleyer, New York). Electricity as a stimulant and as a reducer of morbid growths has advanced notably of late into scientific handling by cautious and discriminating physicians. A great number of potent antiseptics, antipyretics, anæsthetics, and anodynes have been added to the pharmacopœia, exciting sometimes high expectations by their remarkable powers, but their realized utilities have been mostly con-

fined to preventive medicine and surgery, where some of them are essential factors in achievements that seem to approach more nearly to the miraculous than perhaps any others in the history of human progress.

The most substantial and unequivocal progress in the healing art proper, and that which is indeed truly wonderful and novel, is found not in the administration of drugs, or even of hygienic regimen (though something might be claimed in each of these directions), but in the discovery or more extended application of methods for supplying or supplementing the grand physiological process which is the practical basis of life, and therefore of successful resistance to disease. To build against the waste and destruction of disease is the great medical achievement of the present and, so far as can be seen, of the future. Heretofore the best that had been known on this line consisted in assistance to the digestion, assimilation or absorption of nutriment, by means of preparations of food predigested or otherwise specially adapted, together with artificial or natural digestive ferments and stimulants, and, above all, the impartation of motion to all tissues and fluids by mechanical massage, exciting tissue nutrition by tissue waste and circulation. It is to be placed, in passing, to the credit of the immediate period under survey, that the invaluable agency of massage, as applied mechanically by Drs. George H. Taylor and George H. Patchen, of New York, is much more widely recognized than ever before; and also that nutriments of peculiar value, for patients who are not past assimilating food, have been provided in forms available everywhere and for all. But the vital discovery of the day, not to be ranked with mere improvements, however ameliorative, is the importation of vital fluids in their living state from the systems of the most vigorous animals to supply corresponding deficiencies in the sick and even moribund human subject. Extracts of the nerves and of various glands (chiefly the reproductive) have shown too much promise and held their own too well in the practice of Drs. Brown-Séquard, William A. Hammond, and others, to be passed entirely without notice, although the extent of their utilities remains in question.

**Hæmotherapy.**—The one really established "rejuvenator" now finding its way into degenerating or failing tissues of every kind, and under almost unlimited conditions of disease, is *the living blood cell, or corpuscle*. Transfusion of blood from one person to another had long ago been resorted to with success in cases of extremity, but the conditions necessary for this process are rarely available, and the process at best would scarcely be applicable to one in a thousand of the cases where the vital blood element is now found to be the effectual desideratum. This kind of cases has rapidly grown to a multitude, and multiplies with every day's experience, demonstrating a range and power of cure beyond all comparison in the previous history of medicine. Space here would fail to catalogue the conditions in which the live blood extract (designated commercially as bovine) is already applied with results incredible until witnessed. The corpuscles having been preserved unchanged



from their vital condition in the arteries of the bullock, and all germs casually attendant having been sterilized from the first, the containing liquid is injected into subcutaneous tissue, into veins, into arteries; is absorbed by the raw surfaces of wounds or sores of every kind, or enters the circulation by the absorbents of the stomach or any part of the intestines to which it can be applied, with all the effect of a natural enlargement on the spot, of the volume and vigor of the blood, taking up its tissue-forming and disease-expelling office at once in the part affected, and to which it is applied, while employed at the same time as a supplement or even substitute for alimentation, to build up and invigorate the system through the general circulation. The applications that have been made of this "elixir" have developed degrees and modes of vital efficiency in the blood that were before unsuspected—this more especially in surgical cases hitherto nearly intractable—while the *practicability* of supplying its power effectually to combat local lesions and the moribund condition resulting from exhaustion by disease, hæmorrhage, etc., is no less a complete revelation to medical science. A person *in articulo mortis* from surgical or childbirth hæmorrhage, or from exhaustion by fever accompanied with inability to retain a drop of any kind of nourishment, medicine, or even stimulant for days, is a kind of case reported by hundreds in the recent practice of physicians who have successfully come to the rescue with bovine supplied to the blood by any available way of access, as per rectum, or even by subcutaneous injection when no other access was practicable or adequate to the emergency. The degree of uniformity and certainty in which a sort of resurrection is effected in such cases is as far beyond precedent in medical experience as the almost miraculous efficacy developed in the application, topical or general, of the blood extract.

In surgery the fatal collapse from hæmorrhage—and also in medical practice the collapse of cholera, typhoid fever, etc.—had been recently remedied by subcutaneous or arterial infusion of slightly saline water, sometimes as much as a gallon being thus thrown into the circulation within a few minutes. Still later, the more normal and substantial re-enforcement of the circulation by bovine has been employed in collapse with the most admirable effect, and promises very definitely to be not only a sovereign resource for the surgeon, but a means of carrying many patients safely through the last and desperate stage of Asiatic cholera, etc., and, still better, of preventing that stage by a timely supply to meet the drain of the serous diarrhœa, not only filling the empty blood vessels, but filling them with tissue-building blood. Not to dwell, within our narrow limits, on the numerous applications of this vital agent that might be cited, the leading line that it has happened to take thus far must be more particularly noticed, viz., the cure of wounds and ulcers. The earliest discovery of this power was made by Dr. W. H. May, of New York, in 1888, by experiment on a desperate ulcer of three years' growth, 4 by 6 or 7 inches in dimensions, deep in the muscular tissues of the leg, and found proof against all agents then known for checking its continual

encroachment and growth. His method was that of hypodermical injection of bovine at a number of points around the circumference of the ulcer, and about an inch from its margin. The entire ulcer was expelled and supplanted by sound flesh within three months from the beginning of this treatment—a mere experiment, and the first ever made. Since then several physicians have vanquished this all but incurable kind of disease by the same agent, but latterly without the painful and tedious injection process, which has been discarded for most cases in favor of direct application of bovine to the interior of the sore, after due cleansing. The record by 1 physician of 335 ulcers (indolent, syphilitic, varicose, and tuberculous) shows 95 per cent. of completed cures. (Inflammation, however, must be subdued by other treatment before applying bovine, which otherwise would aggravate the case by the active increase of local nutrition which it sets up. The removal of the morbid products and sterilization of the part must also be carefully performed, in order to a free absorption of the blood extract without deterioration from contact with the acid discharges.) The treatment of cancers has been initiated with gratifying success in the superficial class (epithelioma), and sarcoma is thought without doubt to be equally amenable to the blood treatment, where it is accessible. It is thought quite possible that like success may be had with cancer of the organs when in accessible position and stage of development. Phthisis, or tuberculosis of the lungs, being an ulceration that is readily overcome by the blood treatment when occurring in external parts, has also been attacked on the same principle with encouraging, indeed surprising, effect by Dr. T. J. Biggs, of the New York Polyclinic. Bounds can not be set at present to the range of beneficence opening before this truly epoch-making discovery in medicine. Its place in operative surgery has already extended to the treatment of injuries and diseases of both muscle and bone which must otherwise have been disposed of by amputation; cases of which, attended with wonderful success, might be cited in detail did space permit.

**Operative Surgery.**—In operations on the abdominal organs and the brain, it is needless to remark, modern surgery has startled and thrilled the world with its later triumphs. Bacteriology and antiseptis—or aseptis, which if actual comes to the same thing or better—are the twin pillars of our operative progress, buttressed on either side by anæsthesia and bovine injection. Intestinal tumors and lacerations are now cut out of the opened abdomen and the wounds sewed up and healed, by thousands on thousands, with less danger than lately attended the amputation of limbs. The stomach and liver have each been successfully cut partly away in the removal of tumors. The bladder and the female organs are extirpated and dispensed with when necessary. The diseased larynx is removed, and replaced with an artificial substitute by which intelligible speech is effected. The lungs have been relieved of diseased portions by the knife and healed. Nerves, great and small, as well as muscles, tendons, and bones, are resected or removed, replaced or reunited, and repaired in a serviceable manner.

The entire leg is amputated at the hip joint by one or more established operations, notably Wyeth's and Senn's, without danger of the hæmorrhage which had been oftener than otherwise fatal. Internal ailments, too obscure for clear diagnosis, are unhesitatingly investigated with the knife if necessary. The perils and horrors of childbirth in cases where a small pelvic orifice or an overgrown fetus absolutely prevent delivery are substantially done away by the impunity which perfected asepsis and anæsthesia afford in Cæsarean section, and in a newer operation performed with greater ease and less injury, symphysiotomy, namely—separating the pubic bones at the symphysis, and pressing them sufficiently apart. The bones grow together again without difficulty, and there seems no reason why bovine sponge-grafting or transplanted bone might not fill the gap and allow adequate passage for future deliveries without a second resection.

Fortified with modern operative impunity, and guided by the map of the brain with its branches and distributive functions so far as made out by the investigations of vivisectionists, the surgeon attacks tumors, abscesses, hæmorrhages, etc., inside the skull with as direct and certain aim in most cases as if the brain had no covering; removes or repairs them, and patches up both skull and scalp as good as new. To be more explicit, the greater number of symptoms produced by lesions in the brain indicate unerringly to modern science, by their character and the parts and functions affected, the precise area of the brain from which the disturbance proceeds, so that the surgeon can lay his finger over the hidden sarcoma, abscess, blood clot, or whatever, and cut down to it as confidently as a navigator would steer for a port or past a sunken rock by his chart.

By exploring the uncovered brain of the living monkey with the stimulus of the electric battery, and noting the exact muscular motions so produced from each point in the brain, it has been found practicable to define the precise area of the brain from which each of the motor impulses proceeds, also the areas that control most of the senses, and the areas concerned in some of the mental faculties and emotions, such as recognition of the uses of objects physically perceived. The mental expression of animals is so obscure to us that little further progress in phreno-topography may be expected from animal vivisection. But the great number of human vivisections now performed for the relief of cerebral and nervous troubles, epilepsy, etc., will incidentally and gradually reveal at length the knowledge that is wanted to enable us to go to the root of many a disorder now mysterious, under the guidance of morbid mental phenomena which will have been tracked to their several lairs in the brain, and forms even of insanity that can be extirpated or laid open to therapeutic treatment by the surgical armament will be brought to light in growing numbers, and will be vastly better understood. Some of the mental processes related to sensation have already been located, but much remains to be done by observation on the regular line of surgical practice, or "human vivisection," before the phreno-topographic chart of the brain will be so complete that brain surgery can "have its perfect work." Among pion-

eer explorations for the centers of mental action in the brain, the most satisfactory as yet is the location of certain mental processes connected with sensation, including the recognition of objects seen (or what is called psychical sight) in a small convolution of the brain known as the angular gyrus. By means of this datum the celebrated surgeon MacEwen, of Glasgow, cured a case of melancholia with homicidal impulses which had originated in an injury of the skull. Among other consequences of the accident, the patient had been unable to recognize the use or nature of familiar objects which he distinctly saw, although he could still recognize it fully through the sense of touch. Taking, therefore, the angular gyrus for his guide, MacEwen cut out a button of bone from over it, and found on the inner side a splinter that had been struck off from it and had been pressing, partially imbedded, on the precise area of "psychical sight." This having been removed, the patient's intellectual infirmity disappeared, and with it also the impulse to kill his wife and children.

Epilepsy, by its marked motor symptoms, has guided the surgeon to its centers in the brain in hundreds of operations already, and with generally very beneficial, though more rarely decisive, results. The initial movement of the fit is taken for a guide; and if the electrical test on the corresponding motor area of the brain produces the epileptic fit as well as the characteristic movement, the extirpation of that area, accurately defined, proves a curative success. Otherwise it is necessary to explore farther to find the source of the coincident symptoms. In a case (reported by Dr. W. W. Keen, of Philadelphia, among other valuable data herein employed) of epileptic attacks which always started in the right thumb, it was sought to define precisely the extent of the thumb center in the brain by cutting out a button from the skull of an inch and a half diameter (covering the hand, arm, and face centers), and then stimulating the brain from the electrical battery at different points and noting the effects on different muscles until, point by point, the exact area for each set of muscles was circumscribed, precisely as the animal vivisectionists had made the original discoveries. The thumb center thus accurately delimited was found to be about half an inch square. It was excised, the exactitude of the operation being tested by the means before used. The immediate effect was the typical epileptic fit, together with complete paralysis of the muscles of the thumb—five groups, certain of which extend well up toward the elbow—without in the least affecting any other muscles. In a few months the muscles of the thumb also recovered their functions. Whether the removed thumb center had been repaired by a fresh growth is uncertain. It has been reported, in a case of injury to the left side of the head which impaired the dexterity of the right hand, that the right motor center came to the rescue, concentrating faculty in the left hand to the full extent of the impairment in the right. This would seem to show, at least, that the usual inferiority of the left hand is merely the result of one-sided exercise of the hand centers in the brain.

In a recent case of Dr. J. W. Kime, United States army surgeon at Fort Dodge, Iowa, where



the skull of a boy had been violently crushed out of shape and large fragments of it driven into the brain, the fragments were raised and in part removed, the lacerated brain scraped out by the teacupful, and the whole so repaired that in time the vacated and denuded space was refilled with fresh tissue, and covered again with new bone, and the faculties resumed their operations apparently unaffected.

One of the strangest surgical operations that the human head has been proved capable of enduring is the opening and enlargement of the skull of microcephalous, and therefore more or less imbecile, children. It is called Lannelongue's operation, from its audacious originator, but has been improved and performed with remarkable success, in the development of the faculties, by Wyeth and other American surgeons. In this operation the skull is sawed open from front to back and the separated halves are forcibly pressed apart until the brain is released from the constriction under which it had been dwarfed, and given reasonable space for future growth. Artificial or transplanted bone is supplied to the gap, or else a protective cap is fitted on while Nature makes the repair. In ordinary modern trephiny it is only necessary to push back the button, and Nature does the rest.

**Sanitary Progress.**—This is a short chapter, so far as recent discovery is concerned, although progress of late years in the application of what is known has been considerable, and the proposals of progress now struggling to birth in practice promise immense results, particularly through the isolation of consumptives and disinfection of their quarters as in other infectious diseases, and the rigorous sanitary control of cows, from the milk of which animals, in their domesticated and inbreeding conditions, it is believed that consumption generally, and typhoid frequently, have been propagated.

In the great and paramount matter of water sanitation, also, the progress of recent years has been entirely in extending the practice of previously discovered methods. Of these, the perfect sanitation of drinking water by the Hyatt filter (when properly used) is central, and indeed all-sufficient. The adoption of this defense against malign organisms and organic contaminations in water has lately extended considerably in private and corporate establishments, inasmuch that the consolidated companies now peacefully enjoying together the use of the Hyatt patents are reported to be making money.

The great question of sewage disposal continues in the unsettled and unsatisfactory condition of old, between irrigation and precipitate filtration, which should probably be tried in combination, the reduced sludge being plowed into cultivated soil. The sewage of the World's Columbian Exposition was solidified by the Shone system, and consumed in the Engle Garbage Cremator with the garbage and other waste of the premises, the whole averaging over 40 tons per day, at a cost, as officially reported, of but 60 cents per ton, and without the slightest exhalation, offensive or otherwise, appreciable by the senses.

**SWEDEN AND NORWAY**, two kingdoms of northern Europe united by the treaty of Kiel, concluded on Jan. 14, 1814, under one

sovereign. King Oscar II, born Jan. 21, 1829, is the grandson of Marshal Bernadotte, Prince of Ponte Corvo, who became King in 1818 under the style of Carl XIV.

**Sweden.**—The legislative power is vested in the Riksdag or Diet, composed of two Houses, of which the upper, consisting of 147 members, is elected by the provincial and municipal bodies, and the other, containing 228 members, by all qualified voters.

The executive power is exercised by the sovereign on the advice of the Council of State, which in the beginning of 1893 was composed of the following members: Minister of State, Erik Gustaf Boström; Minister of Foreign Affairs, Count Carl Lewenhaupt; Minister of Justice, August Ostergren; Minister of the Interior, Victor Lennart Groll; Minister of Finance, Baron Fredrik von Essen; Minister of Education and Worship, Gunnar Wennerberg; Minister of War, Baron A. E. Rappe; Minister of Marine, Baron C. G. von Otter; ministers without portfolios, Baron A. L. E. Akerhielm and Sven Herman Wikblad. During the year Admiral J. C. E. Christerson succeeded Baron von Otter as Minister of Marine and Dr. G. F. Giljam became Minister of Education.

**Area and Population.**—The area of Sweden is 170,979 square miles. The population was computed to be 4,806,865 on Jan 1, 1893, of whom 2,327,883 were of the male and 2,478,982 of the female sex. The number of marriages in 1891 was 27,940; of births, 139,072; of deaths, 84,159; excess of births, 54,913. The emigration was 42,776 and the immigration 6,114. Stockholm, the capital, had 252,574 inhabitants in 1892 and Göteborg 107,965.

**Finances.**—The budget for 1894 estimates the ordinary revenue at 22,183,000 kronor (1 krona = 27½ cents). The extraordinary revenue is estimated at 75,200,000 kronor, of which 37,500,000 kronor are derived from customs, 8,100,000 kronor from posts, 13,700,000 kronor from impost on spirits, 3,500,000 kronor from stamps, 2,600,000 kronor from the impost on beets, 9,300,000 kronor from the income tax, and 500,000 kronor from various sources. The total expenditures are estimated at 97,283,000 kronor, of which 1,320,000 kronor are for the civil list, 3,954,000 kronor for justice, 611,250 kronor for foreign affairs, 26,776,686 kronor for the army, 9,503,400 kronor for the navy, 6,937,000 kronor for the interior, 17,631,400 kronor for finances, 14,225,000 kronor for public worship and instruction, 4,639,764 kronor for pensions, 10,933,600 kronor for the public debt, and 749,900 kronor for various other expenses. The public debt on Jan. 1, 1893, was 273,905,763 kronor.

**Commerce.**—The total value of imports for 1891 was 369,698,000 kronor and of exports 323,498,000 kronor. Of the imports, the principal articles were: Coal, 30,958,000 kronor; rye and wheat, 28,753,000 kronor; coffee, 26,936,000 kronor; woolen goods, 23,936,000 kronor; machinery, 14,190,000 kronor; cotton, 13,429,000 kronor; cotton goods, 10,176,000 kronor. The principal articles of export were: Timber, 111,376,000 kronor; butter, 32,505,000 kronor; iron, 31,915,000 kronor; paper, 22,913,000 kronor; oats, 19,781,000 kronor; fish, 17,116,000 kronor; matches, 9,423,000 kronor; wood pulp, 8,941,000

kronor; animals, 6,715,000 kronor; iron manufactures, 4,319,000 kronor; cotton goods, 3,826,000 kronor; machines, 3,237,000 kronor. Of the imports, 119,836,000 kronor were from Germany, 98,655,000 kronor from Great Britain, 44,620,000 kronor from Denmark, 33,565,000 kronor from Norway, 27,316,000 kronor from Russia and Finland, and 12,935,000 kronor from the United States. Of the exports, 146,385,000 kronor went to Great Britain, 37,876,000 kronor to Germany, 37,391,000 kronor to Denmark, 34,404,000 kronor to France, and under 20,000,000 kronor each to Norway, Holland, Russia, and Belgium. The exports to the United States were 664,000 kronor in value.

**Navigation.**—The number of vessels entered in 1891 was 31,247, of 5,622,000 tons, of which 11,201, of 2,479 tons, were with cargoes. The number cleared was 29,694, of 5,663,000 tons; 21,385 of them, of 4,327 tons, with cargoes. Of the vessels entered, 14,950 were Swedish, 2,431 Norwegian, and 13,866 foreign. The number of steamers entered was 13,239, of 4,043,000 tons. The mercantile shipping on the registers in 1892 comprised 2,979 sailing vessels, of 377,667 tons, and 1,181 steamers, of 152,493 tons.

**Communications.**—The railroads in 1893 had a total length of 5,285 miles, of which 1,760 miles belonged to the state and 3,525 miles to companies.

The post-office in 1891 forwarded 47,817,000 domestic and 12,574,000 international letters, 5,359,000 domestic and 816,000 international postal cards, and 52,417,000 domestic and 6,172,000 international circulars, journals, etc. The receipts were 10,797,723 francs; expenses, 10,351,818 francs.

The telegraph lines in 1892 had a length of 7,970 miles, of which 5,440 miles belonged to the Government. The total length of wire was 23,655 miles. The number of paid messages sent in 1892 was 1,156,746 in the interior, 678,231 abroad, and 190,492 in transit. The receipts were 2,021,687 francs; expenses, 831,825 francs.

**The Army and Navy.**—The law of Dec. 2, 1892, makes every Swede liable to military service from his twenty-first to his fortieth year. Recruits are instructed ninety days altogether, all in the first year for the cavalry and sixty-eight days in the first and twenty-two in the second year for the other arms. The privileged position of the inhabitants of Gottland has been abolished. The effective strength of the active army in 1893 was 38,802 men, including 1,953 officers. The war effective is 272,553 men, not including 150,000 in the Landsturm.

The war fleet in 1893 comprised 3 armor-clad turret ships, 4 ironclad monitors, 10 armored gunboats, 1 frigate, 3 corvettes, 9 first-class and 5 second-class gunboats, 1 torpedo catcher, 4 first-class, 9 second-class, and 7 third-class torpedo boats, 2 school ships, and 2 transports, having a total armament of 97 great and 196 small guns.

**Politics.**—The advocates of universal suffrage arranged for the election of a convention by popular vote which was called the Folkriksdag, or People's Diet, which met in March at the same time as the regular Diet. The Conservatives took no part in the movement, but the Socialists and the Liberals awakened a general

interest among the working people and the agriculturists, and brought out their full vote. Under the Swedish Constitution no one has a vote who does not own land of the assessed value of 1,000 kronor, or has not farmed for five years land valued at 6,000 kronor, or does not pay a tax on an income of 800 kronor. This restricts the suffrage to 6 per cent. of the population. The popular convention addressed an appeal to the legal Riksdag to consider an amendment for the extension of the suffrage, but the latter, by a vote of 118 to 94, refused to allow the subject to be discussed.

The Riksdag has authorized the reorganization of the army, which requires large expenditures and new taxes. The Government proposes also to build 15 new cruisers, 50 torpedo boats, and 6 avisos. The friends of the Government, to set a patriotic example and encourage the people to make the necessary sacrifices, instituted a national week of voluntary abstinence, the savings from which were contributed to the Government for military purposes.

The result of the general elections, which ended in September, was to strengthen the hands of the Moderate Free Traders and arrest the Protectionist movement. The new Chamber is composed of 85 old Conservative Protectionists, 40 Moderate Free Traders, and 103 Free-Trade Radicals, who have declared for a wide extension of the franchise and ultimate universal suffrage and for the legislative regulation of the hours of labor.

**Norway.**—The representative assembly is the Storting, elected for three years by universal suffrage in two degrees. One fourth of the members are separated to form the Lagthing which acts as an upper chamber, while the other three fourths constitute the Odelsting, where all legislation is initiated. Bills rejected by the Lagthing may be made law by a two-third vote of the whole Storting.

The ministry, at the beginning of 1893, was composed of the following members: Minister of State, J. W. C. Steen; Minister of Finance and Customs, J. W. C. Steen; Minister of Public Works, H. T. Nysom; Minister of Education and Ecclesiastical Affairs, C. C. Berner; Minister of the Interior, Wollert Konow; Minister of Justice, O. A. Qvam; Minister of National Defense, Lieut.-Col. P. T. Holst; Minister of State at Stockholm, O. A. Blehr.

**Area and Population.**—The area of Norway is 124,495 square miles. The population, as ascertained by the census of Jan. 1, 1891, was 1,988,674, of whom 951,290 were males and 1,037,384 were females. The urban population was 463,631, the rural population 1,525,043. The number of marriages in 1891 was 13,179; of births, 61,721; of deaths, 34,856; excess of births, 26,865. The emigration in 1892 was 17,049. Christiania, the capital, had 148,213 inhabitants present on Jan. 1, 1891.

**Finances.**—The receipts of the treasury for the financial year 1891-'92 were 50,242,600 kronor, whereof 22,017,300 kronor were derived from customs, 3,597,600 kronor from spirit duties, 2,250,500 kronor from a malt duty, 7,531,900 kronor from railroads, 3,036,900 kronor from posts, 1,232,400 kronor from telegraphs, 1,411,600 kronor from state domains, forests, and



mines, 1,635,300 kroner from invested funds, and the rest from law courts, the university and schools, prisons, hospitals, and asylums, succession duties, a duty on playing cards, etc. The ordinary expenditures were 49,688,500 kroner, of which the principal items were 9,674,700 kroner for operation and maintenance of railroads, bridges, canals, and harbors, 8,382,400 kroner for the debt, pensions, silver mines, and collection of customs, 8,192,400 kroner for the army, 7,101,300 kroner for the post-office, telegraphs, agriculture, fisheries, forests, etc., 4,915,200 kroner for education and worship, 4,955,500 kroner for courts, police, prisons, and sanitary service, and 3,264,100 kroner for the marine.

The public debt on June 30, 1892, amounted to 125,541,200 kroner, and the reproductive capital of the state to 137,468,600 kroner, exclusive of public lands, forests, and mines.

**Commerce.**—The merchandize imports in 1892 amounted to 200,000,000 kroner and the exports to 126,400,000 kroner. The principal imports were: Cereals for 37,200,000 kroner, tissues for 27,500,000 kroner, colonial wares for 23,200,000 kroner, animals and animal food products for 13,500,000 kroner, coal for 12,400,000 kroner, and metal wares for 10,300,000 kroner. The principal exports were animals and animal food products for 46,000,000 kroner, timber for 27,900,000 kroner, and wood manufactures for 15,000,000 kroner. Over one quarter of the imports came from Germany, something less than one quarter from England, and a little more than one eighth from Sweden. Of the exports, 43,642,000 kroner went to England, 19,709,000 kroner to Sweden, 15,690,000 kroner to Germany, and 12,642,000 kroner to Spain. The imports from the United States were valued at 9,472,000 kroner, and the exports to the United States at 1,842,000 kroner.

**Navigation.**—There were 12,362 vessels, of 2,921,807 tons, entered, and 12,002, of 2,853,366 tons, cleared in 1891. Of the arrivals, 6,860, of 1,979,489 tons, and of the departures, 6,542, of 1,922,441 tons, were Norwegian vessels. Of the total arrivals, 6,212, of 1,831,931 tons, brought cargoes, and 6,150, of 1,089,876 tons, came in ballast, and of the departures, 10,644, of 2,339,036 tons, carried cargoes, and 1,358, of 514,360 tons, sailed in ballast.

The merchant navy on Jan. 1, 1892, numbered 6,798 sailing vessels, of 1,500,069 tons, and 735 steamers, of 238,511 tons.

**Communications.**—The railroads in 1892 had a length of 970 miles. The postal traffic for 1892 was 23,449,000 domestic and 8,409,962 foreign letters and postals, and 26,710,600 domestic and 3,917,600 foreign printed inclosures. The postal receipts were 3,130,493 kroner and the expenses 3,111,614 kroner. The telegraphs of the state had a total length of 4,915 miles, with 9,920 miles of wire. The number of internal dispatches was 1,139,527; of international dispatches, 568,700. The receipts were 1,314,591 kroner and the working expenses 1,399,267 kroner.

**The Army and Navy.**—Military service is obligatory from the age of twenty-three for five years in the active army, but the recruits are only required to remain with the colors from forty-two days in the infantry and fifty in the cavalry and field artillery in the first year and

shorter periods in the succeeding years. The effective strength of the active army is about 1,700 officers and instructors and 18,000 men, which can be supplemented by an equal number of the Landwehr in time of war.

The fleet consists of 4 ironclad monitors, 2 corvettes, 3 first-class, 12 second-class, and 16 third-class gunboats, and 9 first-class and 4 second-class torpedo boats, mounting altogether 75 large and 92 small cannon.

**Conflict with Sweden.**—The political struggle between the Norwegian democracy and the Swedish Government, which the Swedes treat as a battle for the preservation of the Union, has been lately restricted to the question of a separate consular service. The Norwegians argue that consuls appointed and instructed by the Swedish Government do not adequately protect their maritime interests, exceeding fourfold those of Sweden. The Radicals of Norway also have demanded the creation of an independent Ministry of Foreign Affairs, alleging that it is necessary to preserve them from any wars or alliances in which Sweden may involve herself. Under the act of union the Norwegian militia is not bound to serve outside of Norwegian territory. When the dispute over foreign affairs first arose, in 1837, the Swedish Government offered to make the Ministry of Foreign Affairs responsible to both Legislatures, with a chief who might be either a Swede or a Norwegian, provided that the Norwegian troops should share the duty of the common defense of both kingdoms. This proposition was rejected, and three commissions for the revision of the Constitution have since come to naught. Sverdrup and the Radicals asserted that the exclusive Swedish control of foreign affairs is contrary to the spirit of the act of union, which they regard as a simple dynastic union and defensive alliance. The Swedish Government offered to compromise by establishing a common Ministry of Foreign Affairs, whose head might be indifferently a Swede or a Norwegian. This proposition was rejected on Jan. 14, 1893, as illusory and prejudicial to Norway's elementary right to control her foreign relations.

When the Storting met the Radicals offered a resolution asserting the right of Norway to independent action in all matters not specifically reserved in the act of union, and calling upon the Norwegian Government to proceed in accordance with the vote of June 10, 1892, to establish a separate consular service. This was passed on March 17 by 64 votes against 50 given in favor of the proposition of the Conservatives and Moderates to continue negotiations with the Swedish Government for a compromise. Premier Steen said that legal means would be found to dissolve the Union if Norway could not otherwise come by her rights, and he accused the King of having violated the law in not sanctioning a Norwegian consular service. The King went to Christiania, and, in compliance with the resolution of the Swedish Diet, again refused to sanction Norwegian consulates. The Steen Cabinet then resigned, April 22, and on April 24 the Storting suspended its sittings, precisely as was done in 1892. Stang, the Conservative leader, finally consented to form a Cabinet, which was constituted on May 1 as follows: Minister of State, Emil Stang; Minister of Finance, O. A.

Furu; Minister of Public Works, P. Nilson; Minister of Worship and Public Instruction, Prof. A. C. Bang; Minister of the Interior, J. H. P. Thorne; Minister of Justice, Prof. G. F. Hagerup; Minister of National Defense, Capt. C. W. E. B. Olsson; Minister of State in Stockholm, G. W. W. Gram. The Storthing passed a vote of want of confidence in the new ministers by 63 votes against 51. The King had first asked the President of the Storthing and other members of the majority to form a ministry, and only appealed to Stang when they refused. He was forbidden by the Constitution to dissolve the Storthing, which had nearly two years still to last. Premier Stang declared that he and his colleagues had accepted office to extricate the country from the predicament of having no Government, and not to influence the final decision of the consular question. The Storthing, which voted an annual allowance of 6,000 kronor to Steen in recognition of his patriotic services, reduced the civil list, passed a bill to remove the insignia of the Union from the Norwegian national flag, resolved to withhold supplies for the joint consular service from Jan. 1, 1895, and stopped the salaries of the ministers.

**SWITZERLAND**, a federal republic in central Europe. The Federal Assembly is composed of the Nationalrath, consisting of 147 members elected for three years by direct popular suffrage, and the Ständerath, to which each of the 22 cantons sends 2 delegates. The executive power of the federation is vested in the Federal Council, consisting of 7 members elected by the Federal Assembly for three years. The Federal Council in 1893 was composed of the following members: President and Chief of the Interior Department, Dr. K. Schenk, of Bern; Vice-President and Chief of the Military Department, E. Frey, of Basel; Foreign Affairs Department, A. Luchenal, of Geneva; Department of Justice and Police, vacant after the death of L. Ruchonnet, of Vaud; Department of Finance and Customs, W. Hauser, of Zurich; Department of Industry and Agriculture, A. Deucher, of Thurgau; Department of Posts and Railroads, J. Zemp, of Luzern; Chancellor of the Confederation, G. Ringier. Col. Emil Frey was elected on Dec. 14 President of the Confederation for 1894.

**Area and Population.**—The area of Switzerland is 15,976 square miles. The population at the census of 1888 was 2,917,754, divided into 1,417,574 males and 1,500,180 females. There were 1,716,548 Protestants, 1,183,828 Catholics, 8,069 Israelites, and 9,309 of other creeds. The German-speaking population numbered 2,083,097, while 634,613 spoke French, 155,130 Italian, 38,357 Romance, and 6,557 other tongues. The number of marriages in 1891 was 21,264; of births, 86,721; of deaths, 64,308; excess of births, 22,413. The number of emigrants in 1892 was 7,835, of whom 7,342 emigrated to the United States. The population of Zurich in 1893 was 103,271; of Geneva, 78,777; of Basel, 75,114; of Bern, the seat of government, 47,620.

**Finances.**—The receipts of the Federal Government in 1892 amounted to 92,564,995 francs, of which 36,032,738 francs were from customs, 26,231,725 francs from the post-office, 20,919,473 francs from the arsenals, powder

works, etc., 4,628,146 francs from telegraphs and telephones, 2,093,327 francs from the mint, 1,066,152 francs from capital invested, and the rest from the various departments. The total expenditure was 102,850,802 francs, of which 52,623,591 francs were for military purposes, including the manufacture of arms, powder, etc., 29,316,697 francs for the postal and telegraph service, 6,150,566 francs for financial and customs administration, 6,186,857 francs for buildings, and 3,167,719 francs for the Federal debt. The debts amounted to 64,138,423 francs, and the assets of the Government to 115,467,735 francs.

**Commerce.**—The value of the special imports of merchandise in 1892 was 869,987,000 francs, and of the domestic exports 657,649,000 francs. The imports of precious metals were 43,176,000 francs, and the exports 30,371,000 francs. The imports of silk amounted to 134,800,000 francs; of grain and flour, 105,800,000 francs; of woolen thread and cloth, 44,600,000 francs; of chemicals, 38,300,000 francs; of animals, 37,800,000 francs; of wine, 34,900,000 francs; of coal, 33,200,000 francs; of cotton, 30,200,000 francs. The exports of silk goods amounted to 135,200,000 francs; of cotton goods, 112,900,000 francs; of watches, 88,800,000 francs; of raw silk, 40,100,000 francs; of cheese, 38,500,000 francs; of spun silk, 34,600,000 francs; of machines and carriages, 21,700,000 francs; of chemical products, 18,100,000 francs.

**Communications.**—The railroads in 1892 had a length of 2,105 miles. The post-office in 1892 forwarded 77,182,000 domestic and 13,595,000 international letters, not including those received, 14,577,000 domestic and 4,297,000 international postals, and 22,573,000 domestic and 6,827,000 international circulars. The Government telegraphs in 1892 had a total length of 4,545 miles, with 12,060 miles of wire. The number of dispatches was 3,766,354, of which 1,236,992 were foreign.

**The Army.**—The effective of the army at the beginning of 1893 was 131,424 men in the Auszug and 81,485 in the Landwehr. The troops are organized in 4 army corps attached to as many districts.

**Politics and Legislation.**—The referendum has been recently extended so as to give the people the power of initiating as well as vetoing legislation. This right was used in 1893 to enact a measure that dismayed and disgusted the Radicals, who were the authors of the change in the Federal Constitution. The Society for the Prevention of Cruelty to Animals started an agitation in favor of prohibiting the Jewish manner of slaughtering animals for food by bleeding them before they are dead, and the diets of Bern, Aargau, and other cantons passed laws forbidding this form of slaughter. The Jews appealed to the Federal Government to protect their religious liberties. The cantonal governments were enjoined to expunge the laws. They heeded not the demand, and meanwhile the society called for a general referendum, and the people, whose race prejudices had been kindled by the anti-Semitic movement, caught up the cry, petitioned for a referendum with 83,159 signatures, and prohibited by a popular vote, taken on Aug. 20, the observance of the Talmudic rules for butchering. Taught by this



curious exhibition of the popular will, the Conservatives and Clericals, in the hope of checking the tide of Radical legislation, are inclined to favor one of the academic tenets of the Radical programme which the Democrats are not ready to put into practice in the present stage of political enlightenment. This is the making of the referendum obligatory, so that no decision of the Federal Assembly shall become law until it has been confirmed by a popular vote.

While the International Congress of Social Democrats was discussing at Zurich, in August, measures for the international establishment of the eight-hour day, political tactics of the Social Democracy, universal peace, the attitude to be taken by Social Democrats in case of war, the protection of working women, the national and international extension of labor unions, and its other *agenda*, a petition was circulated calling for the insertion in the Federal Constitution of an article recognizing the right to labor, which obtained 52,387 signatures. The proposed amendment is expected to secure work at sufficient wages to every Swiss citizen by Federal, cantonal, and communal legislation directed toward the shortening of hours of labor, the establishment of public and gratuitous intelligence offices, the protection of employees against undeserved dismissal, adequate support or assistance from the public funds for all who are wholly or partly thrown out of work through no fault of their own, the securing of laborers in the right to form or to join unions for the protection of their interests, and the establishment of legal rights for laborers in respect to their work and their employers. The Socialists set forth as their ultimate object the nationalization of the means of production and exchange, by the abolition of individual capitalists and the substitution of state and municipal enterprise in their stead.

An international congress of anarchists was held in Zurich in the same month as the Socialist congress, from which the anarchists were excluded. No binding platform was adopted, for that would be contrary to the anarchistic prin-

ciple, but a series of resolutions were approved, the first of which declared that revolutionary Socialists and communistic anarchists could work harmoniously together so long as they agreed in holding that all slavery and all misery were the result of the oppression and plundering of the great mass by a minority of the people, and that the oppressed must strive for the annihilation of the existing capitalistic society by all means in their power, legal or illegal, pacific or violent. The parliamentary system was denounced as an institution of the *bourgeoisie*, which only serves to codify and legalize the ideas of oppression.

In the elections for the Nationalrath, held Oct. 29, the Socialists were defeated wherever they set up an independent ticket or where they combined with the Conservatives, and were only successful where they allied themselves with the Democrats.

In December a drastic law was passed for the repression of anarchistic outrages, which provides that persons who incite others, through the press or otherwise, to commit outrages by the use of explosives or otherwise, are liable to penal servitude; persons found in possession of chemicals to be used in manufacturing explosives for criminal purposes, or aiding or abetting such manufacture, are liable to imprisonment for at least fifteen years; persons causing explosions render themselves liable to imprisonment at hard labor, ranging from ten years to a life sentence; and persons knowingly spreading incitements to commit outrages are punishable by a fine of 2,000 francs, or imprisonment, or both.

The Federal Council has proposed the introduction of a tobacco monopoly, to provide means for a scheme of Government insurance against accidents and illness. The alcohol monopoly, which insures the purity of the spirits sold in the retail trade, without limiting or regulating their sale, has had the effect of diminishing the total consumption. One tenth of the profits of the monopoly, which were about \$110,000 in 1891, must be spent in combating the causes and effects of alcoholism.

## T

**TELEPATHY.** It requires no long search to find a person who at some time has had an impression that an absent friend was in need of his presence, and has found that at the time this impression was perceived the absent one was passing through some crisis of danger or the supreme crisis of life—dissolution. The impression has varied, in different instances, from an indefinite sense of anxiety concerning the absent one to an apparition of the person, which seemed to speak. These experiences have been habitually ignored by psychologists, who have deemed the evidence concerning them either honest delusion or intentional deception. But in 1882 the Society for Psychical Research was organized in England, for the purpose of investigating this and other neglected spots in the field of psychology. The name *telepathy* was devised by the society to denote "the ability of one mind to impress or be impressed by another mind other-

wise than through the recognized channels of sense." Hence, besides the spontaneous transferences of thought alluded to above, the term includes those made designedly in "mind reading" or the parlor amusement known as the "willing game." The giver of the impression is called the "agent," the receiver of it the "percipient."

Under the title "Phantasms of the Living" two bulky volumes have been published by Messrs. Gurney, Myers, and Podmore, three members of the Society for Psychical Research, with the sanction of the council of the society. These volumes contain a large number of cases of apparently telepathic action, with comments, and much similar material is appearing in the "Proceedings" of the society. Among the experiences thus recorded are the following:

The Rev. P. H. Newnham, an English clergyman, in March, 1854, was a student keeping his

last term at the University of Oxford. He was subject to neuralgic headaches, and one evening, when he had an unusually violent one, he went into his bedroom about 9 P. M. and flung himself, without undressing, on the bed, and soon fell asleep. "I then had," he writes, "a singularly clear and vivid dream, all the incidents of which are still as clear to my memory as ever. I dreamed that I was stopping with the family of the lady who subsequently became my wife. All the younger ones had gone to bed, and I stopped chatting to the father and mother, standing up by the fireplace. Presently I bade them good-night, took my candle, and went off to bed. On arriving in the hall, I perceived that my *fiancée* had been detained downstairs, and was only then near the top of the staircase. I rushed upstairs, overtook her on the top step, and passed my two arms round her waist, under her arms, from behind. Although I was carrying my candle in my left hand when I ran upstairs, this did not, in my dream, interfere with this gesture. On this I woke, and a clock in the house struck ten almost immediately afterward. So strong was the impression of the dream that I wrote a detailed account of it next morning to my *fiancée*. Crossing my letter, not in answer to it, I received a letter from the lady in question: 'Were you thinking about me very specially last night just about ten o'clock? For, as I was going upstairs to bed, I distinctly heard your footsteps on the stairs and felt you put your arms round my waist.' The letters in question are now destroyed, but we verified the statement made therein some years later, when we read over our old letters previous to their destruction." Mrs. Newnham has also given, in writing, under the date of June 9, 1884, her recollection of the occurrence, which perfectly corroborates that of her husband. This is the only experience of the sort she had ever had ("Phantasms of the Living," i, pp. 225-227).

Here we observe that the mind of Mr. Newnham was occupied with his *fiancée*, and traced out a sequence of actions concerning her. At the same hour her mind pictured him performing these very actions. In some way the thoughts passing through his mind were caused to pass through her mind. They were not communicated by voice, letter, or telegraph, hence the inference that his mind must have been able to impress hers directly.

The foregoing case concerns a pleasurable incident, and in this respect belongs to a small class. Far more common are such as follow, which relate to injury and death. Of the 668 cases enumerated in "Phantasms of the Living," 399 occur upon the death of the agent.

Two friends, a young lady and a gentleman, had made the common agreement that whichever died first would try to visit the other. Years passed; the gentleman, Capt. W., was in New Zealand, the lady, Miss R., was in England. One night Miss R. woke with a feeling that some one was in her room. She had a bright light burning, and behind the table on which it stood she saw a misty image of a man's head and shoulders gradually form, and recognized it as the image of her friend. She got up and made a note of the date, thinking that Capt. W. must be dead. His relatives heard no news from him for an unusually long time; then a brief note came from

him which read: "Have had a severe fall off the coach; can't write; head all wrong still." On investigation, Miss R. found that it was during the time when Capt. W. was insensible from his fall that she saw him. The injury did not cause death. ("Phantasms of the Living," i, 527-528.)

The impression received by Miss R. was a visual one; those in the two that follow are auditory. In some cases both the image of the agent and the sound of his voice are perceived.

An English lady, Mrs. Evens, had been at a school in France when a girl, and formed a deep attachment for one of the principals, Mme. H. Mrs. Evens has narrated that the year after she left France, in September, 1858, she awoke one night as if she had been called. She saw nothing, but heard distinctly in the well-known and beloved voice of her friend the words, "Adieu, ma chérie" (Mme. H.'s name for her). A week afterward she heard that Mme. H. had died suddenly on the night of her experience. Many years afterward Mrs. Evens learned that the French lady was supposed to have committed suicide, and she fully believes that her friend desired to take leave of her, and, being a woman of strong will, had succeeded in transmitting her adieu. ("Phantasms of the Living," ii, pp. 690-692.)

But now admitting that persons seem to see images and hear voices, as in the foregoing narratives, what are these phenomena, it has been asked, but hallucinations such as every alienist is familiar with as the product of a morbidly stimulated brain? To this query the Society for Psychical Research replies, (1st) that the percipients in a large number of its cases never had but one such experience; (2d) that telepathic hallucinations are not merely of some human form like most of the morbid sort, but represent a person whom the percipient recognizes; (3d) that telepathic hallucinations are *veridical*—i. e., at the time when the impression is perceived the mind of the agent is being violently exercised by the approach of death or in some other way; (4th) that while one person affected with nervous disease might have a given hallucination, the same thing would not be likely to appear to another, whereas telepathic hallucinations have been perceived by more than one percipient at the same moment. The following will serve as a sample of these "collective" cases. The impression received was auditory, but other cases are on record in which it was visual: In 1854 there was a family named Focke, living in Düsseldorf, and the eldest daughter, Anna, had sailed for Batavia, island of Java, as companion in the family of a Dutch Government official. One evening soon afterward, when Mrs. Focke, with the rest of her family, was at tea, they all heard a loud cry of "Mother!" outside the window. They all recognized at once the voice of Anna, and rushed to the window, but saw nothing. Scarcely had they taken their seats again when a most agonizing shriek was heard, and twice "Mother! Mother!" was called in the same voice. In a short time news came that on that very evening the vessel on which Miss Focke had sailed was lost with all on board.

There are several reasons why the Society for Psychical Research regards as a phantasm of



the living rather than an apparition of the dead the impression received from an agent at about the time of his dissolution. One is that precisely similar impressions are transferred from persons who do not die at the time. It has been found that telepathic action of the latter sort can be produced experimentally, and under the auspices of the society a large number of such experiments have been made. The tests consisted in the percipient naming articles or playing cards thought of by the agent, reproducing drawings, answering questions by the planchette, etc. The tests have been far from uniformly successful, but the proportion of successes is regarded as encouraging. Spiritualists claim that even in thought transference between two living persons the thought is conveyed by the spirit of a deceased person.

An important part of the evidence for the reality of thought transference is the fact that the experiences recorded have occurred at the time when the mind of the agent was violently affected in one way or another. The attempt has been made to explain this away as mere coincidence, but the authors of "Phantasms of the Living" have presented calculations to show that the probability of such coincidences occurring is almost infinitely small. It is evident that if the percipient were in the habit of seeing a vision of some absent friend, say, once a week, the fact that the agent died at the time when one of them was seen might properly be taken as a coincidence of no moment, but where, as has often occurred, such a phantasm was seen only once in the whole life of the percipient, it can hardly be explained away in this manner. Why we are not all informed by telepathy of the death of friends can not be known until more is learned of the causes that make one mind different from another. But there is no evidence for such agency on the part of the deceased that can be admitted in a scientific inquiry, such as the society is conducting. Great care has been taken by the society to verify every instance of telepathy that it has published. Independent written accounts have been obtained from every accessible person who knew the facts in each case, any letters, diaries, or other documentary evidence obtainable have been examined by a representative of the society, and in death cases the date of the death has been ascertained from a public record. The most valuable sort of evidence—a written record of the percipient's experience made before he could receive news from the agent—has been seldom procurable. Heretofore few persons have known the desirability of such records, but as the work of the society becomes more widely known it is expected that cases with incontestable documentary evidence will be forthcoming. Until these are obtained, the few conclusions that the investigators in this field have allowed themselves to make are regarded as merely tentative.

**TENNESSEE**, a Southern State, admitted to the Union June 1, 1796. The population, according to each decennial census since its admission, was 105,602 in 1800; 261,727 in 1810; 422,771 in 1820; 681,904 in 1830; 829,210 in 1840; 1,002,717 in 1850; 1,109,801 in 1860; 1,258,520 in 1870; 1,542,359 in 1880; and 1,767,518 in 1890. Capital, Nashville.

**Government.**—The following were the State officers during the year: Governor, Peter Turney; Secretary of State, William S. Morgan; Treasurer, Edward B. Craig; Comptroller, James A. Harris; Commissioner of Agriculture, Statistics, and Mines, T. F. P. Allison; Superintendent of Public Instruction, Frank M. Smith; Adjutant-General, John A. Fite; Attorney-General, G. W. Pickle—all Democrats. Chief Justice of the Supreme Court, Benjamin J. Lea; Associate Justices, W. C. Caldwell, D. L. Snodgrass, John S. Wilkes, W. K. McAlister. After Chief-Justice Turney resigned, to take the office of Governor, Justice Lurton was chosen to his place, and the vacancy was filled by the appointment of John S. Wilkes. When Judge H. E. Jackson was appointed to the United States Supreme Court, Judge Lurton was appointed to take his place as judge of the United States circuit court. Judge Lea was chosen Chief Justice, and W. K. McAlister was appointed to the vacancy.

**Finances.**—Some excitement was caused after the failure of the Commercial National Bank by uncertainty regarding State bonds to a large amount, which were rumored to have been under control of the bank, and believed to have been used to further schemes of private speculation. In October, 1892, 4-per-cent. bonds amounting, in round numbers, to \$1,500,000, were prepared, with which to take up the outstanding 5s, 5½s, and 6s.

Subsequently the new funding board decided to cancel \$1,000,000 of these bonds which had not been sold, stamping on each the words: "Canceled by order of the Funding Board April 18, 1893, the act authorizing the issuance of this bond having been repealed before its negotiation." The act of repeal, passed in April, empowered the Funding Board to issue two series of bonds; one, \$600,000 in amount, is the Penitentiary series, and the other, more than \$1,000,000, is the redemption series, and is to redeem the funded 5-, 5½-, and 6-per-cent. bonds. In May the Supreme Court rendered a decision as to the validity of the new bonds, declaring them to be constitutional.

The mortgage indebtedness on property in the State appears, by a United States census bulletin, to average \$23 to the head of population, and its ratio to the assessed value of real estate is 8.67. The amount of deposits in the savings banks at the close of 1892 was \$1,292,913.

**Banks.**—In the period from Jan. 1 to Sept. 1, 16 Tennessee banks failed. Among these was the Commercial National Bank of Nashville. Connected with it was the failure of the cotton firm of Dobbins & Dazey. An investigation by Bank-Commissioner J. M. McKnight resulted in the arrest and indictment of G. F. Dazey, of the firm, and Frank Porterfield, cashier of the bank, on a charge of conspiring to embezzle. The Mechanics' Savings Bank and Trust Company of Nashville made an assignment April 17, the assets being placed at about \$200,000 nominal, and the liabilities at \$150,000. The cashier, who confessed himself a defaulter to the extent of \$40,000, died within a few days.

**Charities.**—The Eastern Hospital for the Insane had 290 patients in February, and the Western Hospital 319. The Central Hospital for the Insane has been partly rebuilt since the

fire of 1891. The Industrial School, the schools for the blind, deaf and dumb, and the Confederate Soldiers' Home were all reported in good condition by an investigating committee of the Legislature.

**Labor Troubles.**—It was hoped that the action of the courts in Anderson County on the disturbances of 1892 in eastern Tennessee would prevent any further demonstrations on the part of the miners. But lawlessness broke out at Tracy City in April. Rumors were current that a general strike was organizing in the coal region. Fort Anderson was strengthened by the erection of heavy redoubts for artillery. The timber, which afforded such safe cover for sharpshooters, was cut away from the hillsides, making it impossible to come within range of the fortifications unobserved.

Fighting began in the evening of April 19, when a body of miners from 75 to 100 strong went to the stockade and sent 3 of their number to the gate with a demand that the convicts be released. On the refusal of the deputy, the leader said that he and his companions represented 700 miners, and that they had the dynamite and the arms to release the convicts by force. Then he held up in his hand a dynamite cartridge, such as is used in blasting away slate in the mines, and was on the eve of making a threatening movement, when the deputy warden and the sheriff seized him, and dragging him inside the gate, closed it. As soon as their companion was seized, and before the guards could get their hands on them, the other two walked rapidly away, brandishing their arms as they went. The sheriff ordered the guards to fire upon them, but for some reason this was not done. The captured miner had hardly been taken inside the little room near the gate when the guards heard the patter of shots from a score of weapons. By a preconcerted signal they came from every side of the stockade. The miners had closed in on the stockade, and were actually thrusting the muzzles of their guns through the portholes. In an instant the guards were at their posts, and then the salute from the outside was answered by a volley from within. The miners had the advantage, as the lights on the inside enabled them to see every movement of the beleaguered guards. But the latter took to the upper portholes and then the battle raged furiously for a few minutes. Fully 500 shots were fired. Deputy Shriver had climbed into the second story of the stockade, where he could look down on the besiegers. He had hardly reached the room before a miner saw him in the lamplight and aimed at him. Shriver saw him, and they fired almost simultaneously. Shriver was shot twice in the right side of the face, while his adversary fell dead in his tracks. In the meantime the captured leader had been released by Sheriff Sanders and the guards upon a promise that he would go out and stop the firing. This he did not do, and after his release Guard S. A. Walden received a full charge of 7 shots from a gun thrust through one of the portholes. Five miners were wounded in the fight. The besiegers broke for a hill overlooking the stockade, and fired for some time longer, but everything was quiet by morning. The State troops, under the Adjutant-General, were sent on the

next day. A mass meeting of citizens was held soon afterward, at which speeches were made condemning the action of the rioters, but deprecating the infliction of any punishment. Resolutions were offered, one of which asked mercy for the rioters and expressed sympathy for them. The Adjutant-General, who had come to the meeting by invitation, told the citizens they were making a great mistake. He said the Governor was not only going to make every effort to capture every one of the malefactors, but that he was going to punish them. He advised them to withdraw that clause, as it would prejudice their case, and said that he himself would put down lawlessness in the State at any cost, and that they must obey the law or take the consequences. The clause was then withdrawn.

Later in the year trouble was made by rioters at Coal Creek, and the militia was sent there. The leader was tried and sentenced to five years' imprisonment for rioting and two years for interfering with convicts.

**Sunday Laws.**—A bill was introduced into the Legislature, but not passed, to relieve the Seventh-Day Adventists from prosecution for working on Sunday, after having kept their Sabbath the day before. The prosecutions were renewed in the cases of three men, one fifty-five and another sixty-two years of age, who refused to pay their fine, declaring that it was unjust and that they were liable to be arrested again as soon as they were released. They were consequently kept at work with criminals at shoveling on the highway until they had worked out their fine.

**Burial Place of President Polk.**—The remains of President James K. Polk and his wife were removed, Sept. 19, from the tomb at Polk Place, in Nashville, the family residence, and reinterred in the State Capitol grounds. After the death of Mrs. Polk suit was brought in the Chancery Court, by descendants of President Polk, to set aside the will of the President and divide Polk Place among them. The Chancellor decided the President's will was void, inasmuch as it provided for perpetuity by declaring that the property should forever remain in the possession of the Polk family, passing from time to time to the worthiest bearing the name of Polk.

**The Virginia Boundary.**—The State of Virginia filed a bill in the Supreme Court of the United States some time since against the State of Tennessee, setting forth that the boundary line agreed upon in 1803 was not the line in the original charter, and that the agreement about the line in 1803 was void, being a compact between two States, which the Constitution forbids without the consent of Congress.

This was met by Tennessee with these arguments: That a mere agreement between two States as to where the line was was not a compact; that if it was a compact, it was good between the States until Congress dissented, and that Virginia was estopped; that if there had been no agreement and no line made by the States but an Indian or a buffalo trail which the two States had treated as the line—merely acquiesced in it for more than eighty years—such acquiescence was binding on both States. In addition to these questions, Virginia presented the bill in a second respect, that the line was ob-



seure, and the Court should have the line ascertained and marked. This was met by showing that the marks made in 1803 were still visible, that the line was rerun and remarked in 1856, and that the line was not obscure.

The decision was in favor of Tennessee on all the points. The territory involved in the dispute is about 700 square miles, being from 3 to 6 miles wide and 113 miles long. It contains the towns of Bristol and Cumberland Gap, and it involves a serious question of back taxes. In 1802 John Sevier, Tennessee's first Governor, with gentlemen from Virginia, ran the line which is now finally established as the true line.

**Legislative Session.**—The Legislature convened Jan. 2, and adjourned April 11. On joint ballot there were 94 Democrats, 32 Republicans, and 6 Independent Democrats or Populists. William C. Dismukes was chosen Speaker of the Senate, and Ralph Davis of the House.

On Feb. 25 a court decision was rendered in Memphis disbaring Speaker Davis from the courts of the State. The charge on which the action was taken was that Mr. Davis had collected \$2,250 from a client for a purpose requiring only \$1,000. On complaint of the client and investigation, the attorney had been disbarred. Meantime he had sued a newspaper in which an account of the transaction was published for \$50,000, and procured an indictment of the editors for criminal libel. It was desired that in view of this action Mr. Davis should resign the speakership of the House. Soon after the House assembled, March 8, Mr. Davis called Mr. Truesdale to the chair and made a statement of his position in the matter. He declined to resign the chair. A resolution was at once adopted asking him to resign, but he still refused, and then, after considerable discussion, a resolution was adopted, by a vote of 72 to 9, expelling him from the chair. Hon. Julius A. Truesdale was then elected, receiving every vote in the House. Later in March a charge was made against the ex-Speaker in the House, that he had caused to be brought in by another member a bill for the passage of which money was to be paid. A committee of investigation was appointed, who reported that the charges had been sustained; that Mr. Davis, while Speaker of the House, advised those interested in the bill to pay contingent fees, and offered to select an attorney to whom money was to be sent for lobbying and for corrupt purposes. After a stormy debate on a motion to decline to receive the report, the motion was withdrawn and the report was received. It was then voted that it be expunged from the journal by 40 to 32, 27 not voting.

The Governor-elect was seriously ill in January and unable to take the journey to Nashville. The Legislature therefore passed a joint resolution that the oath be administered to him at his home, Wolf's Crag, near Winchester; and the Chief Justice inducted him into the office there, Jan. 16, in the presence of the justices of the Supreme Court, committees of the Legislature, State officials, and representatives of the press. Gov. Turney sent his first message to the Legislature Jan. 31. He advised the passage of the "Intermediate Court" bill in order to relieve the Supreme Court and keep up with increasing litigation, calling attention to the fact that while

that court in Tennessee averaged about 1,250 cases a year, the average in the other States was about 400. He recommended that the salary of the supreme judges be raised to at least \$4,000.

Among the other recommendations were: Amendment of the registration law so that there should be but one registration for each year, at which a certificate for each election to occur during the year should be issued to the voter, who will be required to surrender such of the certificates as relates to the election in which he offers his ballot; provision for special elections; and amendments to the road law. In a subsequent message he recommended the calling of a constitutional convention.

William B. Bate was re-elected, Jan. 17, to the United States Senate. A joint resolution was adopted in favor of the appointment of a commission to settle the claim of the Tennessee Coal and Iron Company in case settlement should be made within ninety days; otherwise the pending suits were to be prosecuted to the end. An important change was made in the Penitentiary system. The inadequacy of existing prison accommodations and the recent troubles arising from the convict-lease system made some radical action imperative. A new prison will be built and the lease system abandoned.

The convicts are to be divided into three classes. There shall be but one prisoner confined in a cell, and the men and women are to be kept in different portions of the prison. The commissioners are to make contracts for the building or extension of railroads to the prison to insure the shipment of the products of the mines or prison, but such roads or extensions are to be built without cost to the State. Under the provisions of another section, convicts can work out the costs of their arrest and conviction on a basis of 40 cents a day.

The State is to issue \$600,000 of bonds to provide the funds for carrying out the provisions of the bill.

An act was passed entitled "An Act to authorize and provide for the preparation and issuance to the banks and banking associations of this State circulating notes, to fully protect the same, and to provide for State supervision and examination of all banks accepting the provisions of this act."

A committee was appointed to investigate the Comptroller's and Treasurer's offices.

Much of the time was given to a new revenue bill, which makes some radical changes in the privilege taxes. Following are some of the important changes made by the provisions of the law: A privilege tax of \$50,000 is to be levied on dealers in futures; in cities, towns, and taxing districts of over 5,000, photographers will be each charged \$75 per annum, an increase of \$25; national banks are no longer exempted from the tax on other banking associations; brewers are required to pay \$150 (this tax applies to local agents for breweries selling or delivering beer to the trade); architects and mining engineers must pay \$25; merry-go-rounds are taxed \$10 to \$30; laundries in the large cities, \$100; shippers of mineral waters, \$5; peddlers of patented articles, if on foot, must pay in each county \$15; if with horse or vehicle, each county \$30; if with more than one

horse, for each additional horse in each county, \$12; dealers in sewing machines have their tax raised \$80 in the larger counties, while in counties of 30,000 to 50,000 the price only goes up \$10. In all counties under 30,000 the figures will be \$10; the tax on skating rinks is reduced \$100 in the large towns; the tax on street-car companies is reduced \$5; on turnpikes each toll gate pays \$12, reduced from \$25; express companies must pay \$500 to \$1,000 more; brokers' taxes are lower—\$200 instead of \$300 in places of 8,000 or more; butchers in cities of 20,000 or over pay \$50; 10,000 to 20,000, \$30; 5,000 to 10,000, \$20; 1,000 to 5,000, \$10; wholesale butchers or dealers (cold-storage companies only) \$300, an increase of \$50. In towns of less than 1,000, and also all other butchers, \$5; cemeteries conducted by individuals or companies for profit pay from \$5 to \$25; commercial and mercantile agencies pay \$50 more than before in towns of 20,000 or over, and cotton commission merchants \$15 more; foreign coal oil and illuminating oil companies must pay \$500 per annum in places of 50,000 or over, and proportionate sums in smaller places; dealers in county certificates or warrants or city warrants, not paying taxes as bankers or brokers, pay \$100 a year in places of 50,000 or over; all parties, banking associations, or brokers, or their agents, buying or attempting to buy the fees of any officer or witness accruing in any of the courts of the State, will pay tax as follows: in counties of 50,000 or over, \$400; 40,000 to 50,000, \$300; 20,000 to 40,000, \$200; and less than 20,000, \$25 (heretofore there was no tax on these men); the tax on gas companies in the larger places is cut from \$700 to \$500; each agent of mutual-assessment companies—fire, accident, or life—in each county in which they do business must pay to the county clerk a yearly tax of \$100 (this is a new privilege, and is leveled at mutual-benefit associations); there is no change in the tax on liquor dealers, wholesale or retail, but dealers selling liquors in quantities less than 5 gallons are to be regarded as retailers (heretofore 1 quart has been the limit); each person, corporation, firm, or company engaged in selling pools on horse races must pay \$250 per annum (this is a new privilege); bookmakers on horse races, each agent, firm, person, or corporation, or firms in each county, must pay \$50; real-estate dealers have their tax reduced one half.

Two bills affecting the militia were passed. One appropriates \$45,000 to equip the State Guard, but under ordinary circumstances only \$15,000 of it can be used in one year. It is intended to buy clothing and outfits, so that the Guard may be prepared to take the field on short notice. There are 30 companies in the State, or about 1,500 men. These companies have almost no equipment at present, and every company must be supplied with more or less furnishings. The other is the insurrection bill. It gives the Governor almost unlimited power in times of rebellion or insurrection to call out the military and take such other means as are within reach to quell it, and to use the State's money to this end as far as necessary to serve the welfare of the State.

A resolution was adopted favoring an amendment to the Constitution, and a bill passed pro-

viding that it shall be voted upon at the next regular election for members of the Legislature, in November, 1894. The section of the Constitution proposed to be amended is as follows, the words quoted being the amendments:

ARTICLE XI, SECTION 13.—The General Assembly shall have power to enact laws for the protection and preservation of game and fish within the State; "laws for the construction, maintenance, working, and laying out of public roads, and laws defining and establishing legal fences, or abolishing all fences; also laws regulating elections in this State," and such laws may be enacted for, applied and enforced in particular counties or geographical districts designated by the General Assembly.

A bill was passed depriving State officers of the fees heretofore allowed by law, and fixing their salaries as follow: Governor, \$4,000; Secretary of State, \$3,000; Treasurer and Comptroller, \$3,500 each. The office of private secretary to the Governor was separated from that of Adjutant-General, and a special office of private secretary was created, the bill providing for a salary of \$1,200. The Adjutant-General's salary was placed at \$1,800.

An appropriation of \$12,000 was made for improvements on the Capitol building.

The *per capita* appropriation for patients in the insane hospitals was raised from \$145 to \$155.

Physiology and hygiene are to be studied in the public schools, with special reference to the effect on the human system of alcoholic stimulants and narcotics.

Other acts were these:

Enabling the Commissioner of Agriculture and Statistics to secure statistics from manufacturers and common carriers.

Creating a new chancery division, to be called the twelfth.

Allowing the building of a bridge across the Tennessee at Chattanooga, and authorizing the issuing of \$150,000 of bonds for the purpose by Hamilton County.

Compelling insurance companies to pay the full amount of all policies.

Increasing the sum to be used for expenses of State normal institutes to \$1,500.

Raising the annual appropriation for the State Normal College from \$10,000 to \$15,000.

Appropriating \$7,500 for an industrial building and gymnasium at the Deaf-Mute School in Knoxville.

Raising the appropriation to the School for the Blind from \$37,000 to \$39,000.

Authorizing the creation by counties of the office of commissioner of fish.

Compelling building and loan associations to have annual examinations made by an agent of the State at their own expense.

Allowing Nashville to issue \$150,000 in bonds to build approaches to the new union depot.

Allowing counties to build reformatories.

To prevent blacklisting or publishing of discharged employees.

Charges having been made against Judge Julius J. DuBose, judge of the criminal court of Shelby County, in a memorial to the House signed by 3,000 citizens, asking that the court of the county be abolished, or some other means taken of deposing Judge DuBose, the House adopted a resolution of impeachment, by a vote of 84 to 4. There were 12 articles and 36 specific charges. The House appointed a committee to prosecute the case before the Senate, and the Senate met May 10 as a court of impeachment. The hear-



ing of evidence was continued through two weeks, and the arguments occupied a week. The vote was reached June 2. The Senate was unanimously in favor of acquittal on 7 charges, on 18 charges a majority voted not guilty, on 4 the vote was a tie, on 5 a majority said guilty, but on only 2 charges did the necessary two thirds say guilty. These were that the judge had set aside the writ of *habeas corpus* by instructing a sheriff to hold a prisoner, no matter what the decision of Judge Estes might be, and trying by threats to compel a wife to relinquish to a trustee \$10,000 in property that the circuit court had decreed to her in divorce proceedings.

A resolution was then unanimously adopted, formally declaring Judge DuBose convicted of misdemeanor in office and forever barring him from holding office in the State. The costs, amounting to about \$9,000, were charged to the defendant.

**TEXAS**, a Southern State, admitted to the Union Dec. 29, 1845; area, 265,780 square miles; population, according to each decennial census since admission, 212,592 in 1850; 604,215 in 1860; 818,759 in 1870; 1,591,749 in 1880; and 2,235,523 in 1890. Capital, Austin.

**Government.**—The following were the State officers during the year: Governor, James S. Hogg, Democrat; Lieutenant-Governor, M. M. Crane; Secretary of State, George W. Smith; Treasurer, W. B. Wortham; Comptroller, John D. McCall; Attorney-General, Charles A. Culbertson; Superintendent of Public Instruction, J. M. Carlisle; Commissioner of the General Land Office, W. L. McGaughey; Commissioner of Insurance, John E. Hollingsworth; Railroad Commissioners, John H. Reagan, L. L. Foster, W. P. McLean; Chief Justice of the Supreme Court, John W. Stayton; Associate Justices, Reuben R. Gaines and John L. Henry, who resigned in May, and was succeeded by T. J. Brown, appointed by the Governor on May 31. Court of Criminal Appeals—Presiding Judge, James M. Hurt; Judges, W. L. Davidson, E. J. Simkins. Court of Civil Appeals, First District—Presiding Judge, C. C. Garrett; Judges, F. A. Williams, H. Clay Pleasants; Second District—Presiding Judge, B. D. Tarlton; Judges, H. O. Head, J. W. Stephens; Third District—Presiding Judge, H. C. Fisher; Judges, W. M. Key, W. E. Colard; Fourth District—Presiding Judge, J. H. James; Judges, W. S. Fly, H. H. Neill; Fifth District—Presiding Judge, Henry W. Lightfoot; Judges, N. W. Finley, Anson Rainey. The Fourth and Fifth Districts were created by the Legislature this year, and the judges therein were appointed by the Governor in May.

**County Debts.**—On Jan. 1, 1893, the bonded debt of Texas counties was \$8,411,541.93 and the floating debt \$608,944. One year previous the figures were \$7,143,258.83 and \$511,519.32 respectively.

**Legislative Session.**—The Legislature convened at Austin on Jan. 10 and adjourned on May 9. On Jan. 24 Hon. Roger Q. Mills, Democrat, was re-elected United States Senator for the full term of six years from March 3 by the following vote: Senate—Mills 29, Thomas L. Nugent, Populist, 1; House—Mills 114, Nugent 8, N. W. Cuney, Republican, 1. For the purpose of refunding that part of the State debt

already payable the Governor was authorized to issue 4-per-cent. bonds to the amount of \$334,500, payable in forty years, but redeemable at the option of the State after five years. such bonds to be substituted for the past-due State bonds held by special funds so far as practicable, and the remainder to be sold. Authority was also given for the issue of nonnegotiable 5-per-cent. bonds to the amount of \$152,000, payable to the State University. These issues provide for the retirement of the following past-due bonds: \$200,000 of 6 per cents., act of 1885; \$25,500 of 6 per cents., act of May, 1871; and \$261,000 of 7 per cents., act of December, 1871.

An important result of the session was the passage of an act limiting the issue of stocks and bonds by railroads. It is provided that the Railroad Commission shall report to the Secretary of State the value of each railroad in the State, including all its franchises and property, and the value so fixed shall be the limit to which bonds or other indebtedness secured by lien or mortgage shall be issued by the company. The commission may from time to time modify its report of value to promote the public interest. Every judicial or other sale of any railroad that shall have the effect to discharge the property so sold from liability in the hands of purchasers for claims for damages, unsecured debts, or junior mortgages, shall have the effect to cancel all claims of every stockholder therein to any share in the stock of such railroad, and it shall not be lawful for the purchasers or for any railroad company organized hereafter to operate that railroad, to issue any stock in lieu of the old stock, or to allow any compensation therefor, nor shall any part of the debt to satisfy which such sale was made be continued or held as a claim or lien on said property. Provision is made in case a company building a railroad desires to issue bonds in advance of its completion. The value of stock issued shall in no event exceed the value of the railroad property, fixed as above stated, and the manner of its issue is strictly regulated.

An act designed to destroy large holdings of agricultural land by corporations provides that every private corporation whose principal business is the acquisition or ownership of land shall within fifteen years make an actual *bona fide* sale of all the lands now held by it, and that no such corporation shall hereafter acquire land within the State. All land not so disposed of within the period shall escheat to the State. But these provisions shall not apply to lands within incorporated towns, cities, or villages, or to land within 2 miles of the limits thereof. All other corporations are restricted to the ownership, outside of these limits, of so much land only as is necessary for their business.

A State live-stock sanitary commission of 3 members was established, and its duties in protecting and preserving the health of live stock were defined.

An "antiscalper" law requires every ticket-agent in the State to obtain a certificate of authority from the company or companies whose agent he purports to be, and to display it conspicuously in his office. All persons not having such authority and selling tickets are subject to a heavy fine.

Individuals, corporations, and firms were prohibited from employing in the State any armed force of detectives or other persons not residents thereof.

The public-school law was amended in matters of detail. The State was divided into 5 supreme judicial districts instead of 3, as previously arranged, and a court of civil appeals was established in each of the 2 new districts.

The Penitentiary board was authorized to purchase farms on which convicts may be employed on the State's account, and to borrow the necessary money from the permanent school fund, the expenditure for this purpose being limited to \$300,000.

Life-insurance companies and life and accident insurance companies were made liable for an annual tax of  $1\frac{1}{2}$  per cent. on their gross premium receipts in the State; and fire, marine, health, live-stock, guarantee, and accident insurance companies were taxed one half of one per cent. on such receipts. Each telephone company was required to pay an annual tax of 25 cents for every one of its telephones in the State. An annual franchise tax of \$10 was levied on each private domestic corporation and on each foreign corporation having permission to do business in the State.

Two amendments to the Constitution were proposed, and provision was made for their submission to the people in November, 1894. One authorizes the establishment of a home for disabled Confederate soldiers and sailors; the other provides for the election of railroad commissioners by the people. Other acts of the session were as follow:

Authorizing minors to bring suit by next friend.

Making the first Monday in September a legal holiday, to be called Labor Day.

Providing for the distribution of the direct tax refunded to the State under an act of the Fifty-first Congress.

To authorize the rescue of girls and boys under the age of twelve years from the custody of improper persons.

To provide for determining the rights of nonresidents, persons unknown, and transient persons to property in the State.

Authorizing the Governor to call to his aid two persons, who shall perform such duties as he may direct in disposing of applications for pardon, and who shall be known as a board of pardon advisers.

To punish persons enticing minors away from the custody of their parents or guardians, and to give certain benevolent institutions and orphans' homes the rights of guardians over minors surrendered to them.

Appropriating \$10,000 for the relief of the city of Cisco and other portions of Eastland County which were visited by a tornado on April 28, 1893.

To define who are and who are not fellow-servants, and to prohibit contracts between employer and employee based upon the contingency of the injury or death of the employee, and limiting the liability of the employer for damages.

Under the law authorizing the Governor to veto separate sections of appropriation bills, Gov. Hogg struck off appropriations made at this session aggregating about \$350,000. He also vetoed an act authorizing the superintendent of the Penitentiary to receive from the United States the bounty that might be claimed upon sugar raised on the Penitentiary farms. His objections were based upon the character of the

Federal law authorizing the payment of this bounty.

**Impeachment Trial.**—On April 6 a committee appointed to investigate charges made against Land-Commissioner W. L. McGaughey made a report to the Lower House of the Legislature recommending his impeachment, and on the following day a committee of ten was appointed to prepare articles of impeachment. Under this authority a list of 25 articles was presented, in which the commissioner was charged with selling school lands to persons not actual settlers thereon and at prices below their real value, with willfully misconstruing the provisions of law respecting sales of school lands, with colluding with purchasers, with allowing unauthorized persons to have access to the files of his office, with refusing to renew leases on application, and with other grave misdemeanors. A demurrer and an answer to these charges were filed by the commissioner on April 20. The demurrer was first argued, and on April 28 was sustained in respect to 10 of the articles. On the remaining 15 charges a trial was had before the bar of the Senate, lasting until May 5, when the defendant was acquitted upon every article, not more than 8 votes being cast against him on any article.

**Penitentiary.**—On Oct. 1 the number of State convicts was 3,763, an increase of 188 over the figures for Oct. 1, 1892. Of this number, 971 were on contract farms, 258 on share farms, 192 on the Harlem State farm, 173 on railroads, 1,135 at the Penitentiary at Rusk, and 1,034 at the Huntsville Penitentiary. During the year the railroads dispensed with 415 convicts, 190 were added to the farm labor, and 419 were added to the population at Rusk and Huntsville.

**Agriculture.**—The official statistics of agriculture for 1892 include the following:

PRODUCT.	Acres.	Value.
Cotton.....	4,520,310	\$77,270,325
Corn.....	3,166,353	28,429,125
Wheat.....	442,337	5,244,803
Oats.....	473,703	5,182,626
Millet.....	35,955	425,792
Sweet potatoes.....	29,928	1,147,658
Irish potatoes.....	8,050	497,641
Hay (cultivated).....	30,233	390,494
Hay (prairie).....	179,163	1,503,764
Hay (sorghum).....	41,180	587,019
Sugar-cane, sirup, and sugar.....	16,015	981,077
Sorghum sirup.....	18,519	427,406
Melons.....	16,243	576,032
Peaches.....	51,750	1,289,551
Apples.....	11,428	289,856

**Manufactures.**—The number of factories in the State in 1892 was 6,657; the value of materials used was \$21,927,471; the value of the finished product was \$36,950,864; and the number of operatives 37,763.

**Timber.**—There are 25,000,000 acres of timber land in the State. Ten counties produce the long-leaved pine, namely: Angelina, Hardin, Jasper, Nacogdoches, Newton, Polk, Sabine, San Augustine, Trinity, and Tyler.

**The Austin Dam.**—On May 2, 1893, the last stone was laid completing a great dam across the Colorado river at Austin (see "Annual Cyclopædia" for 1892, pp. 252-254). The lake formed by the dam is nearly 30 miles long and nearly a quarter of a mile wide. It is estimated to con-



tain 2,800,000,000 cubic feet of water, or 21,000,000,000 gallons. The estimated available horse power is 14,500 for ten hours a day. The dam stands in the channel of a river, which has 40,000 square miles of watershed, and will have floods of 250,000 cubic feet of water per second to pass from crest to base. No other dam in existence has to pass a volume of water in flood even approximating this through so great a height. The primary object of the work was to furnish the city with water and with power for lighting.

**Lynch Law.**—On Feb. 1, at Paris, a negro named Henry Smith, charged with ravishing and murdering a three-year-old child, was lynched by a mob of citizens under circumstances of extreme cruelty. Such were the revolting features of the case that Gov. Hogg, on Feb. 6, made it the subject of a special message to the Legislature, in which he says:

Brushing away sentiment, which should never accompany punishment for crime, the public murder committed at Paris is a disgrace to this State. Its atrocity, inhumanity, and sickening effect upon the people at large can not be obscured by reference to the savage act of the culprit himself in brutally taking the life of an innocent child. For his deed the death penalty awaited him under the law. The imputation that he could not have been legally executed any court in this State is a slander upon the integrity of every citizen. To contend that his executioners, who publicly murdered him, can either be indicted or tried in the county where that crime was committed, is a pretense and a mockery. So the condition exists in our State that, while one man may be convicted for murder, a hundred men who publicly commit murder can not be. The laws, therefore, without further legislation, may be held in defiance in any community where the forces are strong enough to overawe the local officers and set aside the legal machinery of justice. Our Constitution is not so hidebound that this condition must continue. It is in the power of the Legislature to adopt suitable measures to either prevent mob law or to bring to punishment all murderous executioners.

Although the Governor made several recommendations designed to prevent such scenes in the future, the Legislature failed to enact any law pursuant thereto.

**THEOSOPHY**, "the science of divine wisdom." Its disciples are supposed to be doing all they can to attain a high condition of spirit. They believe not only in a spiritual existence after death, but in numberless flesh-and-blood lives on this and other planets. They believe in the reincarnation of spirit, or "re-embodiment," as they call it. "The evolution of man is not a process carried out on this planet alone. It is a result to which many worlds, in different conditions of material and spiritual development, have contributed, and the earth is merely one link in a mighty chain of worlds. The system of worlds is a circuit round which all individual spiritual entities must pass, and that passage constitutes the evolution of man. The higher evolution will be accomplished by our progress through the successive worlds of the system, and in higher forms we shall return to this earth again and again." Another authority declares that "theosophy is religion, science, and philosophy, and these three at once: a religion because it aims to know, to become, and therefore to worship the truth; a science because it examines by strict analysis all processes in nature, in order to dis-

cover that which is; a philosophy because, by logical synthesis from the facts of nature discovered by science, it deduces the laws that underlie phenomena and govern the universe. Theosophy is therefore the work of a lifetime—nay, of many lives or incarnations."

The movement began in the United States in 1875, when the society was formed in New York city by Madame Helene Petrowsky Blavatsky and Col. Oleott. At that time there were not a dozen adherents to be found, while now the membership of the organization is over 100,000. Its conception was due to Madame Blavatsky, who believed that the interests of religion and science would be promoted by the revival of Sanskrit, Pali, Zend, and other ancient literatures, in which the sages and initiators had preserved for the use of mankind truths of the highest value. It was deemed best to organize a society whose first object should be to form the nucleus of a universal brotherhood of humanity, without distinction of race, creed, sex, or color. Once formed, the society was to promote the study of Aryan and other Eastern literatures, religions, and sciences. The third object was the investigation of the unexplained laws of nature and the psychical powers of man. A few years ago Madame Blavatsky wrote the book "Isis Unveiled." Having organized the society and aroused public interest to some extent by the apparent exhibition of occult power, she sailed for India, accompanied by several followers. In 1884 the society had grown to such proportions that the founders were invited to visit England, where a branch society had been formed, with A. P. Sinnett, author of "The Occult World," as president. Mr. Sinnett was editing an English paper in Allahabad when Madame Blavatsky and Col. Oleott went there, in 1879, to organize a branch society. Madame Blavatsky made friends and enemies everywhere she appeared by denunciations of spiritualism. She had a habit of making startling predictions, and usually in such an ironical manner that it was almost impossible to decide whether she meant what she said or was merely trying to make others commit themselves. She could produce a sound like a chime of bells, low and sweet, but perfectly clear, and this was heard under various conditions. She would know what was going on in other parts of the building, and one day reproached one of her party for something that was said in the park, a mile from the castle. Her hostess said that Madame Blavatsky had not left her room all the afternoon. One of her visitors wrote thus: "I remember an occasion when I excused myself to go to my room to write. In the evening, when we all assembled in the drawing-room, I was astonished to have her say to me: 'You have not written to-day; I saw you idling the time away.' It was true that I had sat at the large window the entire afternoon, looking out upon the hills, watching the clouds, and pondering over many things. Madame Blavatsky had been much in my thoughts, as I considered the question—a grave one to me—of remaining longer with the party or of returning to England. She knew by some means what had been agitating my mind, and said to me as we passed down the stairs: 'You will go back with me?' I said to myself that I would not; but

events so shaped themselves that I did travel back to London in her company. With no ambition, no home, no home ties, no strong attachment, she seemed alone in the world, and was in many respects the most indifferent person I ever knew."

Besides the "Isis Unveiled," the "Sacred Doctrine," and other works by Madame Blavatsky, the modern literature of theosophy includes "The Occult World" and other works by Mr. Sinnett. A branch of the Theosophists in the United States is led by Prof. Elliott Coues, of the Smithsonian Institution. In a lecture delivered in the city of New York in 1889, Prof. Coues spoke of modern miracles. He condemned the commercial kind of spiritualistic *séances*, but he maintained that the phenomena of spiritualism were so generally experienced that it no longer lay in the power of any one to deny the spiritual existence. The astral body could certainly make itself manifest to some beings—to such as were in sympathy allied to it; but only those who had been initiated could understand the mysteries of theosophy and enjoy its philosophy. To these there are no mysteries. In the astral existence, time and space do not embarrass as they do in the material existence, and the range of the astral intelligence is not limited by them. The number of those who sincerely desire to receive the light of theosophy and to believe is rapidly on the increase.

The third annual convention of the American Section of the Theosophical Society was held in Chicago in April and May, 1889. Dr. A. Keightley, of London, was present as the representative of Madame Blavatsky. A letter was read from Col. Olcott, in which he said that he was in Japan, preaching Buddhism, and that he delivered his first sermon at Kobe, in the temple of Mofatof, where Buddhism was first taught in Japan. A letter was read from Madame Blavatsky, saying that "Col. Olcott is on a visit to Japan, invited by a strong and influential deputation to lecture there on Buddhism among people who are mad and crazy to acquire Western civilization, and who believe it can only be obtained by the suicidal adoption of Christianity." Madame Blavatsky made an appeal to her American followers to recognize that the altruism of theosophy was not an ideal, but must be practiced, saying she had no faith in the future of the order if her followers did not make the vital factor of theosophy a part of their lives. "The enemies of the order," she wrote, "are materialism, prejudice, obstinacy, and the lower order of phenomenalists, the blind worshipers of illusionary phantoms of the dead," by which she meant spiritualists and others who "talk so glibly of magic, occultism, adepts, etc." She announced the secession of the French journal "Lotus" from theosophical doctrines, and said that "La Revue Théosophique" had been established in its stead in Paris. She and the Countess D'Adhama were the editors. There was also a request in the letter that the term "esoteric" be used less frequently, as it was "a term that had been discredited by Boston people." Madame Blavatsky died in 1891.

The opponents of theosophy, speaking through a recognized medium, say that "it is the most cheerless and hopeless of all the creeds known to

the world, proclaiming existence itself to be the curse of mankind; and, while ready to accept millions of deities into its pantheon, is in reality atheistic, as knowing of no absolute being worthy of the name of God—none that may not be plunged to the lowest depths of degradation in his next stage of existence—and yet it has found its propagandists in America. No doubt there is something in the spirit of our times which fits into this dismal creed, and makes possible its acclimatization in the Western world of Europe and America."

**TIN-PLATE INDUSTRY IN THE UNITED STATES.** The first attempt to raise the tariff on tin plates, so that they could be made in the United States, was in 1864. The tariff of that year contained this provision: "On tin plates, and iron galvanized or coated with any metal, by electric batteries or otherwise, 2½ cents per pound." Some doubt having arisen as to the construction of this clause, the Secretary of the Treasury, Hon. William Pitt Fessenden, at once gave the following opinion: "It would appear that an error of punctuation has been made by some one, most probably by the clerk who engrossed that part of the act. If the comma which is inserted after the word 'plates' be omitted, and a comma placed after the word 'iron,' the true sense will be had, which unquestionably is, that the tin plates, as well as the iron, must be galvanized or coated with any metal by electric batteries or otherwise in order to bring them within this provision." It was claimed by those who depended upon the enactment of the tariff that the loss of it postponed the making of tin plates in the United States. But there appears to have been an *ad valorem* duty of 25 per cent. between 1867 and 1873.

In 1873, 1874, and 1875 tin plate was made at Wellsville, Ohio, Leechburg, Pa., and Demmler, Pa. But the Welsh manufacturers cut the prices from \$13 to \$10; then to \$9, \$8, \$7, \$6, and \$5: and finally to \$4.50 a box, in order to meet the opposition. The plate was also made, in limited quantities, at Pittsburg and at Martin's Ferry, Ohio, in 1889. The presidential and congressional elections of 1888 having been favorable to the Republicans, they found themselves, in 1889, in full control of the executive and legislative branches of the Government. A new tariff act, popularly called, after its author, the "McKinley bill," was passed Oct. 1, 1890. The "Mills bill," which passed the Democratic House of Representatives in July, 1888, placed tin ore, pig tin, and tin plates on the free list, but it did not become a law.

The McKinley bill placed tin ore, cassiterite or black oxide of tin, and tin in bars, blocks, pigs or grain, or granulated, on the free list till July 1, 1893. After that date they were to pay a duty of 4 cents a pound. But if the product of the mines of the United States should not in some one year before July 1, 1895, exceed 5,000 tons of cassiterite, and bar, block, and pig tin, then the President must issue a proclamation announcing the fact; and, after July 1, 1895, all imported cassiterite, bar, block, and pig tin shall be admitted free of duty. The effect of this provision was to develop the resources of the tin mines at Temescal, Cal., at Harney Peak, South Dakota, and at several points in Virginia. Tin



was also discovered near San Antonio, Texas. (See the "Annual Cyclopædia" for 1890, page 801.) An analysis of the ore showed that it yielded a larger percentage of tin than the ore from Wales, Australia, or the Straits Settlements in the Malay Peninsula. From present indications, it is doubtful if the product of the mines in the United States will come up to the requirement by July 1, 1895. The imports of tin in bars, blocks, pigs, etc., were as follows for the last two fiscal years, each fiscal year ending with June 30: 1892, 43,908,652 pounds, valued at \$8,667,-870; 1893, 61,075,929 pounds, valued at \$12,-358,999. The McKinley bill placed a duty of 1 cent a pound till July 1, 1891, on sheets or plates of iron or steel, or taggers iron or steel, coated with tin or lead, or with a mixture of which these metals, or either of them, is a component part, by the dipping or any other process, and commercially known as tin plates, terne plates, and taggers tin.

On and after that date, tin plate, terne plate, and taggers tin shall pay 2-2 cents per pound; and manufactures of which tin, tin plates, terne plates, taggers tin, or either of them, are component materials of chief value, and all articles, vessels, or wares manufactured, stamped, or drawn from sheet iron or sheet steel, such material being the component or chief value, and coated wholly or in part with tin or lead or a mixture of which these metals or either of them is a component part, shall pay a duty of 55 per centum *ad valorem*: Provided, that on and after Oct. 1, 1897, tin plates and terne plates lighter in weight than 63 pounds per hundred square feet shall be admitted free of duty, unless it shall be made to appear to the satisfaction of the President (who shall thereupon by proclamation make known the fact) that the aggregate quantity of such plates lighter than 63 pounds per hundred square feet produced in the United States during either of the six years next preceding June 30, 1897, has equaled one third the amount of such plates imported and entered for consumption during any fiscal year after the passage of this act, and prior to said Oct. 1, 1897: Provided, that the amount of such plates manufactured into articles exported, and upon which a drawback shall be paid, shall not be included in ascertaining the amount of such importations: And provided further, that the amount or weight of sheet iron or sheet steel manufactured in the United States and applied or wrought in the manufacture of articles or wares tinned or terne plated in the United States, with weight allowance as sold to manufacturers or others, shall be considered as tin and terne plates produced in the United States within the meaning of this act.

The table in the next column shows the quantity of tin plates, terne plates, and taggers tin imported since there has been a duty of some sort (1867-'93) together with the value, rate of duty, and amount of duty collected.

From the enactment of the McKinley bill, in October, 1890, to the present time the actual condition of the manufacture of tin plates has caused more political discussion than any other subject covered by the new tariff. Those who favored the tariff, and especially the manufacturers who took advantage of its provisions, claimed that the United States now had a chance to make all its black plates, either of iron or steel, and, in time, to coat them with tin mined on its own soil. On the basis of the importation of tin plates for 1891 it was figured that 1,100,000 tons of iron ore, making 550,000 tons of pig iron, would be required for the manufacture of 422,284 tons of black plates

JUNE 30—	Pounds.	Value.	Rate.	Collected.
1867..	.....	\$6,271,187	25 per cent.	\$1,569,084
1868..	.....	6,893,072	" "	1,723,283
1869..	153,432,400	8,565,483	" "	2,141,358
1870..	133,315,000	7,628,572	" "	1,907,218
1871..	155,602,300	9,490,779	" "	2,372,695
1872..	161,762,700	10,736,907	" "	2,684,227
1873..	8,033,000	219,708	" "	54,927
1874..	182,457,600	15,686,739	15 per cent.	2,353,011
1875..	155,386,000	13,322,976	" "	1,998,446
1876..	81,590,600	7,480,508	" "	1,122,090
1877..	161,165,646	5,077,122	1 1/2 ct. per lb.	892,822
1878..	949,900	63,484	15 per cent.	9,515
1879..	196,863,621	10,163,369	1 1/2 ct. per lb.	2,165,500
1880..	222,307,980	9,813,070	" "	2,445,388
1881..	242,646,871	9,593,640	" "	2,669,116
1882..	278,544,321	10,245,720	" "	3,063,993
1883..	369,435,844	16,524,590	" "	4,063,794
1884..	377,072,728	14,641,058	" "	4,147,800
1885..	439,746,895	16,322,935	" "	4,887,216
1886..	453,724,126	16,688,276	" "	4,990,965
1887..	527,881,321	18,931,073	1 ct. per lb.	5,278,813
1888..	505,559,076	16,610,105	" "	5,055,591
1889..	574,093,405	17,719,957	" "	5,740,984
1890..	570,643,389	16,883,814	" "	5,706,454
1891..	632,224,296	19,034,321	" "	6,322,243
1892..	727,945,972	21,002,209	" "	7,279,460
1893..	674,664,458	20,746,428	" "	6,746,645
1894..	1,057,711,501	36,555,580	" "	10,577,115
1895..	5,443,281	205,443	" "	54,433
1896..	*382,863,559	11,139,738	2 1/2 cts. per lb.	8,422,998
1897..	+14,723,945	444,118	" "	323,927
1898..	*595,031,538	16,691,765	" "	13,090,694
1899..	+18,648,452	560,454	" "	410,266
Total.	9,976,482,226	\$392,293,750	.....	\$122,221,976

\* Lighter than 63 pounds per 100 square feet. † All other.

represented by the importation of 1891; and that the labor of nearly 20,000 men would be used in producing the iron ore, the pig iron, the coke and the coal, and in running the plate mills and the tin mills. Add to this number the men employed in mining the tin, and nearly \$50,000,000 in wages would be paid yearly in the United States instead of being paid to foreign workmen.

On the contrary, those who opposed the provision in the McKinley bill relating to tin plate asserted that it was foolish to protect an industry that had not been born; that higher prices would hereafter be paid for home-made tin plate, thus raising the price of canned goods to the consumer or else reducing to the farmer the price for the articles to be canned; that the larger the importation of tin plate, the less would be its cost in the United States; and that it would be impossible for the United States to produce enough tin and tin plate to come up to the requirements of the McKinley tariff, and much more impossible to produce enough for home consumption.

The first tin mill in the United States under the McKinley tariff was opened in the Black Hills, South Dakota, in 1890. Mills were afterward opened in New York, Brooklyn, Chicago, Pittsburg, St. Louis, Philadelphia, and Cleveland; and in various smaller places in Pennsylvania, Ohio, Indiana, and Illinois. The present number of mills is 50, of which 42 are manufacturing, and 40 are reporting to the Treasury Department. In March, 1891, the English manufacturers sent a circular to the trade, dropping the price of tin plate \$24 a ton, the amount of the extra duty. This was in anticipation of the duty, under the McKinley tariff, that went into effect July 1, 1891.

From sworn statements made by the manufacturers to the Treasury Department, it appears that for the first quarter, ending Sept. 30, 1891, 5 factories reported a product of 152,489 pounds of tin plate and 674,433 pounds of terne plate—a total of 826,922 pounds. The statistics, from the same source and to the same department, showed that during the fiscal year ending June 30, 1893 (40 factories having reported in the last quarter), the tin and terne plates manufactured aggregated 13,646,719, of which 9,296,553 were from American black plate and 4,350,166 were from foreign black plate. Those manufactured during the fiscal year ending June 30, 1893, aggregated 99,819,202, of which 43,599,724 were from American plate and 56,219,477 from foreign plate. There were 5,620,867 pounds of American sheet iron and steel made into articles and wares, tinned or terne plated, during the fiscal year 1892; and 8,802,681 pounds made during 1893, making the aggregate manufacture of tin and terne plates in the United States during 1892 19,267,586 pounds, and 108,621,885 pounds during 1893. The total number of American plates used was as follows: 1892, 14,917,420 pounds; 1893, 52,402,405 pounds. The total production of black plates during the fiscal year 1893 was 63,681,541 pounds. The output of tin and terne plates proper of the lighter class during the fiscal year 1893 was 93,850,487 pounds, showing an excess over and above what may be termed the one-third requirement of 14,542,548 pounds. This, the report says, is exclusive of the manufacture of American sheet iron and steel made into articles and wares tinned or terne plated. According to the report, this would indicate that the entire consumption of the United States during the fiscal year 1893 was 720,000,000 pounds, of which more than 15 per cent. was of American manufacture. Of the commercial plates manufactured during the fiscal year ending June 30, 1892, about 33 per cent., and of those for the fiscal year ending June 30, 1893, nearly 46 per cent. were tinned as distinguished from terne. During the fiscal year first above named 90 per cent. of the output of commercial plates consisted of the class weighing lighter than 63 pounds per 100 square feet; and during the last fiscal year, 94 per cent.

On Sept. 30, 1891, the special agent of the Treasury Department, who had charge of gathering the statistics, figured that the American manufacturers, in order to maintain the duty on tin plates after Sept. 1, 1897, must produce in one of the six years ending at that date 50,000,000 pounds of tin and terne plates weighing lighter than 63 pounds to the hundred square feet. The report of the special agent, April 26, 1892, declared that, by the terms of the McKinley tariff, the largest year of production may be compared with the smallest year of importation in the final determination as to whether domestic manufacturers have complied with the one-third requirement, relative to production, as set forth in the act. Under a ruling of the Treasury Department, the coating of metal sheets, or "black plates," as they are called, whether of American or foreign manufacture, with a tin or terne coating, constitutes a manufacture of American tin plates within the meaning of the law. It has been held that the tin

used for the coating, whether of tin or terne plates, may be either of American or foreign production. On the other hand, with respect to the sheet iron or steel applied or wrought in the manufacture of articles or wares tinned or terne plated in the United States, the Department has rigidly held that they must be of American production, as the law explicitly refers to "sheet iron or sheet steel manufactured in the United States." It is not understood that the limitation relative to minimum weight applies to these manufactures, the last proviso of paragraph 143 being silent upon that point. After the reports for the fiscal year ending June 30, 1892, had been received, the amount required of American manufactures, in order to keep the duty on tin plates at 2½ cents a pound, was figured at 79,307,939 pounds. The report of Sept. 18, 1893, declared that the output of tin and terne plates proper of the lighter class during the fiscal year ending June 30, 1893, was 93,850,487 pounds, showing thereby an excess, under the former interpretation of the law, over and above what may be termed the one-third requirement of 14,542,548 pounds. This was exclusive of the manufactures of American sheet iron and steel made into articles and wares tinned or terne plated. The total production of commercial tin and terne plates from American black plates of the lighter class during the fiscal year ending June 30, 1893, was about 94 per cent. of the product from that source, or 40,983,741 pounds. To this add 8,802,681 pounds of products from American sheet iron and steel, tinned or terne plated, and there is a total of 49,786,422. In other words, the product from American plates during the fiscal year ending June 30, 1893, of the kind subject to comparison with the net importations of the lighter class of plates, was five eighths of the amount necessary to enable manufacturers to meet the one-third requirement under the law, comparison being made with the net imports of the fiscal year ending June 30, 1892.

The making of tin and terne plate is one of the simplest of all processes of manufacture. In tin plate the steel or iron plates form from 93 to 97 per cent. of the weight, the remainder being pure tin, or tin mixed with a small quantity of antimony or lead. In any quantity of terne plate, used chiefly for roofing, 95 per cent. is steel or iron, and the remainder two parts of lead to one of tin. For commercial purposes, tin plates are divided into two classes, which are termed "charcoal plates" and "coke plates," according as charcoal or coke is used in the manufacture of the iron bars from which the plates are rolled. The plates are carefully cleaned and pickled by being immersed in hot diluted sulphuric acid. The sheets are placed on edge in a wooden rack, and the whole is immersed in acid. A mechanical arrangement imparts to the rack holding the sheets a regular up-and-down motion, thus maintaining a circulation in the acid bath. When all the scale, or oxide, has been dissolved, the rack holding the sheets is immersed, and the whole is washed several times in fresh water. The sheets are then dried, packed in annealing boxes or pots, and annealed twelve to twenty-four hours in a reverberatory furnace. This softens the sheets, and



they will readily take a polish when cold-rolled in the next operation. The sheets are passed singly through a series of heavy, high-polished cold rolls. After the rolling the sheets become harsh, and to remove this they are again annealed in the same way. They are then pickled a second time. The sheets are plunged into heated tallow to drive away the water without oxidation of the metal. They are next placed in a bath of molten ferruginous tin, and then in a bath of pure tin. In this they soak twenty minutes, the tinman constantly opening and reopening the pack with his tongs. The tinman hands them to the washman, who plunges them into the washpot filled with tin. They are next placed upon a flat iron plate, and the washman brushes the two sides, removing the excess of tin between them. To give the sheets a polish, the sheets are dipped, one at a time, in the smaller compartments of the washpot. Without removing the sheet from the tongs, it is passed between a pair of steel rolls into the patent pot. Passing through these rolls into tin below, it is caught, moved along, and raised by means of a cradle to meet another pair of rolls revolving in the surface of the tin bath. Thus as one sheet is rolled into the bath another is rolled out. The sheets are placed in a rack to cool, after which they are rubbed with sawdust or bran to remove the grease. They are polished with flannel or buckskin, and removed into the sorting room for examination and classification. The tests are durability, strength, and color. Besides the acid process, described above, the palm-oil process is sometimes used. But this is a slower and more expensive method, and on that account preference is generally given to the acid process.

**TORPEDOES. Submarine Mines.**—The torpedo as a weapon of warfare has made great advance within the past fifteen years, both in its offensive and defensive forms, or, in other words, as movable constructions and as anchored mines. In the latter form they are technically known as "submarine mines," and it is to this division of the subject that we shall now call attention. Anchored mines are used almost exclusively for the defense of harbors, and in the present development of warfare are rarely utilized for the protection of shipping out of port. The complicated construction and apparatus consequent on that electrical connection, now generally used for firing mines, make them impracticable, except where they can be laid from a fixed station. The older methods of mechanical ignition are now for the most part obsolete. (For history and earlier stages of submarine mining see "American Cyclopædia," vol. xv, page 802, and "Annual Cyclopædia," vol. ii, p. 717.) The American school of submarine mining is at Willet's Point, the headquarters of the engineer battalion of the army, at the throat of Long Island Sound, about 8 miles from New York. Here thorough instruction in this branch of the military art is given to engineer and other army officers, as also to the enlisted men of the engineer corps, and material is stored to meet emergencies. The principles underlying the American system are of course the same as those adopted by the military engineers of the more advanced European nations, but in some im-

portant minor applications of these principles there are features peculiar to our service.

There are also certain secrets involved in the details of the working and employment of the American torpedo system which are not made known. These are the constructions of the "circuit closer" and of the "firing box," and the plots of the torpedo fields designed for the vari-



A BUOYANT TORPEDO.

ous harbors of the country. In the latter case the secret is kept within the *penetralia* of the War Department, a thing not even intrusted to engineer officers until the actual need of laying torpedoes arrives. But these may be illustrated without trenching on the actual facts.

Submarine mines may be divided into two general classes—electro-contact and self-acting mines. The latter have within themselves the means of ignition in the shape of a small battery of a few cells, and are equally dangerous to friendly and hostile ships. They are only used at times of great urgency or in less important channels to supplement the others. Their simplicity of structure and freedom from complicated shore attachment make it possible to lay them with great rapidity. But they are liable to become rapidly ineffective as, once down, they can not be tested. For this reason, and the no less potent ones that they threaten all ships alike and can only be safely removed by exploding them, self-acting mines promise to become obsolete as the art of submarine warfare progresses. Electro-contact torpedoes are discharged by the shore circuit, and involve complicated electrical apparatus and the highest skill and judgment in their practical use. As compensation for this they can

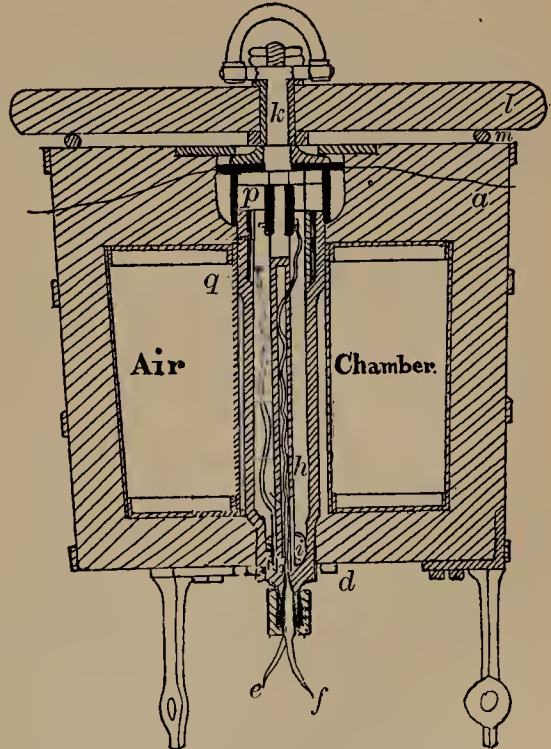
be accurately tested in all their details of device, kept in perfect working order, and made to execute the commands given them with the precision of an infantry soldier at drill. This form of torpedo is one of the splendid triumphs of military science. Its terrors are docile and can be disarmed at a touch, and its obedience to orders is as swift as thought. It telegraphs ashore its own condition and that of all the electrical apparatus connected with it; it can instantly destroy on contact or signal to the "mining casemate" that a ship is in position for submarine attack and wait for the orders at the will of its master. It is almost like an intelligent creature. Mines working on the shore circuit can be laid so as to be at once transformable from "judgment" torpedoes (discharged at will) to those of automatic action; or they may be so arranged as to be capable of ignition only by judgment from the shore. These distinctions depend on the arrangement of the circuit-closer.

Torpedoes in their outer form are divided into buoyant and ground mines. The shape of the torpedo case adopted in the United States and to some extent in foreign countries is spherical, constructed of two hemispheres with heavy flanges welded together. This form of the sphere is found to be the strongest, the most capacious weight for weight, and to possess the greatest power of flotation. The metal is pressed out as thin as possible from low-carbon steel of the greatest tensile strength. In deep water, say more than seven fathoms, the buoyant form is used, while in shallower channels the ground mine becomes desirable, as it can take a much heavier charge of explosive. The question of weight in relation to buoyancy here ceases to be a factor. The ground mine is hemispherical, adhering to the bottom by its own weight, and the buoy, consisting of an unloaded torpedo sphere, floats above it at from 10 feet to 20 feet below the level of ebb tide.

The buoyant mine is anchored to the bottom. The circuit-closing apparatus is in the very heart of the torpedo itself, and so constructed that when the electric current is turned on, a very slight shock to the torpedo case discharges it. On the other hand, in the case of a ground mine the circuit-closer is in the buoy above the torpedo. The size of a torpedo varies according to the load it is intended to carry, the law of relative flotation, the strength of tide and current, the limits of tidal change, and the depth of channel. These must all be carefully calculated. It may be said that an average standard for a buoyant mine is 36 inches diameter. The explosive mostly in vogue for loading torpedoes is one of the higher powers of dynamite or other nitro-compound. In the American system it is the grade known as No. 1. The base of this is the infusorial earth known as *kieselgahr*, found in Hanover, Germany, which absorbs nitro-glycerin in the ratio of 3 to 1. No inert base known has so high a power of absorption. Another still higher form of explosive which has been adopted in England and Germany, and will probably come into use here, is "blasting gelatin," first made by Nobel, who was the discoverer of dynamite, and afterward improved by Prof. Abel, the chemist of the English War Department. The base of this is gun-cotton, which is also a nitro-

compound and a most powerful explosive. As it is soluble in nitro-glycerin, the compound is a pure explosive with nothing inert. For a time this explosive, the most energetic known, was dreaded as unsafe for handling. But the difficulty has been removed, and it can now be used with no greater precautions than dynamite, than which it has nearly 50 per cent. higher energy. An essential portion of the torpedo apparatus is the circuit-closer, which is ordinarily designed to be used with the fuse, either in or out of the permanent circuit. In the former case it can be fired either by a blow from an outside object or by judgment from shore; in the latter case only by a blow. The circuit-closer can either be inclosed in a separate case and connected with the mine by a mooring line and electric cable, or it can be included with the charge in the mine. A description of Prof. Abel's apparatus, which is the favorite form of the British War Department, will sufficiently indicate the general principles involved in the construction of all. The form illustrated is that in which the apparatus occupies a separate shell. It consists of a strong case made buoyant by means of an air-tight chamber.

Within is set a brass tube (*d*), into the lower extremity of which a pair of insulated wires (*e* and *f*) are introduced through a water-tight stuffing-box. Within the brass tube is another tube of brass or iron (*h*) extending vertically through the whole apparatus and working on a universal joint (*i*) at its lower extremity. The upper portion of this tube is rigidly connected



SECTION OF ELECTRIC TORPEDO.

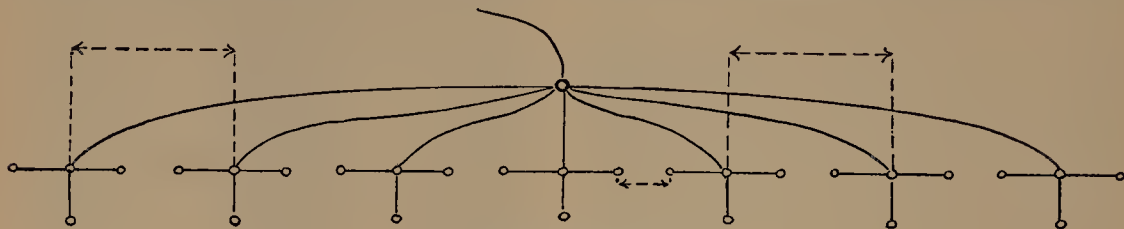
with a metal bar (*k*), which is attached to a top (*l*) supported on the case (*a*) and separated from it by a vulcanized rubber ring (*m*). One of the insulated conducting wires (*e*), passing through



the metal tube *h*, is soldered on to a copper ring (*p*) encircling the bar (*k*) and insulated from it. The insulated conducting wire *f* passes through a hole in the tube *h*, and its bared extremity is attached to a binding screw (*q*), in connection with an insulated brass band, let into an ebonite ring, which is fitted around a hollow in the brass tube. When it is designed that the fuse shall be kept out of circuit till the moment of firing—that is, to explode solely from the effect of an outside shock—the electric cable from the firing battery is connected with the insulated wire *e*, the other pole of the battery being to earth; and the wire *f* is attached through an insulated conductor to one pole of the fuse while a metallic connection is arranged from the other pole of the fuse to earth. Firing the fuse only requires to bridge over the space between the copper ring (*p*) and the brass ring (*q*), with which the conducting wires are respectively connected. A vessel striking the top of the apparatus in any direction would effect this, as it would jar the bar (*k*), and by action of the universal joint (*z*) some part of the copper ring (*p*) would be brought into contact with the brass band (*q*), thus completing the circuit. When it is desired that the fuse should be arranged in permanent connection with the circuit the combination would be as follows: One pole of the firing battery being to earth, the other is connected by cable with one pole of the fuse, the other pole of the fuse being placed in metallic connection with the wire *e*, while the wire *f* is put to earth by being connected with the metallic portion of the case (*a*). A shock from above would at once bridge over the space between the rings (*p* and *q*), firing the fuse; or, on the other hand, the mine could be exploded at will from the mining casemate by connection with the firing box.

In England and Germany the circuit-closer is, in most cases, a separate attachment. The great objection to it is that the first object of an en-

being one hundred feet distant from the junction box, and the groups one hundred feet from each other. From the triple junction boxes issue single ones, which are joined together at the grand junction box into the multiple cable. This is carried ashore into the mining casemate, which is the firing station, and, passing to earth, completes the circuit. It will be seen from this description that each of the separate cores of the cable carries the electric current to a triple group, so that at no time can fewer than three be discharged from the shore. Any one torpedo, however, can be independently exploded by concussion from a passing vessel. The touch of a ship rings a bell in the mining casemate and breaks the circuit for five seconds, thus preventing the two nearest companions to the discharged mine from being exploded by mechanical shock from the disturbed water. If, on the other hand, the touch of a side or keel has possibly been too light to discharge a mine, the warning ashore gives an opportunity for the use of the firing box in the mining casemate to discharge the whole group of three. The fact that a group of mines can be made perfectly safe for the passage of friendly ships or merchant vessels is a point of great importance. The occasional failure of a mine to explode by contact, as might occur when touched by an outrigger, would be remedied by a warning to the electrician and his consequent action. In case of heavy fog or the smoke of battle hiding ships from view, thus preventing the tracking of them from theodolite stations on a chart, such reports from the torpedo itself would be of the greatest value, guiding action as to the policy and time of firing any special group. It is this combination of automatic action with power to communicate results to the shore station which constitutes the crowning triumph of the submarine mine. For example, hostile vessels are approaching the torpedo field. The commanding officer in the mining casemate suspends the auto-



ARRANGEMENT OF MINES.

emy attacking a harbor would be to explode the mines in his front, or, failing in this, to get hold of and carry off the circuit-closers, and break the cable connections, thus rendering the charges unexplodable. This would be much easier to accomplish if the apparatus were detached. The priming fuse generally used consists of fulminate of mercury, duplicated in several compartments. The fuse fits into a receptacle made to hold one pound of dynamite, which constitutes the main percussive charge to the whole mass. The unit of arrangement which determines the distribution of mines on the hydrographic plot is a grand group of twenty-one, subdivided into seven triple groups, as may be seen illustrated in the diagram. Each minor group is set in the shape of a triangle, the torpedoes

automatic action of any section, or of a grand group, or of several groups. The observers at the theodolite station or stations engaged in tracking the course of the enemy's ships with reference to the torpedo locations, report the facts to the mining casemate. The electric current may be reserved from the circuit till several ships of the fleet, unwarned by explosion, are destroyed simultaneously when they reach favorable stations on the torpedo field. Strategy is thus made possible in the use of submarine mines. From first to last each step in the torpedo system is infallibly tested, and the testing never ceases.

Every detail of the complex apparatus can be examined from the mining casemate, and a fault located by electricity. The testing begins with the storage of material. The multiple

cables are stored in salt-water tanks, so that the outer coat is saturated and a defect may be discovered before it is laid. The dynamite and the fulminate in the primer are tested before loading the torpedo shells. With the laying of each separate mine the electrical connection is tested. When a grand group is laid every feature of it is daily examined, the multiple cable tested for insulation and conductivity, as well as each core and branch of a core. The fault can be located within a few feet. The junction boxes are subjected to a daily inquisition. A difficulty in the circuit-closer or its wire connections, a leak in the torpedo case, a wetting of the dynamite charge or the fulminate of the primer are at once made known and the fault properly placed. This is done by delicate electrical apparatus in which the galvanometer plays the most important part. The method may be illustrated in some of its applications in the use of the sea-cell test. First take, for example, the testing of the dryness of the dynamite charge. The principle of the sea-cell depends on the fact that two plates of suitable metal form a voltaic battery when placed in salt water and properly connected by a metal conductor. This battery will produce considerable deflection in the needle of a galvanometer, which varies in direction and violence with the metals used. There is a plate of zinc inside the dynamite charge at the point which connects it with the conductor of the cable between the fuse and the shore. There is also a plate of carbon connected with the wire beyond the fuse to form the earth connection, while a copper earth plate is used at the home end. In case the charge is dry, we should have a sea-cell composed of a copper and a carbon pair, which would produce a certain deflection on the needle of a galvanometer in circuit, say from right to left. If the charge is wet, the zinc plate would come in contact with salt water, and the sea-cell composed of a copper and a zinc pair would give a deflection of the galvanometer in the opposite direction. Again, suppose the insulation of the electric cable has become damaged to such extent as to expose the copper conductor. Under these conditions the sea-cell would be formed of two copper plates—one the permanent earth plate, the other the exposed conductor—and a certain kind and degree of deflection would be noticed. This deflection would differ in character from that produced by the copper carbon sea-cell, which would exist if the insulation were good, indicating a change in the electrical conditions and the probability that there had been an injury to the insulation of the cable. Now if the earth plate at the home end of the cable should be changed from copper to zinc or carbon, fresh combinations would give new indications on the galvanometer, and these would provide the means of determining with accuracy the reason for the change in the electrical conditions of the combination which they indicated. In this way the fact of a leak in insulation could be discovered. Its extent and position would be determined by further tests. Should the conductor of an electric cable be fractured within the insulation without injury to the latter, the sea-cell test would denote the fact, that lack of continuity in the conductor would result in lack of deflection in the galvanometer needle. Want of conductivity

or inefficient connections in the fuse would be similarly shown. When submarine mines are laid in expectation of the arrival of a hostile fleet, these tests are supposed to be daily applied to every portion of the mining apparatus. While the main current is dynamic electricity, the voltaic battery is generally used for the firing box and the testing table, as being more easily and economically administered for these uses. After the torpedos are laid and fully adjusted, the question arises as to their methods of use in the exigencies of battle. Discharge by contact through the circuit-closer is already provided for in the torpedo apparatus. But in firing at will, means of exactly determining the vessel's position on the mining plot are necessary. This position is determined by intersection. The simplest and, on the whole, the surest plan is that which accomplishes this by theodolite observations from different stations, one of which may or may not be at the mining casemate, preferably the latter, as the firing station would in any case have electrical communication with both. Before the officer in the mining casemate, who has at his elbow the different firing boxes, lies a chart of the whole field of mines. It is divided into small squares, which show the precise location of all the mine groups, the definitions being made by the markings of the degrees of a great circle laterally and lengthwise. Remote points at some elevation, not likely to be discovered by the enemy, and at the end of a fixed base line are selected, which overlook the field of operations. These points are electrically connected with each other and with the mining casemate. At each of the observation stations an officer and his assistants take the readings, as indicated on the graduated scale of a theodolite telescope, of the moving vessel which is being tracked. The scales of the two instruments correspond, and of course the alignments intersect at the ship's location. The markings in degrees at the subsidiary station, constituting the record of one alignment, are telegraphed at once to the main station, and the officer there in command traces these in connection with the readings of his own alignment on the chart, or both alignments may be telegraphed to the mining casemate, and there traced on the chart. The movement of the point of intersection over the squares indicates the course of the ship and its precise relation to any torpedo group. If the theodolite scales are properly set and the officers and their assistants careful in their readings, this method is almost infallible except in case of heavy fog or battle smoke, when dependence would need be left to explosion by contact or the signaling from an unexploded mine. At night it would be necessary to make use of powerful search lights, an assistance also indispensable in guarding against attacks on the torpedo field at night by picket boats or other means of aggression on the part of the enemy.

The art of countermining has advanced proportionably with that of torpedo defense. This is accomplished mainly by heavy charges of dynamite or gelatin exploded over a suspected field of mines, or by boat parties with means of taking up buoyant mines, or the circuit-closers, of ground mines if detached, or of cutting the electrical connections. It is probable that any



hostile fleet would use both these means of destroying the dangers in its path before attempting a passage. The defense of the torpedo field would make necessary a patrol of lightly armored launches, equipped with batteries of Hotchkiss or other quick-firing pieces, and machine

possible. For this reason it is probable that the mining casemate and the observation stations for tracking ships would be remote and concealed as much as possible from observation. They could not safely be within the main line of shore works that covered and protected the field,



EASTERN TORPEDO DEFENSES OF NEW YORK.

guns to do skirmish and picket duty. All the stations used in making a system of submarine mines in time of war would need to be bomb proof. Once the enemy's ships had located these essential nerve centers of the defense, the fire would be concentrated, so as to make them untenable if

but would be connected therewith by telegraph, keeping them under control of headquarters. To make more clear the principles on which a defense of submarine mines at the entrance of a harbor would be laid and utilized, an illustration is taken from a late work by one of the most



distinguished English engineers, Lieut.-Col. Bicknell, R. E. (Ret.). This shows a plan for defending the Long Island Sound entrance of New York harbor. It is, of course, different from the plan of the United States official mining chart, but is sound and skillful. It is based on the following principles: First, that the mines should be scattered in groups as irregularly as may be compatible with their protection by light artillery and quick-firing guns mounted in proper emplacements; second, that they should be deep and narrow in plan, concentrated in the channels, with the center of each channel mined more than the sides; third, that they should extend right through the defense to the very last intrenchment.

To provide against a strong land attack in co-operation with that of the navy the topography of the region would force the erection of strong lines of earthworks at least two miles in the rear on both shores, thus preventing either Fort Schuyler or Willett's Point being taken in reverse. All the mining stations would be well within these interior lines. All the navigable waters to the west of Hewlett's Point and Elm Point would be mined. The firing and observation stations would be located on the north side. In the immediate front of the forts self-acting mines, charged with heavy loads of dynamite or gelatin would be used. The mining casemate would be located somewhat northwest of Fort Schuyler, far enough to be clear of the smoke and of the enemy's fire on the fort. This firing station would also be the main observation station with auxiliary at *M*, or perhaps a point a little farther from shore and less liable to boat attack at night. Four groups of mines converge on *M*, and the cables would be carried from that point to the mining casemate on Throgg's Neck. The two stations would be connected by cable containing separate cores for telephoning and telegraphing. These mines, being spread over a considerable extent of water, would be most useful against ships that might engage the forts at battering range. Other groups of mines to be fired from the same station might be planted between Hart's Island and Hewlett's Point, and another group in mid-channel just north of Willett's Point, if need be. All the side channels would be blocked with self-acting mines or passive obstructions or both, as, for example, between City Island and Redman's Neck and off Elm Point. Abreast of Fort Schuyler would be a mine field, consisting of four groups of electro-contact torpedoes, flanking a fair way or open passage with several pairs of observation ground mines (such as would be exploded solely from shore). Other mine fields in the rear are supposed to be planted at Old Ferry Point and at Clawson's Point. An attacking squadron that passed these obstructions and the forts at Fort Schuyler and Willett's Point would be within such cannonading range ( $5\frac{1}{2}$  miles) of New York as would compel the city to make terms.

**TURKEY**, an empire in eastern Europe and western Asia. The Sultan, who rules absolutely under the moral limitations contained in the Mohammedan sacred laws, is the eldest prince of the family of Osman. Abdul Hamid II, the thirty-fourth sovereign of the line, born Sept. 21, 1842, succeeded his brother Murad V, who was

deposed on the ground of lunacy on Aug. 31, 1876. The Sultan is recognized as Khalif, or spiritual ruler, beyond the present bounds of the Ottoman Empire, being guided in his ecclesiastical policy by the Sheikh-ul-Islam and the Ulema, a body composed of eminent doctors of the law. In temporal matters the Sadrazam, or Grand Vizier, is the chief executive officer. These two functionaries, together with ministers of departments, form the Privy Council or Cabinet of the Sultan, which was composed in the beginning of 1893 as follows: Grand Vizier, Djavad Pasha; Sheikh-ul-Islam, Djemal Eddin Effendi; Minister of Foreign Affairs, Said Pasha; Minister of War, Riza Pasha; Minister of Marine, Hassan Pasha; Minister of the Interior, Halil Rifat Pasha; Minister of Public Works, Commerce, and Agriculture, Suhdi Pasha; Minister of Justice, Hussein Riza Pasha; Minister of Finance, Nazif Effendi; Intendant of *Evkafs*, or property consecrated to the mosques and charitable uses, Galib Pasha; Minister of Education, Sihni Pasha. During the year Zuhdi Pasha became Minister of Education, and Tefvik Pasha, Minister of Public Works.

Citizens of Occidental countries are privileged throughout the Turkish Empire, under the capitulations, to be tried under their own laws by a tribunal presided over by their consuls in cases where Turkish subjects are not concerned, and where they are a dragoman of the consulate watches over the trial and sees that the sentence is duly executed if it goes against the Turk; if not, the consulate looks after its execution.

**Finances.**—The duties on liquors, salt, stamped paper, fishing, and silk raising, the tobacco monopoly, and tithes and customs duty on Persian tobacco, the Eastern Roumelian tribute, and the surplus taxes from the island of Cyprus are all pledged for the payment of the unified debt, which amounts to £92,225,827. The net receipts from these sources in 1890 were £1,942,562 Turkish (£1 Turkish = 100 piasters = \$4.50). Adding the Roumelian railroad, or Turkish lottery, debt, the total foreign debt amounts to £106,437,234 sterling.

**Commerce.**—The value of the total imports in 1890 was 2,291,434 piasters, and of the exports 1,283,647,000 piasters. Of the imports, 992,278,000 piasters were from Great Britain, 460,670,000 piasters from Austria-Hungary, 283,360,000 piasters from France, 170,304,000 piasters from Russia, and between 50,000,000 and 100,000,000 piasters from Bulgaria, Persia, and Belgium. Of the exports, 481,302,000 piasters went to Great Britain, 373,209,000 piasters to France, 103,945,000 piasters to Austria-Hungary, 68,565,000 piasters to Egypt, 55,421,000 piasters to Italy, and 51,206,000 piasters to Greece. The imports from the United States were 7,469,000 piasters, and the exports to the United States 18,263,000 piasters in value. The principal imports were: Linens for 207,700,000 piasters, sugar for 151,400,000 piasters, cereals for 130,500,000 piasters, piqué for 127,000,000 piasters, woollens and cottons for 115,900,000 piasters, cotton yarns for 113,100,000 piasters, and coffee for 88,700,000 piasters. The principal exports were: Cereals for 185,800,000 piasters, raw silk for 102,000,000 piasters, raisins for 98,600,000 piasters, opium for 70,300,000 piasters, coffee for 52,200,000 piasters, skins and



leather for 49,100,000 piasters, wool for 48,500,000 piasters, figs for 43,000,000 piasters, olive oil for 42,500,000 piasters, cocoons for 38,500,000 piasters, gall nuts for 36,200,000 piasters, and mohair for 35,500,000 piasters.

**Communications.**—The railroads open to traffic at the close of 1893 had a total length of 1,852 miles, of which 852 miles were in Europe and 920 miles in Asia Minor. A railroad from Jaffa to Jerusalem, built by a French company, was opened on Sept. 26, 1892. Another from Haifa to Damascus is being constructed with English capital. The concession for Anatolian railroads has been granted to Germans, who will extend the Angora line to Cæsarea, and build lines between Smyrna, Konia, and Eskisher. In Europe, Ottoman companies, supported by French and German capital, are building lines between Salonica and Constantinople, and Salonica and Monastir. The Government is desirous of nationalizing all the European lines, and has entered into negotiations with the companies and the bondholders' commission.

The postal traffic in 1889 was 7,284,000 internal and 2,949,000 international letters, 119,000 cards, and 1,286,000 circulars and journals.

The telegraphs had a length of 20,140 miles, with 31,700 miles of wire, excluding 375 miles of cable. The receipts in 1889 were 51,615,526 piasters; expenses, 17,669,044 piasters.

**The Army and Navy.**—The peace strength of the army is reported as 230,000 men, though not more than 180,000 are effective. The war strength is reckoned at 800,000 men. The standing army is to be armed with Mauser rifles of 7·65 caliber.

The armored fleet in 1893 was made up of 3 casemated armor-clads, 2 floating batteries, 7 corvettes, 1 monitor, 1 gunboat, 2 river gunboats, 2 torpedo vessels, and 14 first-class and 7 second-class gunboats, having a total armament of 103 guns exceeding 10 centimetres and 216 of smaller caliber.

**Political Trials of Armenians.**—The Armenian National Committees, established in various capitals, are striving to secure political autonomy for their nation through the intervention of the powers. To rouse European public opinion and create sympathy for their national aspirations, it is necessary not only that private wrongs, administrative oppression, and miscarriages of justice should be committed against Armenians, but that their compatriots should make illegal demonstrations, which the Ottoman authorities are very anxious to repress, in order to avert the interference of the powers. In the early part of 1893 an outcry was raised in the province of Sivas against the Vali, Kosrev Pasha, and seditious speeches and placards gave occasion for arrests and incited lawless Kurds to acts of robbery and wanton violence in Cæsarea, Mersivan, Yuzgat, and other places. Riots took place, in which both Armenians and Musulmans were injured. The local authorities, pretending that the Armenians were conspiring to manufacture dynamite bombs and destroy property, arrested hundreds. Two professors in the evangelical seminary at Mersivan were arrested, and soon afterward the evangelical girls' school in Mersivan was burned by a Mohammedan mob. As both were American missionary

institutions, the United States minister sent an *attaché*, Harry R. Newberry, to inquire. He reported that the Armenian professors in the American college had introduced politics into their sermons.

The British Government, which has made the Armenian reforms enjoined by the Berlin Treaty its especial care, admonished the Porte to treat the Armenians with justice and humanity. Many of the prisoners had been condemned, and it was said that witnesses had been suborned and pretended confessions wrung from some of them by torture. The Porte ordered all the cases removed to Angora, the residence of the Vali, Abeddin Pasha, in whose intelligence and impartiality the Europeans had confidence, and who had therefore been constituted a special commissioner for Armenian affairs. The Porte agreed to pay full compensation to the American Missionary Society for the building that was burned. The British and the German Governments interceded for the two Protestant professors, Pastor Garabed Thumaian and Oanes Kayayan. Most of the prisoners were released on bail or on parole, and many were never tried. On June 12 the two teachers were condemned to death. The Vali urged the authorities at Constantinople to pardon them, as the sentence was excessive. There were 15 other persons who received the same sentence. On appeal, the sentences were confirmed, and 5 of the prisoners, who were convicted of common-law crimes, were executed. Thumaian and Kayavan were pardoned, but banished from Turkish dominions, and the sentences of all the rest who were found guilty of sedition were commuted, and most of them were deported to Arabia or Tripoli.

In August the Gregorian patriarch, Ashikian, who has several times threatened to resign when disputes have arisen between him and the Porte, while the Armenian agitators have constantly denounced him as a foe to their political aspirations, laid down his office because the Porte refused to summon the biennial National Assembly of 20 clergymen and 120 laymen for the election of the National Council of 12 clerical and 12 lay members which looks after the ecclesiastical and educational institutions, the administration of justice and the marriage laws, wills, inheritances, etc., in the Armenian Gregorian community, and advises the patriarch in ecclesiastical and national affairs. The Sultan, as usual, refused to accept his resignation. Khrimian, Archbishop of Jerusalem, was chosen Catholicos of the Armenian Church in May, 1892. The Turkish Government, which had formerly deposed him from the patriarchal see at Constantinople and deprived him of his rights as an Ottoman subject, detained him at Jerusalem, but finally, in June, 1893, allowed him to depart for Etchmiadzin.

**Pacification of Arabia.**—The Military Governor of Yemen, Ahmed Fenzi Pasha, has thoroughly pacified that province, where an agitation against the caliphate, fostered by the Sultan's secret enemies in other parts of Turkey, brought on a general insurrection. He has also occupied the mountainous district of Saada, which has often served as a base for insurrectionary forces, not only in Yemen, but in the northern coast provinces of Assir and Hedjaz.







Etched by H.B. Hall, New York.

*Am Lowell*

D. Appleton & Co.

On the west coast of Arabia the Porte has further strengthened its military position by garrisoning the island of Tiran and several points in the coast district of Midian.

**TYNDALL, JOHN**, a British scientist; born in Leighlin Bridge, Carlow, Ireland, on Aug. 21, 1820; died in Haslemere, Surrey, England, on Dec. 4, 1893. Although of English ancestry, for he traced his descent to William Tyndale, who was burned at the stake in 1536 for having translated the Bible into English, his immediate ancestors had settled in Ireland, whence they had come from Gloucestershire about two centuries ago. His father was in humble circumstances, and, after learning a trade, became connected with the Irish constabulary. He was a man of singular force of intellect and independence of character, and, although his education had been neglected, he taught himself on various subjects. Prof. Tyndall has said of him:

I had a father whose memory ought to be to me a stay and an example of unbending rectitude and purity of life. Socially low, but mentally high and independent, by his own inner energies and affinities he obtained a knowledge of history which would put mine to shame, while the whole of the controversy between Protestantism and Romanism was at his fingers' ends. Still this man, so charged with the ammunition of controversy, was so respected by his Catholic fellow-townsmen that they, one and all, put up their shutters when he died.

From this father the boy received his earliest instruction, and learned the Bible almost by heart. He attended the public schools until he was nineteen years of age, and was an excellent scholar, showing a special fondness for mathematics. But he had also an early interest in natural things, and his father flattered this tendency by calling him "Newton" and by teaching him lines concerning the great natural philosopher before he was seven years old that he never forgot. It is also said that the first germ of science that was dropped into his mind came to him from the father of Lord Kelvin (Sir William Thomson), who was then a teacher of mathematics in the Belfast Institution. It is also told how from reading the results of Sir Humphry Davy's experiments on radiant heat he determined to do something of that kind, and in after years, when he came to occupy the place filled by Davy at the Royal Institution, he did "do something of that kind."

In 1839 he entered the employ of the Ordnance Survey, then stationed at Leighlin. His chief was Gen. George Wynne, who enabled him to acquire a practical knowledge of every branch of the survey work, and he was in turn a draughtsman, a computer, a surveyor, and a trigonometrical observer. It was at this time that an incident occurred which had much to do with his subsequent career. One of the officials who had become interested in Tyndall's work asked him one day how his leisure was spent. The answer not being satisfactory, he rejoined: "You have five hours a day at your disposal, and this time ought to be devoted to systematic study. Had I, when at your age, had a friend to advise me, as I now advise you, instead of being in a subordinate position, I might have been at the head of the survey." Next morning Tyndall was at his books before 5 o'clock, and for twelve years never

swerved from the practice. The opportunities for advancement were few (for he said, "On quitting the Ordnance Survey in 1843 my salary was a little under twenty shillings a week"), and he determined to come to America, whither certain of his relatives had already made a home, but an opening was found for him as a railway engineer. He says of this period:

Then came a pause, and after it the mad time of the railway mania, when I was able to turn to account the knowledge I had gained upon the Ordnance Survey. In Staffordshire, Cheshire, Lancashire, Durham, and Yorkshire, more especially in the last, I was in the thick of the fray. It was a time of terrible toil. The day's work in the field usually began and ended with the day's light. In my own modest sphere I well remember the refreshment I occasionally derived from five minutes' sleep on a deal table, with "Babbage and Callet's Logarithms" under my head for a pillow. On a certain day, under grave penalties, certain levels had to be finished, and this particular day was one of agony to me. The atmosphere seemed filled with mocking demons, laughing at the vanity of my efforts to get the work done. My leveling staves were snapped, and my theodolite was overthrown by the storm. When things are at their worst a kind of anger often takes the place of fear. It was so in the present instance. I pushed doggedly on, and just at nightfall, when barely able to read the figures on my leveling staff, I planted my last "bench mark" on a tombstone in Haworth Churchyard. Close at hand was the vicarage of Mr. Brontë, where the genius was nursed which soon afterward burst forth and astonished the world.

When the railway work slackened he accepted an appointment as master in Queenwood College, Hampshire. It was here that he developed his remarkable capacity as a teacher. Such was his influence over the students that he was invariably called upon to quell their disturbances, which he did by moral influences and pure force of character. Here also he became associated with Edward Frankland, the distinguished chemist. He did not stay long, for, as he writes:

I did not put my money in a napkin, but cherished the design of spending it in study at a German university. I had heard of German science, while Carlyle's references to German philosophy and literature caused me to regard them as a kind of revelation from the gods. Accordingly, in the autumn of 1848, Frankland and I started for the land of universities, as Germany is often called.

To Marburg in Hesse Cassel the friends went. The university in this picturesque town was then famous largely on account of the chemical work by Bunsen, the Nestor of chemists, who still lives in Heidelberg. He tells his own story best:

I concentrated my chief attention upon mathematics, physics, and chemistry. Prof. Stegmann gave me the subject of my dissertation when I took my degree. Its title in English was "On a Screw Surface with Inclined Generatrix, and on the Conditions of Equilibrium on such Surfaces." I resolved that if I could not without the slightest aid accomplish the work from beginning to end, it should not be accomplished at all. Wandering among the pine woods and pondering the subject, I became more and more master of it; and when my dissertation was handed in to the philosophical faculty it did not contain a thought that was not my own.

He spent two years in Marburg, and there in conjunction with Prof. Knoblauch he made his first investigation in physics, which he published in the "Philosophical Magazine" in 1850 as "On the Magneto-optic Properties of Crystals, and



the Relation of Magnetism and Diamagnetism to Molecular Arrangement." His final studies were made under Magnus. He says :

To Berlin I went in the beginning of 1851. Prof. Magnus had made his name famous by physical researches of the highest importance. From him and from Clausius, Wiedemanu, and Poggendorff I received every mark of kindness, and formed with some of them enduring friendships. Helmholtz was at this time in Königsberg. He had written his renowned essay on the "Conservation of Energy." In his own house I had the honor of an interview with Humboldt.

He returned to London in 1852, and in the same year was elected a fellow of the Royal Society. At the instigation of Dr. Bence Jones he was invited to give a Friday evening discourse at the Royal Institution in 1853 (Feb. 14), which proved so acceptable that almost im-

mediately, on the proposal of Faraday, he was appointed Professor of Natural Philosophy there in Faraday's place, thus succeeding to the chair formerly held by Davy. This place, together with that of Superintendent of the Royal Institution, he held until 1887, when he was succeeded by Lord Rayleigh. Of his relation to this institution a contemporary has written :

was proud of it, as, in spite of some physical drawbacks, he had a right to be. He delighted in a brilliant audience and in a brilliant lecturer, and spared no pains to bring the two together. He was *facile princeps* in the difficult art of presenting delicate scientific experiments to an audience. He rehearsed his effects as carefully as a stage manager those of the theater ; and the lecture room of the Royal Institution was a theater. Nothing ever went wrong, nor missed fire. He took infinite pains to prevent any scientific or experimental miscarriage. People who cared nothing for science came to hear him because he spoke so well, and to see the performances because the performances were so good.

Huxley, his distinguished contemporary, who knew him long and well, first met him in 1851. He says of him :

"I found my new friend a difficult subject *in certæ sedis*, as the naturalists say—in other words, hard to get into any of my pigeonholes.

Before one knew him well it seemed possible to give an exhaustive definition of him in a string of epigrammatic antitheses, such as those in which the older historians delight to sum up the character of a king or leading statesman. Impulsive vehemence was associated with a singular power of self-control and a deep-seated reserve not easily penetrated. Free-handed generosity lay side by side with much tenacity of insistence on any right, small or great ; intense self-respect and a somewhat stern independence with a sympathetic geniality of manner, especially toward children, with whom Tyndall was always a great favorite. Flights of imaginative rhetoric,

which amused (and sometimes amazed) more phlegmatic people, proceeded from a singularly clear and hard-headed reasoner, overscrupulous, if that may be, about keeping within the strictest limits of logical demonstration, and sincere to the core. A bright and even playful companion, Tyndall had little of that quick appreciation of the humorous side of things in general and of one's self in particular which is as oil to the waves of life, and is a chief component of the worthier kind of tact ; indeed, the best reward of the utterer of a small witticism or play upon words in his presence was the blank if benevolent perplexity with which he received it. And I suppose the character sketch would be incomplete without an explanation of its peculiarities by a reference to the mixture of two sets of hereditary tendencies, the one eminently Hibernian and the other derived from the stock of the English Bible translator and reformer." The researches on magnetism begun in Marburg were promptly renewed, and for several years after his acceptance of the post at the Royal Institution he was occupied in studying the question of diamagnetic or reversed polarity, the existence of which had been disputed and denied



TYNDALL'S HOUSE.

It may almost be said that during that period he was the Royal Institution. It was then that the most brilliant and not the least practical and useful part of its scientific work was done. Tyndall was an ideal director. He was a first-rate man of science. His place in pure science was one of the very highest, but there were, and are, many men very eminent in pure science who would have been very unfit directors of the Royal Institution.

The establishment in Albemarle Street is a half-way house between science and society. It performs a great deal of scientific work of high value quite independently of other than scientific influences. But it appeals to the public. It gives courses of lectures on a great variety of subjects. Its Friday evenings were at one time a favorite resort of one of the several sets of London society, the most cultivated set, and it was Tyndall who made them so.

You could not get him [Tyndall] to admit that anything was wrong with his darling institution. He

by Faraday. His results were subsequently incorporated in a volume entitled "Researches on Diamagnetism and Magne-Crystallic Action" (1870). In 1859 he began that series of brilliant researches on radiant heat which extended over ten years, resulting in the publication, in 1872, of "Contributions to Molecular Physics in the Domain of Radiant Heat," which, however, was preceded by "Heat as a Mode of Motion" (1863), in which he developed the modern view of the nature of heat which involves a molecular conception of the bodies displaying it. In 1865 he delivered the Rede lecture on "Radiation." He devoted also much attention to the subjects of sound and light, lecturing on both of these topics. His "Heat as a Mode of Motion" was promptly accepted as a classic, and is one of the best popular works ever written on a scientific subject. He followed it with the volume on "Sound, a Course of Eight Lectures," in 1865, and "Notes of a Course of Nine Lectures on Light" in 1870. Concerning these works, it has been well said that "they bring out with magnificent power not only the methods of science, but the grandeur and impressiveness of what may be called its imaginative aspects."

Meanwhile, in 1866 he was called upon to relieve Faraday in his duties in the Trinity House, serving as scientific adviser to the authorities there, especially in connection with inquiries made into the causes which effect the acoustic transparency of the atmosphere. He also held advisory relations to the London Board of Trade, but resigned these appointments in 1883, owing to a disagreement with Joseph Chamberlain, then president of that board.

In 1846 he spent some time among the Westmoreland hills, and three years later made his first visit to the Alps. He was then in need of rest and recreation, but in the presence of the grand physical phenomena displayed there he became interested in the scientific questions which they aroused in his mind. A second visit was made in 1856 in company with Huxley, who writes: "The love for alpine scenery and alpine climbing, which remained with Tyndall to the last, began, or at any rate became intensified into a passion, with this journey, and at the same time he laid the foundations of his well-known and highly important work on glaciers and glacier movement." No year from that time forward passed without a summer visit to his *chalet* at Bel Alp, overlooking the Aletsch Glacier. His investigations of his trip in 1856 were presented to the Royal Society as a joint contribution from the two friends. In 1859 he reached Montanvert and determined the winter motion of the Mer de Glace. In conjunction with Frankland he planted several thermometric stations on the slopes and summit of Mont Blanc and made numerous observations relating to combustion at great altitudes. He sealed the hitherto inaccessible peak of the Weisshorn in 1861, and in 1868 he reached the summit of the Matterhorn, crossing it from Breuil to Zermatt. His writings on these mountains, together with results of his researches, are included in "The Glaciers of the Alps" (1860), which was his first popular book on science; "Mountaineering in 1861" (1862); "Hours of Exercise in the Alps" (1871); and "The Forms of Water in Clouds and Rivers, Ice and Glaciers"

(1872), which formed the initial volume of the "International Scientific Series."

As previously stated, Tyndall had almost decided to settle in the United States in 1844, when an opportune engagement called him elsewhere, and in 1852 he was an unsuccessful candidate for the chair of Physics in the University of Toronto, in Canada, but it was not until twenty year later that he accepted an invitation to deliver a course in the Lowell Lectures in Boston. He arrived in New York in October, 1872, and after lecturing in Boston delivered courses in Philadelphia, Baltimore, Washington, New York, Brooklyn, and New Haven. From these lectures, after deducting his expenses, there remained the net sum of \$13,033, which amount he placed in the hands of three trustees with instructions to use the interest "for the support of two American pupils who may evince decided talents in physics, and who may express a determination to devote their lives to this work. My desire would be that each pupil should spend four years at a German university, three of those to be devoted to the acquisition of knowledge, and the fourth to original investigation." This failed to yield the desired results, and in 1885, the original fund having increased to \$32,400, it was decided to divide this sum into three equal amounts, to be given, one to Columbia College, one to Harvard University, and one to the University of Pennsylvania, for the founding of three permanent fellowships in physical science. Tyndall decided on this action before coming to the United States. He wrote, in June, 1871: "I don't want your money, nor will I bring away one dollar of it. I will help your scientific institutions with it; but it shall not be said that I went to America to line my pockets."

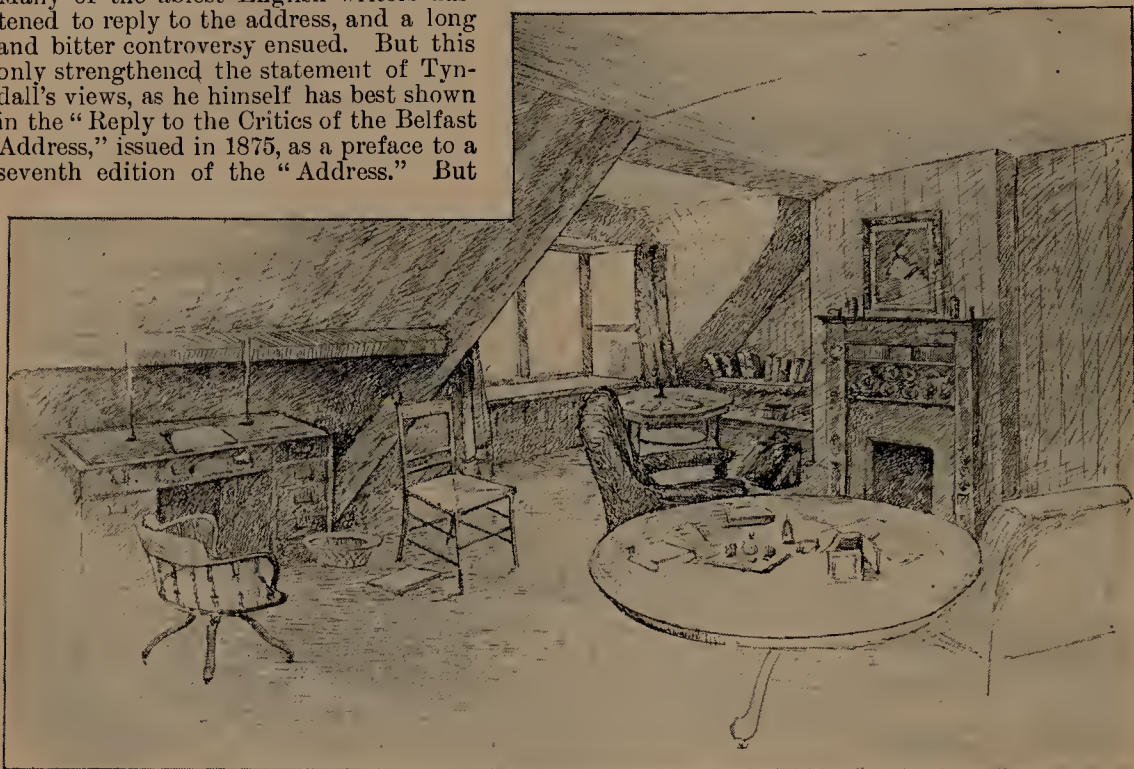
It was also during 1872 that in an issue of the "Contemporary Review" he published a letter addressed to himself in which the writer proposed to have set aside in a hospital a ward for patients who should be prayed for. In the other wards were to be placed patients who were not prayed for. All were to receive the same treatment, and the result was to be noted and accepted as a test of the efficacy of prayer in curing diseases or ailments. The proposition was declined, but not until considerable acrimonious controversy had taken place over what was called "Tyndall's prayer-test."

In August, 1874, the British Association met in Belfast with Tyndall as its president. His inaugural address was a most masterly effort, and was written in a style of remarkable grace and vigor. It traced the sources of natural phenomena from the atom upward, culminating in "the confession that I feel bound to make before you is that I prolong the vision backward across the boundary of the experimental evidence and discern in that matter, which we in our ignorance, and notwithstanding our professed reverence for the Creator, have hitherto covered with opprobrium, the promise and potency of every form and quality of life." The address closed with the sentiment; "Here, however, I must quit a theme too great for me to handle, but which will be handled by the loftiest minds ages after you and I, like streaks of morning cloud, shall have melted into the infinite azure



of the past." These bold words, so distinctly expressive of a belief in the advanced views of evolution as taught by Darwin, Huxley, and Spencer, were not allowed to pass unnoticed. Many of the ablest English writers hastened to reply to the address, and a long and bitter controversy ensued. But this only strengthened the statement of Tyndall's views, as he himself has best shown in the "Reply to the Critics of the Belfast Address," issued in 1875, as a preface to a seventh edition of the "Address." But

presided. In his speech of acknowledgment he said: "In 1850, during a flying visit from Germany to England, I stood for the first time in the bright presence of Faraday. In February,



TYNDALL'S STUDY.

so free an expression of "advanced views" was not without certain disadvantages, and later he wrote: "Few persons at the present day have more distinctly avowed belief in the 'potency of matter,' and few have paid more dearly for that avowal than myself." Indirectly from this controversy came an expression of a belief in spontaneous generation by some writers, followed by a distinct denial of such a possibility by others. Tyndall at first leaned to the positive side of this question, and promptly instituted a series of experiments that yielded negative results. His contributions to this subject were collected as "Essays on the Floating Matter of the Air in Relation to Putrefaction and Infection" (1881). (See "Germ Theory and Spontaneous Generation," in the "Annual Cyclopædia" for 1878, page 387.)

Among his other works are the following: "Faraday as a Discoverer" (1868); "Natural Philosophy in Easy Lessons" (1869); "On the Scientific Use of the Imagination" (1870); "Fragments of Science for Unscientific People" (1871); and "New Fragments" (1892). His scientific honors were many. The Royal Society gave him its Rumford medal for his researches in thermodynamics. Cambridge gave him the degree of LL. D. in 1855, and Edinburgh similarly honored him in 1866, while Oxford bestowed her D. C. L. upon him in 1873.

In 1887 he retired from the Royal Institution, and at that time was honored with a banquet over which the President of the Royal Society

1853, I gave my first Friday evening lecture in the Royal Institution, and three months afterward, on the motion of Faraday, the old chair of Natural Philosophy, which had been filled at the beginning of the century by Thomas Young, was restored, and to it I was elected."

Subsequently, with the exceptions of his visits to the *chalet* in the Alps, the remaining years of his life were spent at his home, in Haslemere, Surrey, tenderly cared for by his wife, Lady Louise Charlotte Hamilton, whom he married in 1876. She became his assistant and acted as his secretary and amanuensis. It was during these last years that he so violently expressed his disapprobation of Gladstone's home-rule policy, and in terms so bitter that they were even offensive to some of Gladstone's most resolute opponents. He was a sufferer from insomnia and rheumatism, and these may, perhaps, have been the cause of his bitterness. His death was the result of an accident caused by an overdose of morphine given him by his wife, of whom Huxley so pleasantly writes: Her "whole life had been, for many years, devoted to the one object of preserving that of her husband." More than twenty years ago the greatest of living physicists, Helmholtz, of Berlin, said of Tyndall: "The greater part of his activity has always been given to scientific investigation, and we owe to him a series of highly original and remarkable researches and discoveries in physics and physical chemistry." Such was the opinion of the greatest of one only a little less great.

## U

**UNITARIANS.** The "Yearbook of the Unitarian Congregational Churches" for 1894 gives lists of 459 Unitarian societies and 517 ministers in the United States and Canada. The chief representative meeting of these churches is the National Conference of Unitarian and Other Christian Churches, which meets biennially. Contributing churches are also represented in the American Unitarian Association, the purposes of which are to collect and diffuse information respecting the state of Unitarian Christianity in our country; to promote union, sympathy, and co-operation among liberal Christians; to publish and distribute doctrines and tracts inculcating the views of religion regarded by Unitarians as correct, in such form and at such price as shall make them acceptable and obtainable; to supply missionaries; and to assist in building churches and supplementing insufficient salaries of clergymen. The association consists of life members—made so by contributing \$50; delegate members, representing churches which make contributions of funds for missionary uses; and honorary members, who are chosen by the Board of Directors, and have the same rights and privileges as other members. More than 260 societies, contributing to the missionary funds of the association, are entitled to representation in its meetings by their ministers or presidents and 2 lay delegates each. The annual meeting of the association was held in Boston, Mass., May 30. The Hon. G. S. Hale presided. The reports of the directors and the treasurer were read. The association was shown to possess \$548,845 of funds, assets, and property, invested or otherwise, and to be the patron of five schools and academies. Addresses were made on "The Work done in the Unitarian Churches on the East Slope of the Rocky Mountains and on the Pacific Coast," by the Rev. J. W. Chadwick; "The Unitarian and Liberal Churches of Japan," by the Rev. Clay MacCauley; "The Rocky Mountain Conference," by the Rev. Samuel Eliot; "The Prospects of Unitarianism in the East and West," by the Rev. Joseph Waite; "Unitarianism in the South," by the Rev. C. J. K. Jones; "The Position, Prospects, and Needs of Liberal Religion in the West," by John E. Roberts; "The Effect of the Civil War on the Religious Life of America," by the Rev. E. E. Hale, D. D., Rev. G. A. Thayer, Col. T. W. Higginson, and the Rev. Robert Collyer, D. D. Pertinently to the address of Mr. MacCauley conveying the greetings of the Unitarians of Japan, a resolution was passed expressing confidence in the adaptability of the principles and spirit of liberal Christianity to the nature and needs of all mankind, and commending the Japanese mission. President Hale, speaking in his address of the growth during the past six years of active social organizations for religious or partly religious purposes, affirmed that the Unitarian denomination was early in the movement which has spread among others, in such organizations as the Helping Hands, the guilds, the Societies of Christian

Endeavor, the Henry Wadsworth organizations, etc. The other principal general society of Unitarians is the Sunday-School Society, which holds a special meeting in Boston in "Anniversary Week," and an annual meeting in the fall for business, the election of officers, and discussion of Sunday-school work. The annual meeting for 1893 was held in West Newton, Mass., Oct. 25. The treasurer reported a small balance in the treasury. The National Alliance of Unitarian and other Liberal Christian Women is an organization the purpose of which is to enable the women of the denomination to work more efficiently for the advancement of liberal religion. The Ministers' Institute was organized under the auspices of the Council of the National Conference. It meets biennially, in alternation with the meetings of the National Conference. The Ministerial Union has provided a lending library for the use of members in the building of the American Unitarian Association, Boston. Besides these societies, the denomination has theological schools at Cambridge, Mass., and Meadville, Pa., academies at Greenfield, Mass., Andover, N. H., and West Bridgewater, Mass.

Unitarianism is represented in England by the British and Foreign Unitarian Association, founded in 1825, and the National Conference, which was established in 1882, and meets every three years. Three theological schools are maintained, viz., Manchester College, Oxford, Warrington Academy, and the Home Missionary College, Manchester. In Hungary the Unitarians have more than 100 churches, with 50 or more "filial" or "daughter churches," and about 60,000 registered members. The governing authorities are an ecclesiastical council of 350 members, with Bishop Joseph Ferencz and 8 rural deans. The higher education is provided for by the college at Klausenburg, besides which there are middle schools at Thorda and Szeckely-Keresztur. Several native churches have been formed in Japan; and a "Unitarian Review" is published in the native tongue.

**UNITED BRETHREN CHURCH.** This Church suffered a division in 1889, when the General Conference adopted a revision of the Confession of Faith and a new constitution in which were incorporated a provision for the admission of laymen to the General Conference and a modification of the rule prohibiting membership in secret societies. A minority, with one of the bishops, held that these statutes were adopted in an illegal manner, and, withdrawing from the General Conference, organized what they claimed was the legal General Conference. The division extended till it involved many of the annual conferences, and there are now two sets having the same names and territory. The general property and the offices and most of the churches and parsonages remain in the hands of the majority branch, or the "Liberals," as they are currently called. Suits have been instituted in several States for the possession of church property, and have been variously de-



cided by local and State courts, but no final decision has yet been reached. The census of the United States for 1890 gives the Liberal branch 45 annual conferences and 3,731 church organizations in 23 States, with 202,474 communicant members and \$4,292,643 of property; and the Conservative branch, or United Brethren of the old constitution—sometimes, too, called Radicals—765 organizations in 12 States, with 22,870 communicants and \$644,940 of property.

**I. Liberal Branch.**—The twenty-first General Conference met in Dayton, Ohio, May 11. For the first time in the history of the Church lay delegates were present as members of the Conference, in the proportion of 56 to 131 clerical delegates, and 2 of them were women. Allusion was made to these new features in the quadrennial address of the bishops. The address continued with a review of the condition of the Church as it had been affected by the separation, eight years before. It said:

Statistics exhibit our present membership at 204,982. The membership decreased in number from 207,800, as shown in the bishop's address to the last General Conference, to 197,123, as shown by the statistics of the year 1890. This was the lowest point reached as a result of the defection from the Church, which began during the sitting of the last General Conference. It showed a decrease of 10,677. Since then the membership of the Church has been steadily on the increase. The results of the ingathering of the past winter are not, in most of the conferences, included in these statistics, so that it is safe to say the present membership is about the same in number as reported to the York General Conference. Considering the circumstances through which the Church has passed, this statement furnishes occasion for devout thanks to God.

The number of churches had increased since the last General Conference from 2,609, valued at \$3,757,161, to 2,976, valued at \$4,430,445; besides which there were 564 parsonages, valued at \$502,616. The total contributions of the last year had been \$1,183,030, a gain over the contributions of 1888 of \$146,944, or 80 cents per member. The Missionary Society returned the number of foreign missionaries as 32; of missionaries in mission conferences and districts, 118; and of missionaries in home conferences, 225; making in all 375 missionaries. The Church had 777 members in Germany and 5,978 in Africa. The Woman's Missionary Society had raised more than \$50,000 during the four years, and not less than \$142,383 since its organization, eighteen years before. The cash receipts of the Publishing House for the quadrennium had been \$713,052; the profits had been \$82,490; and the total assets were \$359,576. Forty thousand one hundred and twenty-five dollars had been collected for Church extension, and 66 churches had been aided. The 3,493 Sunday schools had a total enrollment of 262,000, or 55,000 more than the number of church members.

The Young People's Christian Union was approved and recognized and made a distinct department of the work of the Church, and provision was made for the establishment of a newspaper organ devoted to its interests. The office of church-erection secretary was established. It was decided that one half of all the funds collected for missionary purposes, except in the Ohio German Conference, should be paid

into the general missionary treasury, provided that the Board of Missions may return to such conferences as may need more funds to carry on home work such appropriations as it may deem wise; and the conference pledged itself to raise \$100,000 for missions during the coming year. It was ordered that in the election of delegates to the General Conference three times as many candidates as there are delegates to be elected, of either order, shall be nominated by the ministers and by the lay delegates in the annual conferences, respectively, and that from these the delegates shall be chosen by the people. The "time limit" was removed from the pastoral term. Under the rule adopted, pastors will be appointed for a year at a time, but will be subject to reappointment for an unlimited number of years. A rule was adopted forbidding ministers to act in the capacity of traveling evangelists without being appointed to such work by the annual conferences to which they may belong. Bishops N. Castle, D. D., E. B. Kephart, D. D., L. L. D., and J. W. Hott, D. D., were re-elected bishops for another term of four years. The Rev. George A. Funkhouser, D. D., was elected a fourth bishop, but declined to leave his professorship in Union Biblical Seminary to accept the office, and Prof. J. S. Mills, D. D., Ph. D., of Western College, was chosen to the position. Bishop J. Weaver, D. D., who had been in the bishop's office twenty-eight years, was elected *emeritus* bishop; Bishop J. Dickson, D. D., who had been a bishop twenty-four years, and was seventy-three years of age, was not re-elected, but received a testimonial from the conference. Resolutions were adopted declaring total abstinence from all intoxicating drinks to be the duty of every individual; that the liquor traffic is only evil; that high-license laws are utterly at variance with the divine method of treating crime; that no political party has a right to expect, or should receive, the support of Christian citizens so long as it stands committed to the license policy or refuses to put itself in an attitude of open hostility to the saloon; approving an official national recognition of the Christian religion; inviting the application of gospel principles to the labor question; deploring the prevalent tendency to Sabbath breaking and urging the enforcement of laws against Sabbath desecration; insisting on the maintenance of the public-school system with teaching in the English language and opposing the appropriation of public money for sectarian schools; and declaring only such amusements proper to the Christian "as will tend to recreate him physically, mentally, and morally, and that whatever will interfere with his highest growth in any of these lines should not be indulged in."

The Board of Missions, at its meeting after the General Conference, made appropriations to the African Mission of \$7,660; to the mission in Germany of \$2,200; and to the Freedmen's Mission of \$250. Other appropriations to conference and home missions made it \$20,737.

The receipts of the Woman's Board of Missions for the year were \$23,836, and its expenditures \$16,280. It supports, in connection with the home work, a Chinese school with 7 teachers, 45 enrolled pupils, and an average attendance of 18, having property that has increased in value

to double its original cost; and returns in its American, Chinese, and African work 12 American missionaries, 26 native itinerants, 154 appointments, 1,679 members and seekers, and property valued at \$38,000.

The statistical report of Union Biblical Seminary represents its properties, clear of all liabilities, as amounting to \$162,773, and shows a gain of \$34,397 in four years.

**II. United Brethren Church (Old Constitution).**—The General Conference of the Conservative branch met in Indiana in May, and legislated concerning the organization of the boards and benevolences of the Church. The entire educational interests of the Church were put under the care of a general Board of Education, with power to locate and provide for the management and support of such educational institutions as the Church might need. Bishops Milton Wright, H. T. Barnaby, and Halleck Floyd were re-elected bishops for the East, and the Rev. William Dillon, D. D., was elected bishop for the Pacific coast.

**UNITED STATES OF AMERICA**, a federal republic in North America. The Federal Government has for its executive head a President, elected for four years by the majority vote of electoral colleges, whose members, proportioned among the States according to their representation, are elected directly by the people of each State. The legislative power is vested in a Congress of two Houses—a Senate containing 2 representatives from each State, elected by their Legislatures, and a House of Representatives, whose members are elected by districts in the proportion, under the apportionment based on the census of 1890, of 1 to 173,901 of population. The powers of Congress and the Executive are restricted to matters specified in the Federal Constitution.

**The Administration.**—Grover Cleveland, having been elected in November, 1892, to succeed President Harrison, was on March 4, 1893, inaugurated President of the United States. In his inaugural address the President urged the necessity of maintaining a sound and stable currency, and pledged the Executive branch of the Government to use all its power to uphold the national credit and avert financial disaster. He further pledged the Administration to use every effort to carry out the behest of the people, who demanded the reform of the tariff, and declared that the necessity for revenue to support the Government furnishes the only justification for taxing the people. He condemned the disposition to expect from the operation of the Government direct individual advantages, and declared that paternalism should have no place in a republican government. He also condemned bounties and subsidies and reckless pension expenditure. Adlai E. Stevenson, who had been elected Vice-President, took the oath of office and assumed the presidency of the Senate, in succession to Levi P. Morton. The President appointed the following Cabinet, which was confirmed by the Senate: Secretary of State, Walter Q. Gresham, of Illinois; Secretary of the Treasury, John G. Carlisle, of Kentucky; Secretary of War, Daniel S. Lamont, of New York; Attorney-General, Richard Olney, of Massachusetts; Postmaster-General, Wilson S. Bissell, of

New York; Secretary of the Navy, Hilary A. Herbert, of Alabama; Secretary of the Interior, Hoke Smith, of Georgia; Secretary of Agriculture, J. S. Morton, of Nebraska. The following are the principal important departmental appointments made by President Cleveland: Assistant Secretary of State, Edwin F. Uhl, Michigan; Third Assistant Secretary, Edward H. Strobel, New York; Assistant Secretaries of the Treasury, William Edmund Curtis, New York, Charles S. Hamlin, Massachusetts, and Scott Wike, Illinois; First Comptroller, Robert B. Bowler, Ohio; Commissioner of Customs, William H. Pugh, Ohio; First Auditor, Ernest P. Baldwin, Maryland; Treasurer of the United States, Daniel N. Morgan, Connecticut; Register of the Treasury, J. Fount Tillman, Tennessee; Comptroller of the Currency, James H. Eckels, Illinois; Commissioner of Internal Revenue, Joseph S. Miller, West Virginia; Commissioner of Navigation, Eugene T. Chamberlain, New York; Solicitor of Internal Revenue, Robert T. Howe, Ohio; Director of the Mint, Robert E. Preston, District of Columbia; Chief of the Bureau of Statistics, Worthington C. Ford, New York; Chief of the Bureau of Engraving and Printing, Claude M. Johnson, Kentucky; Supervising Architect, John O'Rourke, New Jersey; Solicitor of the Treasury, Felix A. Reeve, Tennessee; Assistant Secretary of War, Joseph B. Doe, Wisconsin; Assistant Secretary of the Navy, William McAdoo, Virginia; First Assistant Postmaster-General, Frank H. Jones, Illinois; Third Assistant Postmaster-General, Kerr Craige, North Carolina; Fourth Assistant Postmaster-General, Robert A. Maxwell, New York; Solicitor-General to the Department of Justice, Laurence Maxwell, Ohio; Assistant Attorneys-General, Holmes Conrad, Virginia, Joshua E. Dodge, Wisconsin, John I. Hall, Georgia, Charles B. Howry, Mississippi, William A. Maury, District of Columbia, John L. Thomas, Missouri, and Edward B. Whitney, New York; First Assistant Secretary of the Interior, William H. Sims, Mississippi; Assistant Secretary, John M. Reynolds, Pennsylvania; Commissioner of the General Land Office, Silas W. Lamoreaux, Wisconsin; Commissioner of Pensions, William Lochren, Minnesota; Commissioner of Indian Affairs, Daniel M. Browning, Illinois; Commissioner of Patents, John S. Seymour, Connecticut; Commissioner of Railroads, Wade Hampton, South Carolina; Assistant Secretary of Agriculture, Charles W. Dabney, Jr., of Tennessee; Superintendent of Immigration, Herman Stump, Washington; Commissioner at New York, Joseph H. Senner; Collector of Customs at the port of New York, James T. Kilbreth.

WALTER QUINTIN GRESHAM was born March 17, 1832, near Lanesville, Harrison County, Ind., and is of an old English family. His father, William Gresham, who was sheriff of the county, was shot while arresting a desperado, and his widowed mother was left with five small children, of whom Walter was next to the youngest, he being only two years old at the time. Mrs. Gresham was poor but very energetic, and she managed the farm and kept the family together. During his boyhood Walter followed the plow by day and studied at night, gaining his education through hard work and self-denial. He went to the district school in the winter season, and when he was sixteen obtained a clerkship in the



county auditor's office, which enabled him to pay his expenses at Corydon Seminary. After two years there he spent a year at Bloomington University, and on his return obtained a place in the county clerk's office at Corydon. Here he studied law in the office of Judge William A. Porter, and at the age of twenty-two was admitted to the bar and began practice. In politics he had been a Whig from boyhood, and he joined the Republican party upon its organization, stamping the State for Gen. Frémont in 1856. Mr. Gresham was elected to the State Legislature in 1860, and as chairman of the Committee on Military Affairs secured the passage of a bill which placed Indiana almost on a war footing. When the war broke out he declined a renomination for the Legislature and enlisted as a private in the Thirty-eighth Indiana Volunteers, and was soon made lieutenant-colonel of the regiment. His first active service in the war was at Shiloh, his next at Corinth, and at Vicksburg he met Gen. Grant. After the surrender Grant and Sherman united in recommending him for a brigadier's commission, which he received. While in command of a division of Sherman's army before Atlanta, Gen. Gresham was shot in the knee, and he has never fully recovered the use of his shattered leg. In 1865 he was brevetted major-general, and on being mustered out began the practice of law in New Albany, Ind. He was offered by President Grant the collectorship of the port of New Orleans, and subsequently the office of District Attorney for Indiana, but declined both offers. He was twice nominated for Congress, but was defeated. In 1869 President Grant tendered him the appointment of United States District Judge for Indiana, which he accepted, and during the twelve years of his judgeship there not one of his decisions was reversed. In 1880 he was a candidate for United States Senator, but was defeated by Benjamin Harrison. President Arthur called Judge Gresham to his Cabinet in 1883, giving him the portfolio of Postmaster-General, and later he succeeded Judge Folger as Secretary of the Treasury. He shared the President's views regarding a revision of the tariff and the reduction of the surplus revenue. He resigned his place in the Cabinet to become United States Judge of the Seventh Judicial District, holding court at Chicago, which place he held for many years, and his deci-



WALTER QUINTIN GRESHAM.

sions have been regarded as models of fairness and legal accuracy. He was a candidate for the Republican nomination for President in 1884, and again in 1888, and refused a nomination from the People's party in 1892. In that year he voted for Mr. Cleveland, giving his reasons in a letter written during the campaign.

JOHN GRIFFIN CARLISLE was born in Campbell (now Kenton) County, Ky., Sept. 5, 1835, and was the youngest son of a large family. He received a



JOHN GRIFFIN CARLISLE.

common-school education, studied law with Senator John W. Stevenson, taught school for a time in Covington, and was admitted to the bar in 1858. He soon came to be regarded as a lawyer of ability, and his practice eventually grew to be one of the largest in Kentucky. In 1859 he was elected to the lower house of the State Legislature. In 1866 he was elected State Senator, and in 1869 was re-elected. From 1871 to 1875 he was Lieutenant-Governor of Kentucky. In 1876 he was elected to Congress, and was continually returned until he succeeded the late Senator Beck in the United States Senate, in 1890. He was chosen Speaker of the House in 1883, and also in 1885 and 1887. He was clear-headed and even-tempered, and none of his rulings were ever reversed by the House. During the Forty-sixth Congress his internal-revenue bill made him the recognized leader of his party on the question of taxation; and in all the succeeding tariff debates he has led his party, both in and out of Congress. Mr. Carlisle is a student, and finds little time for the social side of official life. Mrs. Carlisle comes of an old and well-known Kentucky family, her father being John A. Goodson, first Mayor of Covington. She is a woman of refinement and great decision of character.

HILARY A. HERBERT was born in Laurensville, S. C., in 1838, and while a child was taken by his father to Alabama. He was educated at the University of Alabama and the University of Virginia, and after studying law was admitted to the bar. Upon the breaking out of the war he entered the service of the Confederacy as a captain, and was afterward promoted and became colonel of the Eighth Alabama Volunteers. He was disabled at the battle of the Wilderness, and after the war resumed the practice of law at Greenville, Ala. In 1872 he removed to Montgomery, where he has since practiced. He was elected to the Forty-fifth Congress, and has been returned to every Congress since that time up to and including the Fifty-second. As chairman of the Committee on Naval Affairs he showed decided ability and carried his bills through with little delay. He has during his entire congressional career favored reform in the tariff, and has made many speeches thereon; and he has also supported all measures of civil-service reform. He is opposed to the free coinage of silver, and has often spoken

against it, both in and out of Congress. He has a thorough acquaintance in detail with the affairs of the Navy Department. He has a pleasing personality, and is an effective speaker. In Congress he was known as an energetic worker, very persistent in



HILARY A. HERBERT.

carrying his point, while treating his opponents with courtesy. Mr. Herbert is a widower, with three children, and is fond of society.

DANIEL SCOTT LAMONT was born in Cortlandville, N. Y., Feb. 9, 1851, and is of Scottish ancestry. His father, John B. Lamont, and mother, Elizabeth Scott Lamont, live in McGrawville, Cortland County, N. Y., where the senior Lamont has been a merchant for upward of thirty years. Daniel was educated in the



DANIEL SCOTT LAMONT.

common schools and the McGrawville Academy, and during this time also worked in his father's store. In 1868 he entered the class of 1872 in Union College. He was appointed deputy clerk of the Assembly in

1871, and during the time he held the place made an extensive acquaintance with the public men of the State. He was a delegate from Cortland County to the Democratic State Convention in 1871, and cast his vote with Samuel J. Tilden in his fight against Tweed and Tammany Hall. Mr. Lamont was nominated in 1873 for clerk of Cortland County, and as, though defeated, he ran ahead of his ticket, he was nominated the next year for Assembly, and was defeated by a small majority. At the request of Gov. Tilden he was made deputy clerk of the Assembly. His relations with the Governor were intimate, and he practically managed Mr. Tilden's campaign against the canal ring. In 1876-'77 he served as Chief Clerk of the State Department at Albany, and in January, 1878, bought an interest in the Albany "Argus," and thus became associated with Daniel Manning. In 1882 he retired from the "Argus" to become private secretary to Gov. Cleveland. He was also private secretary to Mr. Cleveland during his first presidential term, and at the end of the term he associated himself with Secretary Whitney and Col. Payne in their enterprises in the city of New York, and undertook the acquirement and consolidation of the street railways and the formation therefrom of the Metropolitan Traction Company, which enterprise was successfully carried out and resulted in a large profit to the promoters and stockholders. In 1874 he married Miss Julia Kinney, of Cortland County, and they have three children.

RICHARD OLNEY was born in Oxford, Mass., Sept. 15, 1835, and his ancestors were among the early Baptists of New England. He was graduated at Brown



RICHARD OLNEY.

University in 1856, studied at Harvard Law School, and entered the law office of Judge Benjamin F. Thomas, in Boston, in 1859. He advanced rapidly in his profession, and was for many years counsel for the Eastern Railroad Company, and after the consolidation was retained as counsel for the Boston and Maine, which place he held when appointed Attorney-General. He was also chief counsel for other railroads. The income from his practice was probably larger than that of any other lawyer in New England. Mr. Olney is known in Boston as an old-line Democrat, but not as an active politician, the only public office ever held by him being that of member of the lower house of the Massachusetts Legislature, in 1874. He has repeatedly declined to allow himself to be nominated for office, and has twice refused a place on the Supreme bench of the State. He once was a candidate for Attorney-General of Massachusetts, but was defeated. He is a



forcible speaker, a fine classical scholar, and of high standing socially. He has a wife and two daughters, both of whom are married.

WILSON SHANNON BISSELL was born in Rome, N. Y., Dec. 31, 1847, and removed with his parents to Buffalo, N. Y., when about six years old. His father, John Bissell, was for many years a forwarding merchant in Buffalo, and his brother, Arthur D., was appointed collector of that port during Mr. Cleveland's first administration. Shannon attended the public schools in Buffalo and Hopkins Grammar School in New Haven, and was graduated at Yale College in 1869. He then studied law in the office of A. P. Lanning, in Buffalo, and in 1872, having been admitted to the bar, became the partner of Lyman K. Bass. In 1874 Mr. Cleveland joined the firm, which became Bass, Cleveland & Bissell. Mr. Bissell has been active in politics since his chief received the nomination for Governor, and has always remained his close personal and political friend. He declined to accept office during President Cleveland's first term, pre-

Cleveland's nomination, and succeeded in giving him the solid vote of the Georgia delegation. Mr. Smith is regarded as one of the ablest lawyers in the South,



HOKE SMITH.

and derives a large income from his practice. He is the controlling owner of the Atlanta "Journal," a Cleveland and tariff-reform organ, and at the time of his appointment as Secretary of the Interior had been for two years President of the Atlanta Board of Education.

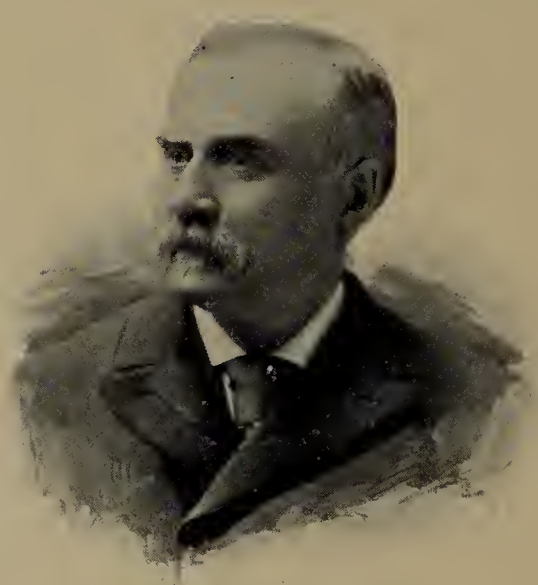
JULIUS STERLING MORTON was born in Adams, Jefferson County, N. Y., April 22, 1832. His parents removed during his infancy to Ann Arbor, Mich., where he attended the public schools. He returned with his parents to his native State, and graduated at Union College. Soon after, and at the age of twenty-two, he married Miss Caroline Joy French, and the young couple settled in Bellevue, Neb. They sub-



WILSON SHANNON BISSELL.

ferring, as he said, to be a friend of the Administration on the outside. Mr. Bissell is an able railroad lawyer, and his present firm enjoys a large practice. He married in 1890 Miss Louisa Fowler Sturges, of Geneva, N. Y., and they have one child.

HOKE SMITH comes of a Revolutionary family from New Hampshire. His great grandfather was an officer in Gen. Washington's army, and his grandfather was one of the shrewdest politicians of New Hampshire. Hoke Smith's father went South to take a professorship in the University of North Carolina, and there met and married a sister of Gen. Hoke. Hoke Smith was born in 1855, was given a good education, and went to Georgia at the age of sixteen. There he began teaching, and in his leisure hours studied law. After his admission to the bar his ability was quickly recognized, and he soon had a good practice, being retained by railroad companies and municipal bodies to conduct intricate negotiations. He entered politics when twenty years old, and soon after was made chairman of the Democratic Executive Committee of Atlanta. He was chairman of the State convention that nominated Gov. Northen, and from that time has been recognized as the tariff-reform leader of the State. He first met President Cleveland during the Piedmont Exposition in 1889, and formed a strong personal attachment for him, and afterward they were in frequent correspondence. At the Democratic National Convention in 1892 he worked hard for Mr.



JULIUS STERLING MORTON.

sequently removed to Nebraska City, where Mr. Morton took editorial charge of the "News" for several years. He was twice a member of the Territorial

Legislature, and in 1858 was Secretary and Acting Governor. In 1860 he was declared elected to Congress by 14 majority, but lost the seat in a contest in the House. In 1886 he was nominated for Governor of Nebraska, but was defeated. He was also an unsuccessful candidate for United States Senator. He was nominated for Governor in 1882, and received 28,000 votes; and again in 1884, when he received 57,000 votes, but still not enough to elect. Mr. Morton has been actively interested in agriculture and horticulture, and has been President of the State board. He also claims to be the originator of Arbor Day. His wife died in 1881, leaving him with four sons.

**The Judiciary.**—Associate-Justice L. Q. C. Lamar, of the Supreme Court, died in Macon, Ga., Jan. 23, and on Feb. 2 President Harrison appointed the Hon. Howell E. Jackson, of Tennessee, to the vacant judgeship, the appointment receiving the sanction of the Senate.

HOWELL EDMUNDS JACKSON was born in Paris, Tenn., April 8, 1832, and is a son of Dr. Alexander Jackson. He graduated at the West Tennessee College in 1848, and subsequently spent two years at the University of Virginia. He afterward graduated from the law school of Cumberland University, and in 1856 began practice in Jackson, Tenn., but removed to Memphis in 1859, where he formed a copartnership with David M. Currin. Soon after the breaking out of the War of the Rebellion he was appointed to a civil position under the Confederate Government, and on the collapse of the Confederacy resumed his law practice in Memphis, where he entered into partnership with B. M. Estes. Later he formed a copartnership with Mr. Ellet, under the style of Jackson & Ellet, and became well known as an able lawyer. He removed to Jackson in 1876. He had served on two occasions as a judge of the State Supreme Court by appointment, and in 1878 was a prominent candidate for nomination on the Democratic ticket for election to the same position. In 1880 he was elected to the State Legislature from Madison County, and was always an advocate of honest dealings with the creditors of the State. In January, 1881, while a member of the Legislature, he was elected to the United States Senate. In April, 1886, he was appointed by President Cleveland to succeed the late Judge John Baxter as Judge of the Sixth United States Judicial District, which includes Tennessee, Kentucky, Ohio, and Michigan, and was serving in that capacity when called by President Harrison to the Supreme Court bench.

Associate-Justice Samuel Blatchford, of the Supreme Court, died at his home in Newport, R. I., in July; and on Sept. 19 the President nominated William B. Hornblower, of New York, as his successor; but there was much opposition in the Senate to the nomination, and it was not confirmed. Subsequently he nominated Wheeler H. Peckham, of New York, but this nomination also was rejected by the Senate. Then he nominated Senator Edward D. White, of Louisiana, who was confirmed.

**Foreign Relations.**—The following diplomatic and consular appointments were made by President Cleveland and confirmed by the Senate: Ambassador to Great Britain, Thomas F. Bayard, Delaware; to France, James B. Eustis, Louisiana; to Germany, Theodore Runyon; to Italy, J. J. Van Alen, Rhode Island. Minister Plenipotentiary to Austria-Hungary, Bartlett Trip, South Dakota; to Belgium, James S. Ewing, Illinois; to Brazil, Thomas L. Thompson, California; to Chili, James D. Porter, Tennessee; to Colombia, Luther F. McKinney, New

Hampshire; to Costa Rica, also accredited to Salvador and Nicaragua, Lewis Baker, Minnesota; to Denmark, John E. Risley, New York; to Greece, and also accredited to Roumania and Servia, Eben Alexander, North Carolina; to Guatemala also accredited to Honduras, P. M. B. Young, Georgia; to Hawaii, Albert S. Willis, Kentucky; to Japan, Edwin Dun, Ohio; to Mexico, Isaac P. Gray, Indiana; to Netherlands, William E. Quimby, Michigan; to Peru, James A. McKenzie, Kentucky; to Portugal, George W. Caruth, Arkansas; to Switzerland, James O. Broadhead, Missouri; to Turkey, Alexander W. Terrell, Texas; to Venezuela, Frank E. Partridge. Minister Resident and Consul-General to Hayti, Henry M. Smythe; to Persia, Alexander McDonald; Agent and Consul-General to Egypt, Frederic C. Penfield. Consul-General at Vienna, Max Judd; at Tangier, I. I. Barclay; at Rio de Janeiro, William T. Townes; at Shanghai, Alfred D. Jones; at Panama, Victor Vitquain; at Guayaquil, George G. Ballard; at Paris, Samuel E. Morss; at Dresden, William S. Carroll; at Frankfurt, Frank H. Mason; at Liverpool, Patrick A. Collins; at Manchester, Daniel W. Maratta; at Moncton, Wendell A. Anderson; at Guelph, Charles N. Daley; at Calcutta, Van Leer Polk; at Singapore, E. Spencer Pratt; at Guatemala, Henry C. Stuart; at Honolulu, Ellis Mills; at Rome, Wallace S. Jones; at Kanagawa, N. W. McIver; at Mexico, Thomas T. Crittenden; at Nuevo Laredo, Joseph G. Donnelly; at St. Gall, Irving B. Rishman. The President nominated James J. Van Alen, of Rhode Island, as ambassador to Italy, on Sept. 19, and the appointment was confirmed by the Senate on Oct. 20; but it having been freely charged in the public press that the appointment was made solely to reward Mr. Van Alen for his generous contribution to the Democratic campaign fund in 1892, Mr. Van Alen tendered his resignation to the President on Nov. 20. The letter of resignation was made public on Dec. 3, and soon afterward Wayne McVeagh, of Pennsylvania, was nominated, and his appointment was confirmed by the Senate.

His predecessor having accepted the office of arbitrator between the Argentine Republic and Brazil in the missions boundary dispute, President Cleveland received the special envoys appointed by those nations, who laid before him the evidence and argued the case in behalf of their respective governments. The revolutionary outbreak in Brazil led to the massing of a strong United States naval force in the harbor of Rio de Janeiro for the protection of American interests. On Oct. 25 Acting-Rear-Admiral Stanton, the commander of the fleet, having saluted the flagship of Admiral Mello, the leader of the revolt against the Brazilian Government, the President disavowed the act in behalf of the United States and removed the offending commander. Admiral Stanton was, however, restored on Dec. 21, and assigned to command the North Atlantic squadron. The fleet at Rio united with the naval forces of other nations in staying the bombardment of the Brazilian capital by the insurgents, and on Dec. 20 the warships New York, Miantonomah, and Bennington were ordered to Rio. In the organization of the claims commission provided for by the conven-



tion between the United States and Chili, the two governments having failed to agree upon a third member of the commission, the President of the Swiss Republic was requested to intervene as provided in the treaty, and he appointed as such third commissioner the Swiss minister to the United States. The Haytian Government was requested by the United States to modify the law whereby a sailing vessel which has discharged her cargo at a Haytian port is refused clearance until the duties on such cargo have been paid. An American mail steamer was fired on in the port of Amapala, Honduras, because her captain refused to surrender to the military authorities of Honduras a passenger in transit from Nicaragua to Guatemala. Upon the protest of the American minister and his demand for satisfaction, the Honduras Government disavowed the action of its officers and tendered an apology. The questions growing out of the seizure and use of American vessels by insurgents in Honduras and the subsequent denial of commercial privileges to such vessels by the established Government were at the end of the year in a fair way of amicable settlement. With respect to a treaty signed in Paris by the representative of the Government of Liberia, by which certain Liberian territory was ceded to France, but which treaty had not at latest advices been ratified by the Legislature of Liberia, the Government of the United States entered a friendly protest with the French Government against any impairment of Liberian territory without the unconstrained consent of that republic. The work of relocating the boundary marks between Mexico and the United States from Paso del Norte to the Pacific was nearly completed; and the commission to settle the river boundary disputes east of El Paso was making satisfactory progress. The Nicaragua Canal Company, though suffering serious financial embarrassments from the insolvency of the Canal Construction Company, was generously treated by the Nicaraguan Government, and none of the rights under its charter had been lost. Extradition treaties were proclaimed with France, with Norway, and with Russia. There was much popular opposition in this country to the extradition treaty with Russia, and numerous signed petitions were sent to the Senate protesting against its ratification, chiefly on the ground that while political offenses are exempted from its operation, the treaty provides that an attempt against the life of the Czar or any member of his family, when such attempt comprises the act either of murder, assassination, or poisoning, shall not be considered a political offense; whereas the Russian law declares that every evil intention against the life, the health, or honor of the Emperor shall subject the person guilty thereof to the penalty of death; and that evil intention shall be regarded as an actual crime, even though no attempt has been made to carry the intention into effect; whence any revolutionary conspiracy is, under the Russian law, constructively an attempt against the life of the Czar. The treaty was proclaimed on June 6, and on the following day the Government was notified by Russia that her representation at Washington would be raised to the rank of an embassy. The Bering Sea arbitration and the

relations of the United States with Hawaii are fully treated elsewhere. (See articles **BERING SEA ARBITRATION** and **HAWAII**.)

**The Army.**—By act of Congress the army of the United States has been limited since 1875 to 25,000 enlisted men, exclusive of the Signal Corps, the Hospital Corps, and 125 general-service clerks and 45 general-service messengers. The total strength of the army in 1893 was 25,778 enlisted men and 2,144 officers. There were 10 cavalry regiments, consisting of 432 officers and 6,050 enlisted men; 5 artillery regiments, 280 officers and 3,675 enlisted men; 25 infantry regiments, 877 officers, 12,125 men; engineer battalion, recruiting parties, ordnance department, hospital service, Indian scouts, Military Academy, signal service, and general service, 567 officers and 4,142 men. The Ninth and Tenth Regiments of Cavalry and the Twenty-fourth and Twenty-fifth Regiments of Infantry are composed of negro troops commanded by white officers. Major-Gen. John M. Schofield, commanding the army, has his headquarters at Washington. The United States is divided into 8 military departments, as follows: The Department of the East, comprising the New England States, New York, New Jersey, Pennsylvania, Delaware, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Louisiana, Mississippi, Alabama, Kentucky, Tennessee, Ohio, and the District of Columbia, is commanded by Major-Gen. Oliver O. Howard, with headquarters at Governor's Island, N. Y. The Department of the Missouri, comprising Michigan, Wisconsin, Indiana, Illinois, Missouri, Kansas, Arkansas, Indian Territory, and Oklahoma Territory, is commanded by Major-Gen. Nelson A. Miles, with headquarters at Chicago. The Department of California, comprising California and Nevada, is commanded by Brig.-Gen. Thomas H. Ruger, with headquarters at San Francisco. The Department of Dakota, comprising Minnesota, the northern part of South Dakota, North Dakota, Montana, and the post of Fort Yellowstone, Wyo., is commanded by Brig.-Gen. Wesley Merritt, with headquarters at St. Paul, Minn. The Department of Texas, comprising the State of Texas, is commanded by Brig.-Gen. Frank Wheaton, with headquarters at San Antonio. The Department of the Platte, comprising Iowa, Nebraska, Wyoming, Utah, the eastern part of Idaho, and the southern part of South Dakota, is commanded by Brig.-Gen. John R. Brooke, with headquarters at Omaha, Neb. The Department of the Colorado, comprising Arizona, New Mexico, and Colorado, is commanded by Brig.-Gen. A. McD. McCook, with headquarters at Denver, Col. The Department of the Columbia, comprising Oregon, Washington, the western part of Idaho, and Alaska, is commanded by Brig.-Gen. Elwell S. Otis, with headquarters at Vancouver Barracks, Wash. Brig.-Gen. George D. Ruggles was adjutant-general of the army; Brig.-Gen. Richard N. Batchelder, quartermaster-general; Brig.-Gen. William P. Hawkins, commissary-general; Brig.-Gen. George M. Sternberg, surgeon-general; Brig.-Gen. Adolphus W. Greely, chief signal officer; Brig.-Gen. Thomas L. Casey, chief of engineers; Brig.-Gen. Daniel W. Flagler, chief of ordnance; Brig.-Gen.

Joseph C. Breckinridge, inspector-general; and Col. Guido N. Lieber, acting judge-advocate-general. Of field officers below the rank of brigadier-general, there were 71 colonels, 90 lieutenant-colonels, and 211 majors. The expenditure of the Department of War for 1893 was: For salaries and contingent expenses, \$1,992,582; for the support of the military establishment, \$23,377,828; for miscellaneous objects, \$6,077,033; for river and harbor improvements, \$15,296,876; and for fortifications, etc., \$3,266,141; total, \$51,966,075. The new magazine rifle selected for the army by the board appointed for that purpose, and manufactured at the national armory at Springfield, was expected to be issued to the troops in December. The enrolled militia of the several States numbered on the last day of October 112,597 men of all ranks.

**Pensions.**—The total number of names on the pension rolls on June 30, 1893, was 966,012, an increase of 89,944 over the preceding year. Of those on the rolls there were 17 widows and daughters of Revolutionary soldiers, 86 survivors of the War of 1812 and 5,425 widows of soldiers of that war, 21,518 survivors and widows of the Mexican War, 3,882 survivors and widows of Indian wars, 284 army nurses, and 475,645 survivors and widows and children of deceased soldiers and sailors of the civil war. These were pensioned on account of disability or death resulting from army and navy service, and remaining names on the rolls, numbering 459,155, are of those who were pensioned under the act of June 27, 1890, on account of death and disability not chargeable to army service. During the year there were 123,634 new names added to the rolls, and 33,690 were dropped therefrom. On pensions allowed during the year, the first payments amounted to \$33,756,950, including arrears; and the entire expenditure on account of pensions during the year was \$156,740,467.

**Postal Service.**—The number of post-offices in the United States on June 30, 1893, was 68,403, an increase during the fiscal year of 1,284. Of the whole number of post-offices, 3,360 were presidential, an increase in that class of 204. The total number of free-delivery offices was 610, the number added during the year being 42. Under the law 93 additional cities and towns were entitled to this service. The revenue of the department for the year amounted to \$75,896,923, and the expenditure to \$81,074,105. The original estimates for the year ending June 30, 1894, contemplated a surplus of revenue over expenditure of \$872,245, but the present Postmaster-General estimated in December that instead of a surplus there would be a deficit of nearly \$8,000,000. The falling off in the receipts of the department is attributed chiefly to the depressed condition of business throughout the country. The number of domestic money orders issued during the fiscal year was 13,309,735, amounting to \$127,576,433, an increase of 1,240,293 in number and \$7,509,632 in value over the preceding year. Postal notes to the value of \$12,903,076 were also issued during the year. The number of international money orders issued during the year was 1,055,999, of the value of \$16,341,827, an increase over the preceding year of 72,525 in number and \$1,221,506 in value. The total issue of money orders and postal notes during the

year amounted to \$156,821,348. The number of letters and packages mailed for special delivery was 3,375,693, an increase over the preceding year of about 22 per cent. The receipts from special-delivery stamps amounted to \$337,569, and the messengers' fees amounted to \$256,592, leaving a net revenue from this source of \$80,977.

**Indians.**—The Indians in the United States number about 248,000, most of whom are located on 161 reservations, containing 86,116,531 acres of land. About 110,000 of the Indians have to a considerable extent adopted civilized customs, and lands in severalty have been allotted to many. The allotments during the fiscal year ending June 30, 1893, were about 1,000,000 acres to 10,000 individuals. The Government schools for the instruction of the Indians numbered 195, of which 170 were on reservations, and of these 73 were boarding schools. The number of Indian children enrolled during the year as school attendants was 21,138, an increase of 1,231 over the preceding year. The appropriations on account of the Indian Bureau for the fiscal year of 1893 amounted to \$8,342,095, and for the fiscal year of 1894 they were \$7,954,963.

**Chinese Exclusion Act.**—Section 6 of the act to prohibit the coming of Chinese persons into the United States, approved May 5, 1892, and commonly known as the Geary law, made it the duty of all Chinese laborers in the United States to apply at the internal-revenue office in their respective districts within a year from the passage of the act for a certificate of residence, failing which such laborer found in the United States after the expiration of the year provided should be deemed unlawfully in the country, and should be arrested by any United States customs or revenue official or United States marshal and taken before a United States judge, whose duty it should be to order his deportation from the United States. Acting under the advice of the Chinese Six Companies of California, the Chinese generally made no attempt to comply with the law, and out of 100,000 in the country only about 4,000 had registered at the expiration of the year provided for in the act. On May 4, 1893, the day of the expiration of the time for registration, the Secretary of the Treasury issued an order directing all customs and revenue officials to refrain from making any arrests under the act until further orders from the department; and the Attorney-General supplemented this circular by instructing United States district attorneys to defer proceedings under the act. A case to test the constitutionality of the act was made under an arrangement between the Government and the Chinese Six Companies by the arrest of three Chinamen in New York, who were taken before the United States circuit court, and, as they could show no certificates of registration, were ordered to be deported to their native country. The case was then hurried on appeal to the United States Supreme Court, where it was decided that the law was constitutional, and the judgment of the lower court must be affirmed. Justice Gray, in handing down the decision on May 15, said it was thoroughly settled as one of the fundamental principles of the law of nations that every independent nation had the inherent right to keep aliens out of its territory and order them to get out of its territory. It had been



settled in two cases that the power of exclusion might be vested in executive officers, and the aid of the judiciary might be invoked. Matters executive and political in the first instance may then take judicial force. The courts have no right to revise the decisions or the action and effect in these cases. If Congress make a law inconsistent with a treaty, it may give a foreign nation the right to complain, but the duty of the courts of the United States is clear and they must recognize its force. Congress had the right to prescribe what evidence shall be demanded before its judicial tribunals. It was within its power to provide that those aliens who have been a year within the United States without taking out a certificate should be deported. It had the right to define what witnesses should be heard; a right to protect the courts against the testimony of persons who had no regard for the sanctity of an oath. He would not touch upon the policy, the wisdom, even the justice of the act; those questions were for the political, the executive, and legislative departments of the Government, if the act were within their constitutional powers, and it would be out of place for the courts to interfere. Congress had simply provided for the deportation of persons whose presence it considers inconsistent with the public welfare; and there was nothing in the Constitution or the laws which impugned the power of Congress to compel the Chinese to leave the country. Justices Brown, Shiras, Blatchford, and Jackson concurred; Chief Justice Fuller and Justices Field and Brewer filed dissenting opinions; and Justice Harlan was in Paris. Of the appropriation made by Congress for the purpose of carrying out the provisions of the Geary law only about \$37,000 remained unexpended, whereas it was estimated that it would require at least \$5,000,000 to deport the Chinese who were unlawfully in the United States; and after a Cabinet conference the Secretary of State announced on May 17 that it had been decided that as Congress had failed to appropriate sufficient money for the purpose, no attempt would be made by the Administration to carry out the provisions of the act. The Chinese accordingly were allowed to remain undisturbed; and Congress, by an act approved Nov. 3, 1893, extended the time for registering and obtaining certificates for six months from that date, after the expiration of which the provision for deportation should be enforced as provided in the act of 1892.

**UNITED STATES, FINANCES OF THE.**  
The fiscal year of the United States ends on June 30, at which time the receipts and expenditures of the Government for the previous year are made up and published. The condition of the Treasury and of the amount of money in circulation is published monthly, and the condition of the national banks is reported from time to time as called for by the Comptroller of the Currency. The fiscal operations of the Government and the condition of the Treasury and banks will therefore be reported to the latest dates obtainable.  
Of the receipts and expenditures of the Treasury for the year ending June 30, 1893, as compared with that for the previous year, the receipts show an increase of about \$7,000,000 in

internal revenue, and of \$26,000,000 in customs. No marked change appears in the items of any other kind. The expenditures show an increase of \$25,000,000 on account of pensions, and of \$4,000,000 on account of interest on the public debt.  
The several items of both receipts and expenditures for 1893, compared with like items for 1892, will be seen by the following table:

RECEIPTS.		
SOURCES.	YEAR ENDING JUNE 30.	
	1893.	1892.
Internal revenue .....	\$161,027,624	\$153,971,072
Postal service .....	75,896,983	70,930,476
Customs .....	203,355,017	177,452,964
Sales of public lands .....	3,182,090	3,261,876
Tax on circulation of national banks .....	1,392,624	1,261,388
Repayment of interest by Pacific railways .....	971,833	962,438
Sinking fund for Pacific railways .....	2,052,488	1,828,771
Customs fees, fines, penalties, and forfeitures .....	806,919	909,250
Fees, consular and lands .....	1,860,903	1,843,528
Proceeds of sales of Government property .....	697,054	1,027,454
Profit on coinage .....	2,349,471	2,020,512
Revenues of District of Columbia .....	3,111,742	2,967,045
Proceeds of funding bonds of District of Columbia .....	405,164	2,412,744
Tax on seal skins .....	23,978	46,749
Fees, letters-patent .....	1,295,314	1,286,609
Miscellaneous .....	3,287,413	3,685,134
Total net receipts, exclusive of public debt .....	\$461,716,562	\$425,868,260
Public debt, principal .....	347,051,586	381,463,512
Grand total .....	\$808,768,148	\$807,331,772

EXPENDITURES.		
OBJECTS OF EXPENDITURE.	YEAR ENDING JUNE 30.	
	1893.	1892.
Congress .....	\$7,043,871	\$6,725,518
Executive department .....	12,573,557	12,132,669
Judiciary .....	7,091,180	4,855,826
Postal service .....	75,896,983	70,930,476
Deficiency in postal revenues .....	5,946,795	4,051,490
Foreign intercourse .....	1,977,043	1,742,400
Improving rivers and harbors .....	14,799,836	13,017,208
Other expenses, military establishment .....	34,841,937	33,878,243
Constructing new war vessels .....	15,030,227	13,756,500
Other expenses, naval establishment .....	15,105,857	15,417,639
Indians .....	13,345,347	11,150,578
Pensions .....	159,357,558	134,583,053
Construction of public buildings, including sites .....	5,050,797	6,319,277
District of Columbia .....	5,827,525	6,331,961
Dist. of Columbia funding bonds .....	405,156	2,412,744
Interest on public debt .....	27,264,392	23,878,116
Bounty on sugar .....	9,375,131	7,342,078
Miscellaneous .....	48,441,745	47,928,026
Total net ordinary expenditures .....	\$459,374,887	\$415,953,807
Public debt, principal .....	389,530,045	338,995,958
Grand total .....	\$848,904,932	\$754,949,765

The condition of the public Treasury is reported for Dec. 31, 1893, and the several items of assets and liabilities at that time, compared with like items for 1892, is shown in the statement below. It will be seen that the gold coin and bullion in the Treasury decreased about \$80,000,000 during the year, and at the same time there was an increase of silver dollars and bullion of \$37,000,000. Of the United States old issue usually known as

greenbacks, there was an increase of \$29,000,000, owing largely to the issue of currency certificates under act of June 8, 1872, for the redemption of which United States notes of like amount are required to be held.

Of the liabilities, there was a decrease of gold certificates of about \$64,000,000; an increase in that of silver certificates of about \$9,000,000; of currency certificates, \$31,000,000; of Treasury notes of 1890, \$28,000,000; while of the general Treasury balance, including the gold reserve, there was a decrease of about \$40,000,000. This decrease has been brought about by the falling off in the receipts of the Treasury, especially in the receipts of customs since June 30, 1893, the end of the fiscal year reported; consequently, to meet current obligations the Secretary of the Treasury has been obliged to decrease the Treasury balance below the limit of \$100,000,000, which amount had been informally set aside and declared to be a fund for the redemption of United States notes, of which fund \$95,000,000 was procured by the sale of bonds in 1878 under the redemption act of Jan. 14, 1875.

The following table shows the items for 1893 compared with like items for 1892:

ITEMS.	Dec. 31, 1893.	Dec. 31, 1892.
<i>Assets:</i>		
Gold coin and bullion.....	\$158,303,779	\$238,359,801
Standard silver dollars and bullion.....	488,671,062	451,798,037
U. S. notes (old issue).....	44,139,202	15,747,475
Treasury notes of 1890.....	1,194,884	2,705,966
National-bank notes.....	12,357,628	6,043,059
Balances in national-bank depositories.....	15,201,045	15,692,654
Gold certificates.....	75,590	24,254,750
Silver certificates.....	5,038,854	3,748,493
Bonds and interest checks paid.	14,105	13,646
Currency certificates, June 8, 1872.....	40,000	490,000
Minor coins and fractional currency.....	939,085	355,620
Fractional silver coins.....	11,639,467	10,571,481
Total.....	\$737,614,701	\$709,780,982
<i>Liabilities:</i>		
Gold certificates.....	\$77,487,769	\$141,347,889
Silver certificates.....	334,584,504	325,783,504
Currency certificates, June 8, 1872.....	39,085,000	7,590,000
Treasury notes of 1890.....	153,160,151	124,745,623
Redemption national-bank notes.....	6,817,395	6,215,474
Public disbursing officers.....	31,851,146	30,796,751
Outstanding checks and drafts..	4,253,181	4,209,153
Redemption U. S. notes, gold reserve.....	80,891,600	100,000,000
General Treasury balance.....	9,483,955	29,092,588
Total.....	\$737,614,701	\$769,780,982

The public debt of the United States is divided into two classes, one of which is the debt having no reserve, the other the debt for which an equivalent reserve in cash is held. The debt having no reserve of itself fully indicates the net changes in the condition of the outstanding debt, and is shown in the table below.

It will be seen that, except in the legal-tender notes, there has been no material change in the amount of the debt outstanding at the end of the calendar year 1893, as compared with that of the year previous. The increase of \$18,000,000 in the debt without reserve on account of the notes arose from the use of the reserve to pay current expenses:

CHARACTER.	OUTSTANDING.	
	Dec. 31, 1893.	Dec. 31, 1892.
Four and one half per cents. continued at 2 per cent.....	\$25,364,500	\$25,364,500
Four-per-cent. bonds.....	559,610,700	559,592,400
Four-per-cent. certificates.....	64,110	76,180
Old loans matured.....	1,913,530	2,385,045
Old demand notes.....	55,647	55,647
Legal-tender notes (old issue)..	265,789,416	246,681,016
National bank redemption account.....	23,015,908	23,466,502
Fractional notes.....	6,900,505	6,903,462
Total.....	\$882,714,316	\$864,524,752

Of the debt having equivalent cash reserve, there has been a decrease in that of the legal-tender notes equivalent to the increase as above stated, and in that of gold certificates of about \$64,000,000. At the same time there has been an increase of the Treasury notes of 1890 of about \$9,000,000, and of clearing-house certificates \$32,000,000. This statement is of value only as showing the enormous amount of cash held by the Treasury in the character of a financial agent, to meet certificates and notes, and which is available for no other purpose. The amount held in no way affects the net debt of the country. The detailed amounts are shown in the table below:

CHARACTER OF DEBT.	Character of reserve.	OUTSTANDING.	
		Dec. 31, 1893.	Dec. 31, 1892.
Legal tender (greenbacks)	Coin.	\$80,891,600	\$100,000,000
Treasury notes of 1890...	Coin.	153,160,151	124,745,623
Clearing-house certificates	Notes.	39,085,000	7,590,000
Gold certificates.....	Gold.	77,487,769	141,347,889
Silver certificates.....	Silver dollars.	334,584,504	325,783,504
Total.....	...	\$685,209,024	\$699,467,016

The money in circulation outside of the Treasury on Jan. 1, 1894, as compared with Jan. 1, 1893, is shown in the table below. It will be seen that there is an increase in the gold coin of about \$86,000,000; of silver certificates, about \$7,000,000; of Treasury notes, \$29,000,000; of currency certificates, \$32,000,000; and of national-bank notes, \$18,000,000; while there is a decrease in the amount of United States notes of about \$28,000,000, and a small decrease in several of the other items. The large increase in the amount of the gold coin in circulation outside of the Treasury was probably due to the withdrawing of such coin represented by certificates from the Treasury and hoarding it in the banks. The increase in the amount of national-bank notes outstanding can be attributed to the action of the banks in taking advantage of the decreased price in United States bonds which prevailed during the fall on account of the stringency in money to purchase the bonds and take out circulation thereon. The table at the top of the next page shows the money in circulation outside the United States Treasury.

The last statement in 1893 showing the condition of the national banks called for by the Comptroller of the Currency was of Oct. 3, 1893, and comparison of the items of that date is made with like items of Sept. 30, 1892. It will be seen that in number there was an increase during the year of only 8 banks, and that there



CHARACTER.	AMOUNT.	
	Jan. 1, 1894.	Jan. 1, 1893.
Gold coin .....	\$508,602,811	\$412,970,960
Standard silver dollars .....	57,869,589	62,322,936
Subsidiary silver.....	65,854,740	67,327,267
Gold certificates.....	77,412,179	117,093,189
Silver certificates.....	329,545,650	322,085,011
Treasury notes, act of July 14, 1890.....	151,965,267	122,039,656
United States notes.....	302,541,814	330,933,540
Currency certificates, act of June 8, 1872.....	39,045,000	7,100,000
National-bank notes.....	196,181,216	163,361,365
Total .....	\$1,729,018,266	\$1,610,683,874

was a falling off during the period of over \$400,000,000 in the resources of the banks, and of course a like amount in that of the liabilities. The larger part of this decrease arises from the item of loans and discounts, the bank having contracted their accommodations on account of the financial depression prevailing at that period, which has largely continued since. Following is a statement showing number and condition of the national banks at dates named :

ITEMS.	Oct. 3, 1893.	SEPT. 30, 1892.
	3,781 banks.	3,773 banks.
<i>Resources :</i>		
Loans and discounts.....	\$1,843,634,167 51	\$2,171,041,088 11
Bonds for circulation.....	206,463,350 00	163,275,300 00
Bonds for deposit.....	14,316,000 00	15,282,000 00
U. S. bonds on hand.....	2,760,950 00	4,882,250 00
Other stocks and bonds..	143,569,950 46	154,585,514 54
Due from reserve agents.	158,499,644 28	236,434,330 89
Due from national banks.	94,740,014 97	140,516,358 09
Due from State banks....	24,229,106 82	32,572,735 51
Real estate, etc.....	89,151,776 08	87,861,911 86
Current expenses.....	11,071,996 65	10,317,125 23
Premiums paid.....	13,981,867 44	14,029,616 43
Cash items.....	15,359,764 56	17,705,961 31
Clearing-house exchanges	106,181,394 59	105,522,711 81
Bills of other banks.....	22,402,611 00	19,557,474 00
Fractional currency.....	1,026,813 90	934,648 37
Specie.....	224,703,860 97	209,116,378 69
Legal-tender notes.....	114,709,352 00	104,267,945 00
U. S. certificates of deposit	7,020,000 00	13,995,000 00
Five-per-cent. fund with Treasurer.....	8,977,414 18	7,139,564 69
Due from U. S. Treasurer.	1,262,749 85	1,106,987 93
Total .....	\$3,109,563,234 36	\$3,510,094,897 46
<i>Liabilities :</i>		
Capital stock.....	\$678,540,338 93	\$686,573,015 00
Surplus fund.....	246,750,781 32	288,871,424 84
Undivided profits.....	103,474,662 87	101,652,754 66
National-bank circulation.	182,959,725 90	143,423,298 00
State-bank circulation....	75,069 50	75,076 50
Dividends unpaid.....	2,874,697 59	3,888,865 73
Individual deposits.....	1,451,124,330 55	1,765,422,983 68
U. S. deposits.....	10,546,135 51	9,328,144 24
Deposits of U. S. disbursing officers.....	3,776,438 21	4,044,734 04
Due to national banks....	226,423,979 06	352,046,184 05
Due to State banks.....	122,891,098 21	173,607,018 34
Notes and bills rediscounted.....	21,066,737 01	17,132,487 71
Bills payable.....	27,426,937 54	6,549,163 65
Liabilities other than those above stated .....	31,632,352 16	1,979,746 97
Total .....	\$3,109,563,234 36	\$3,510,094,897 46

In this connection it is interesting to note the condition of State banks, and the following abstract is made of the principal items published by the Comptroller of the Currency from the last returns received in his office from such banks in 1893. It will be noted that of State banks there are more in number than of nation-

al banks, although the capital stock is not one half as great. These banks are largely located in the Southern and Western States. The figures do not include returns from loans and trust companies, or from savings banks, holding large amounts of deposits mainly in the New England and Middle States :

GEOGRAPHICAL DIVISION.	No. of banks.	Loans and discounts.	Capital stock.	Deposits.
Total.....	3,855	\$771,071,053	\$258,516,931	\$717,659,359
Eastern States..	14	6,742,197	3,256,675	5,702,150
Rhode Island.....	6	1,603,590	916,675	909,777
Connecticut....	8	5,138,607	2,340,000	4,792,373
Middle States...	318	237,446,780	45,767,807	253,194,912
New York.....	201	188,585,572	33,359,200	198,013,253
New Jersey....	22	8,596,246	1,780,460	7,267,309
Pennsylvania..	85	36,034,769	8,319,697	44,737,284
Delaware.....	4	1,308,162	680,000	1,096,446
Maryland.....	6	2,372,031	1,128,450	2,080,620
Southern States.	651	112,746,022	49,789,926	81,982,511
Virginia.....	90	17,896,543	6,388,588	13,746,018
West Virginia.	45	8,898,965	2,421,676	8,965,823
North Carolina	33	3,936,885	1,913,530	2,446,621
South Carolina	21	2,137,739	1,123,024	671,450
Georgia.....	87	19,349,456	9,363,086	11,486,277
Florida.....	11	701,865	335,000	874,751
Alabama.....	18	1,346,934	900,910	542,731
Mississippi....	63	6,304,167	3,260,925	4,950,993
Louisiana.....	18	8,451,940	2,755,447	8,338,644
Texas.....	4	819,902	450,000	577,219
Arkansas.....	34	3,231,402	1,675,925	2,401,954
Kentucky....	164	33,294,152	15,855,430	21,763,750
Tennessee....	63	6,376,182	3,846,435	5,216,275
Western States.	2,356	306,908,521	100,336,837	311,741,333
Missouri.....	455	74,667,608	19,837,105	74,037,097
Ohio.....	86	23,685,393	7,618,325	30,305,570
Indiana.....	56	9,404,553	4,504,500	7,833,856
Illinois.....	89	20,896,717	7,065,500	18,523,537
Michigan.....	159	33,633,573	12,102,925	54,737,226
Wisconsin.....	118	34,005,058	6,806,900	37,826,560
Iowa.....	177	20,534,832	8,074,420	15,725,403
Minnesota....	133	23,231,221	9,189,000	23,313,059
Kansas.....	531	26,194,633	13,719,137	22,034,475
Nebraska.....	522	30,744,628	11,418,995	27,396,520
Pacific States...	516	107,227,533	59,365,686	65,083,453
Oregon.....	12	763,209	553,800	429,726
Colorado.....	29	3,473,218	1,740,000	3,063,499
Utah.....	5	960,075	750,000	503,599
Idaho.....	5	211,917	157,500	123,196
Montana.....	4	797,650	365,000	482,297
Wyoming.....	5	165,136	94,500	156,006
New Mexico...	2	284,243	113,800	304,347
North Dakota.	72	2,579,233	1,092,340	1,848,005
South Dakota.	135	4,310,649	1,937,053	3,480,688
Washington...	64	7,932,343	4,263,555	6,902,113
Arizona.....	5	536,532	240,200	470,203
California.....	173	84,973,317	47,848,938	46,933,167
Oklahoma.....	5	240,006	159,000	336,607

The total coinage of the country for the fiscal year 1893 amounted to \$43,685,178, of which about \$30,000,000 was of gold. That portion of the act of July 14, 1890, requiring the Secretary of the Treasury to purchase 4,500,000 ounces of silver every month at best rates obtainable, and issue therefor Treasury notes designed to circulate as money, was repealed on Nov. 1, 1893, leaving no authority of any kind for the further coinage of silver dollars, unless, as claimed by some, the difference between the amount paid for the silver bullion purchased under this act and the number of silver dollars into which it could be fabricated, amounting to about \$60,-000,000, could be coined.

Under the provisions of the act of 1890 the total amount of silver purchased from Aug. 13, 1890, the date the act went into effect, to Nov. 1, 1893, the date of the repeal of the purchasing clause, aggregated 168,674,682 fine ounces, costing \$155,931,002, for which Treasury notes of a like amount were issued. This silver would make 218,084,438 silver dollars, indicating a profit in the transaction of \$62,153,436. A small portion of this profit has been coined. The remainder is held by the Treasury as a bullion reserve to meet the payment of the notes upon demand.

The depreciation in the price of silver bullion has caused the bullion value of a silver dollar at present quotations to be worth only about 56½ cents; the average value of such dollar during 1893 was about 65 cents. Various causes are assigned for this depreciation, but the largely increased products of silver would seem to be sufficient to explain it. For the year 1880 the estimated production of silver in the world was about 75,000,000 of fine ounces, and this or less was the yearly production for several preceding years. From that date, however, the production steadily increased, until in 1888 it arose to 109,000,000, in 1890 to 133,000,000, and in 1892 to 151,000,000 ounces fine, the price, meanwhile, falling from \$1.15 an ounce fine to 73 cents, and the low price still continues.

**URUGUAY**, a republic in South America. The Senate is composed of 19 members, 1 for each department, elected for six years by electoral colleges; the Chamber of Deputies has 69 members, elected for three years by direct suffrage. The President is elected for four years. Dr. J. Herrera y Obes was elected President for the term ending March 1, 1894.

**Finances.**—The revenue for the year ending June 30, 1891, was 14,925,363 pesos or dollars, of which 8,302,806 pesos were derived from customs, 1,733,385 pesos from direct taxation, 1,001,468 pesos from patent-office fees, and 3,887,704 pesos from other sources.

The public debt in the beginning of 1893 amounted to 104,072,739 pesos.

**Commerce.**—The total value of the imports in 1892 was 18,404,000 pesos, of which Great Britain imported 5,648,000 pesos; France, 2,259,000 pesos; Germany, 2,092,000 pesos; Italy, 2,020,000 pesos; Spain, 1,776,000 pesos; Brazil, 1,313,000 pesos; the United States, 1,105,000 pesos; the Argentine Republic, 1,073,000 pesos, and other countries, 1,118,000 pesos. Of the exports, 4,514 pesos went to Brazil, 4,479,000 pesos to Great Britain, 4,410,000 pesos to France, 3,165,000 pesos to Belgium, 2,985,000 pesos to Argentina, 2,224,000 pesos to the United States, 2,007,000 pesos to Germany, and 2,148,000 pesos to other countries. The following were the values of the chief exports: Hides and leather, 7,898,000 pesos; wool, 7,420,000 pesos; meat, 4,103,000 pesos; extract of meat, 1,840,000 pesos; tallow, 1,361,000 pesos; animals, 1,115,000 pesos.

**Communications.**—The railroads in operation in 1892 had a length of 980 miles. There were 2,950 miles of telegraphs in 1891. The number of dispatches was 256,467. The post-office forwarded 6,188,073 letters, 50,970 postal cards, and 16,475,572 pieces of printed matter in 1892.

**UTAH**, a Territory of the United States, organized Sept. 9, 1850; area, 84,970 square miles; population in 1890, 207,905. Capital, Salt Lake City.

**Government.**—The following were the State officers during the year: Governor, Arthur L. Thomas, succeeded in April by Caleb W. West, Democrat; Secretary, Elijah Sells, succeeded in May by Charles C. Richards, Democrat; Auditor, Arthur Pratt, Republican; Treasurer, J. D. Barnett, Republican; United States District Attorney, Charles S. Varian, succeeded in May by John W. Judd, Democrat; Superintendent of Common Schools, Jacob S. Boreman; United States Marshal, Irving A. Benton, succeeded in May by Nat. M. Brigham; Chief Justice of the Supreme Court, Charles S. Zane, Republican; Associate Justices, James A. Miner and George W. Bartch, Republicans, and John W. Blackburn, succeeded in May by H. W. Smith, Democrat.

**Finances.**—The following items are from the Governor's report to the Secretary of the Interior in October: The total acreage of public lands disposed of and settled at the Salt Lake Land Office from its opening in March, 1869, to the end of the fiscal year ending June 30, 1893, was 6,245,869, and the total value of the land \$1,469,941. The total assessed valuation of property and improvements is as follows: Real, \$62,019,752; improvements, \$23,364,848; personal, \$23,475,511; total, \$108,860,111.

The total assessed valuation of the property of incorporated cities and towns of the Territory is \$94,533,352, and the aggregate indebtedness \$2,098,030. The former have increased \$7,333,270, and the latter decreased \$17,648. The total number of live stock assessed is 1,666,857, with an assessed valuation of \$8,145,078. The bank statement shows a total capital of \$5,693,643, with deposits aggregating \$9,237,76. The school taxes reach an annual aggregate of \$360,000.

**Transportation Lines.**—Reports of railway construction for 1893 give the amount of track laid in Utah as 19.57 miles, divided among 3 lines. The aggregate mileage is 1,328.

The Utah Central was put into the hands of receivers in November, on petition of the Central Trust Company, of New York, which held a mortgage on the property of the Utah Central in lieu, having guaranteed \$225,000 bonds issued by the railroad company, which had defaulted the last two payments.

The Bear River Canal was sold at auction in May, under foreclosure by a trust company, for \$87,500. The canal system has cost over \$1,500,000, and but one branch of the canal is completed. That branch waters about 5,000 acres, and the land is included in the sale.

**Education.**—The University of Utah this year granted diplomas to a class of 31, of whom the greater part were in the three and four years' normal courses, 1 in the mining, and 3 in the general science course. Arrangements have been made for courses of reading and study for nonresident students. These will be supplemented by lectures delivered by members of the faculty to parties engaging to pay the expenses of the lecturer for travel and entertainment. The university is now on a better footing than ever, Congress having granted to it 60 acres of



the Fort Douglas reservation as a site for buildings if occupied within five years. The commissioners are authorized to locate university lands and sell them at a minimum price of \$2.50 an acre.

The Agricultural College has a new building, for which appropriation was made by the last Legislature. Two new chairs have been established—those of Hydraulics and Lacticology. In April 370 students were enrolled for the coming year.

It has been decided to establish at Salt Lake City a university under the care of the Presbyterian Church. Ogden offered a large cash and land bonus and the building partly finished as a university by the Methodist Episcopal Church. Salt Lake City gives land.

The Church university was opened at Salt Lake City in September. It is founded and endowed by the Church of the Latter-Day Saints, but will be open to students who are not members as well as to members of the Church, and there will be no charge for tuition except, the first year, an admission fee of \$5. It is the intention to have full courses of study leading to the degree of Bachelor of Arts.

**Homes and Farms.**—A census bulletin sums up the showing of statistics on ownership and indebtedness of homes and farms in the Territory:

In regard to farms the conclusion is that 9.43 per cent. of the farm families hire, and 90.57 per cent. own the farms cultivated by them; that 5.55 per cent. of the farm-owning families own subject to incumbrance, and 94.45 per cent. own free of incumbrance. Among 100 farm families 9 hire their farms, 5 own with incumbrance, and 86 without incumbrance. On the owned farms there are liens amounting to \$546,245, which is 24.93 per cent. of their value, and this debt bears interest at the average rate of 10.13 per cent., making the average annual interest charge \$93 to each family. Each owned and incumbered farm, on the average, is worth \$3,670 and is subject to a debt of \$915.

The corresponding facts for homes are that 39.35 per cent. of the home families hire and 60.65 per cent. own their homes; that of the home-owning families, 91.49 per cent. own free of incumbrance, and 8.51 per cent. with incumbrance. In 100 home families, on the average, 39 hire their homes, 5 own with incumbrance, and 56 without incumbrance. The debt on owned homes aggregates \$1,428,698, or 27.70 per cent. of their value, and bear interest at the average rate of 9.71 per cent., so that the annual amount of interest to each home averages \$100. An average debt of \$1,028 incumbers each home which has the average value of \$3,711.

**Mining.**—The product of gold, silver, lead, and copper of the Territory had in 1892 a seaboard value of \$16,276,818. In 1893 it fell off to \$12,832,074, the decrease being in silver, lead, and copper, while the production of gold increased over 40 per cent. Of the condition of this industry the report of the Utah Commission, made in September, to the Secretary of the Interior, says:

Mining is one of the most important industries of Utah—nay, of the whole intermountain region. Until recently it was admittedly the principal factor of progress and improvement in the Territory. Certainly it has been the chief incentive to non-Mormon immigration to the Territory. It has served to stimulate the building of cities, towns, railroads, factories, and agricultural production. It gave remunerative employment to thousands of laborers. But all this is now changed. The mines are closed, their output of gold

and silver, of copper, of lead and iron, is arrested, while as a consequence multitudes of laborers are left stranded in idleness and desperation. The condition of the mining region is indeed deplorable. The Commission speaks of the fact, but does not undertake to trace its controverted source.

The first stage returned from the San Juan gold fields (described in the "Annual Cyclopædia" for 1892, page 772) in January to Dolores, having made the trip to Bluff City and return in four days, with 1 coach, 6 horses, and 21 passengers. Rich strikes have been made in the Henry mountains, and it is predicted that this is the coming gold district of the West. A new mining district was organized there on Jan. 27, to be known as the Gold Belt Mining District.

The report of the United States Inspector of Coal Mines says that, "with one or two exceptions, the mines have been worked in a very primitive and incompetent manner. The superintendents, as a rule, generally open out rooms as soon as the coal is reached (in one case the map has a great resemblance to a fan), and rooms are driven into one another, thereby leaving an insufficiency of pillars to support the roof. Not even in the opening of a coal mine has there been the slightest attention paid to the most elementary study of the geological structure of the coal field, and the result is that the mine is practically worked out when it should only have reached its maximum capacity." The coal output of 1892 is estimated at 360,508 tons.

**The Commission.**—The Appropriation bill in Congress contained, when it came from the House, in February, 1893, a provision abolishing the Utah Commission, and imposing its duties on the Governor, Chief Justice, and Secretary of the Territory, without additional compensation. The Senate Committee on Appropriations proposed to strike out that provision, and after debate it was decided to retain the Commission, \$10,000 being appropriated for their salaries and \$7,000 for expenses. The House concurred in these provisions. H. C. Lett, of Utah, was appointed a member of the Commission, in place of A. G. Saunders, the law requiring that the appointment be made from residents of the Territory in future. The other members, besides the chairman, Commissioner A. B. Williams, of Arkansas, Democrat, are: Gen. John A. McClernand, Democrat, of Illinois; R. S. Robertson, Republican, of Indiana; and Col. Godfrey, Republican, of Iowa.

Among the duties of the Commission was the appointment of registration officers.

The Women's Industrial Home at Salt Lake City was put in charge of the Commission, as directed by Congress. This institution was built by the Government about 1886, "to be used and occupied by it for the purpose of aiding in the suppression of polygamy and of furnishing an industrial home and providing employment and means of self-support for dependent women who renounce polygamy, and the children of such women of tender age." The experiment has cost the National Government nearly \$100,000, and has proved a failure, very few women caring to avail themselves of its privileges. At last reports, there were not more than twenty inmates, of whom about half were children.

**The Columbian Exposition.**—The Territory made a very creditable and satisfactory exhibit at the fair. The agricultural and manufacturing displays were good, and the mineral exhibit was very good. The Utah Sugar Works took the first prize for sugar. Much interest was taken in the Utah silk exhibit in the Woman's Building. Attempts at silk culture, to which the climate is well adapted, were made very early in the history of the Territory. Utah County has a flourishing silk association, and produces some good material. The Utah building was finished early in the season, but the formal dedication was put off to Sept. 8, in order to have the presence of the Tabernacle choir. The singing of the choir was one of the features of the exposition. Utah day was one of the great days of the fair, only two others, up to October, surpassing it in point of attendance—July 4 and Illinois day.

**Statehood.**—The bill to admit Utah as a State passed the Lower House of Congress Dec. 13, having been reported from the Territories' Committee Nov. 2. The committee discussed at length the troublesome question of polygamy and declared that the evil had been suppressed entirely, and that there need be no fear of a revival of the practice in case Utah be admitted to the Union.

**The Escheated Church Funds.**—The personal property of the Church of Jesus Christ of Latter-Day Saints, which has so long been in litigation, was restored by joint resolution of Congress, approved Oct. 25.

**The New Temple.**—The sixty-third annual Mormon Conference at Salt Lake City in April, from the 4th to the 25th, was one of the most notable gatherings of the Latter-Day Saints that have ever been assembled. There were 5 meetings in the Tabernacle, 31 regular dedication assemblies in the Temple, 3 special meetings, and two days devoted to the Sunday-school children. It is estimated that at least 62,000 members of the Church passed through and attended services in the Temple, and about 12,000 Sunday-school children in addition viewed the building. People came from the different settlements from Idaho to Arizona, and even Mexico, and from Colorado to Nevada. The occasion of this unusual gathering was the dedication of the Temple, which has been forty years in building—or, rather, forty years have passed since it was begun.

The original Temple of the Mormons was built in Kirtland, Ohio, in 1834. Their first colony had been guided thither, from various localities in New York and Pennsylvania, by Sidney Rigdon. Joseph Smith asserted that a revelation gave him the dimensions of this Temple—80 feet by 60 feet on the ground. It was completed in 1834, at a cost of \$40,000. The building is still standing, but it is under the control of Joseph Smith, Jr., who stands at the head of the nonpolygamous branch of the Mormons. (See REORGANIZED CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS, in this volume.) In outward appearance the Temple at Kirtland resembles one of the older class of meeting houses in New England.

Soon after the building of the Temple the Mormons left for Nauvoo, Ill., where they built

up and inhabited a prosperous city for about ten years. Here they erected their second Temple, at a cost of about \$1,000,000. Owing to quarrels with the surrounding Gentiles, the Mormons once more, in 1846-'47, moved across the plains to Utah. Joseph Smith and his brother Hyrum



FIRST MORMON TEMPLE, KIRTLAND, OHIO.

had been killed by a mob, and the torch had been applied to Nauvoo. The Temple was spared only to be robbed, and finally burned in 1848. It was a magnificent structure of sandstone, with a very large seating capacity. The height of the dome was 210 feet. A baptismal font, the special feature of this Temple, rested on the backs of 12 oxen, the whole being carved from one immense block of stone.

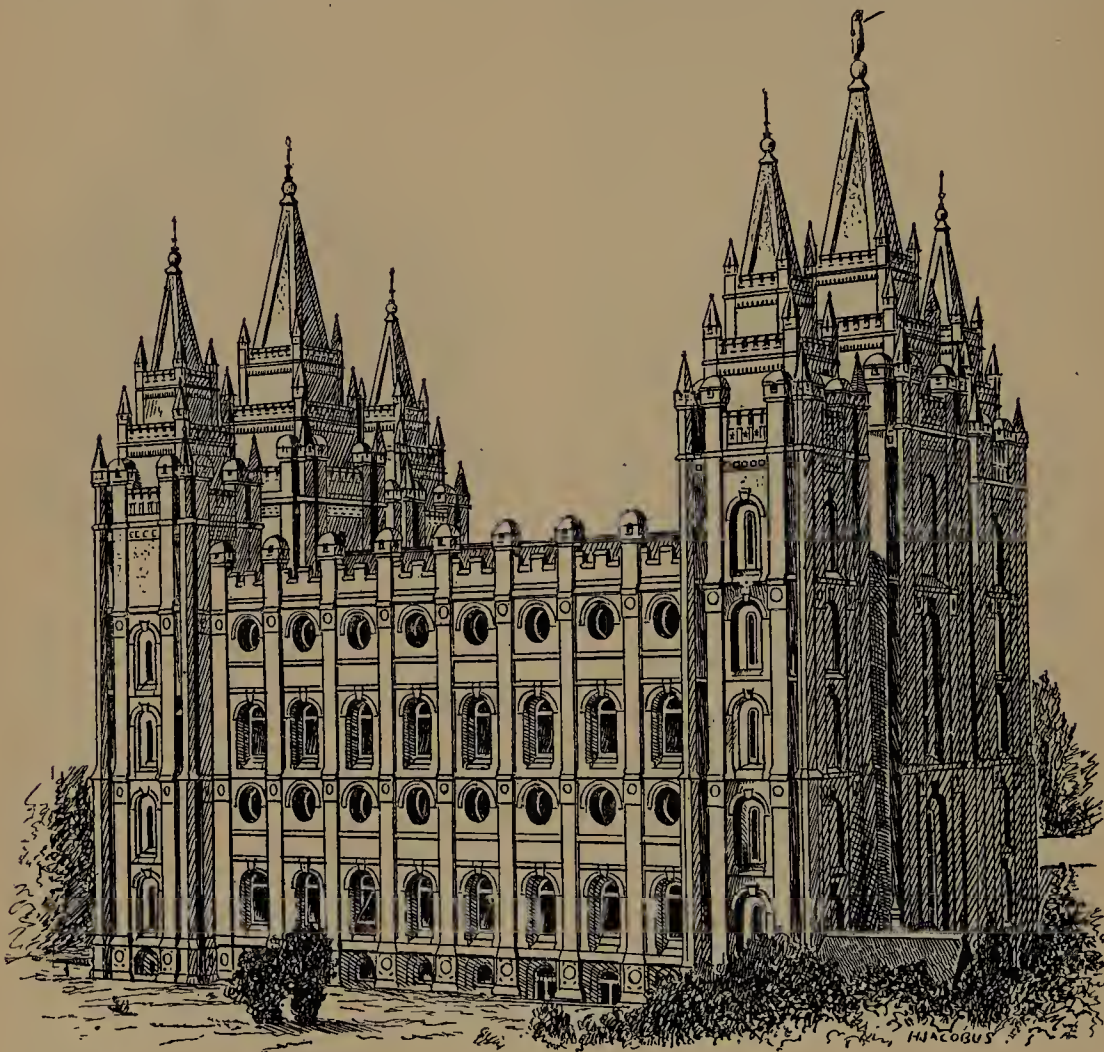
The Mormons have many temples in Utah, Arizona, and Idaho, but the edifice dedicated April 6, 1893, in Salt Lake City, claims pre-eminence. It is the successor of the temples at Kirtland and Nauvoo, from the fact that the dignitaries of the Mormon Church attend within its walls. But it is not the meeting place for large congregations, that function being still reserved for the Tabernacle that stands at the rear of the Temple. The Temple itself is for sacred rites, and none but Mormons are allowed to enter its doors. The site of the Temple was selected by Brigham Young in July, 1847, but a few days after, the Mormon emigrants had crossed the Wasatch range and located themselves on Mexican soil, where Salt Lake City now stands. The colony prospered so rapidly, through thrift, aided by irrigation, that the General Assembly of the Church, in April, 1851, voted to build the Temple. In February, 1853, ground was broken, and on April 6 of the same year (just forty years before the dedication) the four corner stones were laid with impressive ceremonies. At that time the building material most used was adobe. At Red Butte Cañon, close to the city, a red sandstone was found, and of this and adobe it was decided to build the



Temple; but before the foundation was begun a very desirable stone—a gray granite—was discovered at Cottonwood Cañon, 20 miles south of Salt Lake City, and this stone was chosen. For many years the huge stones were carted by oxen, four days being often required for the trip. But of late the work was done more rapidly by the aid of a railroad. The work was interrupted in 1857, when Gen. Albert Sidney Johnston's army was approaching Salt Lake for the purpose of

niversary of the organization of the Mormon Church.

From inception to completion the Temple has been the work of Mormons alone. Brigham Young claimed to have had a revelation giving the measurements, as Joseph Smith had of the old Temple at Kirtland. The plans were drawn by Truman O. Angell, who watched the progress of the work from the beginning, the original plan being followed in all important respects. When



THE NEW MORMON TEMPLE, SALT LAKE CITY.

subduing insubordination to the Government on the part of the Mormons. The people then covered the foundations of the Temple, and fled from the city till the storm had passed. Another interruption came in 1869-'70, when the Union Pacific Railroad was under construction, and still another more recently, when a receiver was appointed under the Edmunds-Tucker act to control the escheated property of the Church, and a seizure of the Temple was made. It was in the possession of the receiver for a short period. Aside from these interruptions the work was prosecuted steadily till the cap stone was laid, on April 6, 1892; and the dedication was set for April 6, 1893, the sixty-third an-

no Mormons were found with skill enough to undertake particular tasks, some of the youths were sent to the Eastern States or to foreign countries to qualify themselves. The elevation does not show the lines of any recognized order of architecture, nor do the details seem to follow any particular order. The Temple is impressive both for its elevated site and for its size. The extreme length is 186 feet 6 inches, and the width 99 feet. With the towers, it covers an area of 21,850 square feet. The foundation wall is 16 feet thick and 16 feet deep. On this the granite walls are 9 feet thick at the bottom, and narrow to 6 feet at the top. There are 6 towers, 3 on the east end, and 3 on the west. The height of the

loftiest spire is 222 feet 6 inches, and the height of the curtain walls that connect the towers is 167 feet. The towers at the 4 corners are 26 feet square at the base. Those on the east are 200 feet high, and on the west 194 feet. The east central tower of the building is 222 feet 6 inches high. It is surmounted by the cap stone, the last piece of work done to the exterior, and by a figure representing the angel Maroni, a statue twelve feet high, of hammered copper plated with heavy gold leaf. The angel Maroni, according to the Mormon belief, appeared and revealed to Joseph Smith the hiding-place of the golden tablets, on which is inscribed the Book of Mormon. This took place at the hill Cumorah, near Palmyra, N. Y., before the Mormons went to Kirtland. At night the figure of Maroni is lighted by electricity. The interior of each of the 4 corner towers is cylindrical, 17 feet in diameter, and granite steps lead from the basement to the roof.

The Temple contains many stones symbolical of the different conditions of mankind. Around the base are earthstones. Above these are moonstones, showing the moon in its various phases, and emblematic of terrestrial glory. Still higher than these are sunstones, typical of celestial or the highest glory of the heavens. There are also star-stones representing the glory of the stars. On the west tower is the *ursa major*, pointing to the polar star, and indicating that there is a fixed guide for fallen mankind in their attempt to return to God.

Cloudstones, and others of a symbolic nature also appear. The main entrance for the Mormons is at the east, and under the main tower. The baptismal font that was the great feature of the Temple at Nauvoo is reproduced on a more elaborate scale in the west end of the basement. The font is of bronze, and it rests on the backs of 12 life-size bronze oxen, 3 looking to the east, 3 to the west, 3 to the north, and 3 to the south. It is a reproduction, as nearly as possible, of the font in the Temple at Jerusalem. The room containing it is 57 feet long and 35 feet wide. The floor is tiled with polished marble, and the ceiling is cerulean. Adjoining alcoves are provided with marble bath tubs for use in anointing with oil. Another large room in the northeast corner of the basement is a lecture hall, known as the Creation room, where the story of the creation of the earth is told as a preparation for the other ceremonies. Still another large room, in the southeast corner, represents the Garden of Eden when it was occupied by Adam and Eve. Both nature and art have been used to make the decoration of this room effective.

Above the basement, three floors occupy the space to the roof. In the basement the knobs, hinges, etc., are of brass. On the first floor they are of plated gold; on the second, of plated silver; on the third, of old silver; and on the fourth, of old bronze. All this hardware was made to order in the design of the beehive, the emblem of the Mormon Church, the clasped hands, and the motto "Holiness to the Lord." The wood used for the interior is quartered oak. Exquisitely wrought basins of onyx are placed at frequent intervals throughout the building. The upper floor contains an assembly room 120 feet long, 80 feet wide, and 36 feet

high. The room has a seating capacity, including the gallery, of nearly 3,000. This was the room in which the dedicatory services were held, two relays of worshipers being in attendance each day for over two weeks. The eastern part of the room is for the Melchisedec priesthood, representing the higher, or spiritual affairs. The west is for the Aaronic priesthood, representing temporal affairs. This division of labor and honors is copied from the arrangement of the original Temple at Kirtland.

The first and second floors are of the most interest. They contain rooms of various sizes for the ceremonial of the Mormon Church. In these rooms, blue and white, relieved with gold, are the prevailing colors. One of them, on the first floor, represents the glory of the celestial kingdom. Another, the celestial room, is the grandest and most beautiful in the Temple. Four massive Corinthian columns break the broad expanse of wall on both the north side and the south. The spaces between the columns form niches for busts of Brigham Young and others prominent in the Church. A statue of the Virgin adorns the west end of the room; and the east end is embellished with two paintings, one of the hill Cumorah, and the other of the place in Missouri where Adam is said to have built an altar after he left the Garden of Eden, which Garden the Mormons believe was in North America. The color of the room is terra cotta, and the ceiling is decorated with bunches of fruits and flowers. In direct contrast to this room is another representing the Garden of Eden after the Fall, where all the elements are discordant and the animal life begins to show signs of contention. An alcove to the south of the celestial room is known as the sealing room, wherein marriages are solemnized.

The Temple is lighted with electricity and heated with hot water. There are two elevators in the western end, but they are little used because the rise of the granite steps is easy and graceful. Estimates of the cost of the Temple vary materially, but it was probably not far from \$12,000,000.

It has a beautiful site, standing on the highest ground in the city and overlooking the business portion south of it, while it is itself overlooked by the mountains on the north. The Tabernacle, with its great turtlelike roof, is west of the Temple on the same terrace.

**Amnesty.**—A petition for general amnesty for all the convicted polygamists was sent to President Harrison in February. Eleven of them were granted amnesty in October, but the general grant to all who had not broken the law since Nov. 1, 1890, was not proclaimed till Jan. 4, 1893. The preamble of the proclamation recited the facts that the president of the Church had issued a manifesto proclaiming the purpose of said Church no longer to sanction the practice of polygamous marriages, and calling upon all members and adherents of said Church to obey the laws of the United States in reference to said subject matter; that by petition, the officials of said Church, pledging the membership thereof to a faithful obedience to the laws against plural marriage and unlawful cohabitation, had applied for the amnesty, in which they were joined by a large number of influential non-Mormons of the



Territory; and that the Utah Commission had recommended it.

**Silver Demonstrations.**—A mass meeting in favor of silver coinage was held at Salt Lake City in July. The Governor presided. Great enthusiasm was shown, and resolutions were passed strongly in favor of a law fully restoring silver, and recommending that "as many as possible of the earnest men of Utah go to Washington to urge such legislation upon Senators and Representatives, and that special invitations be sent to all surrounding States and Territories to unite with Utah in this appeal and to send delegates to Washington instructed to organize with and to work in concert with all silver delegations to go enlisted for the war."

On July 29 a mass meeting of women was held at the same place and a memorial to Congress was adopted.

On April 10 the Ogden Chamber of Commerce passed resolutions implying a boycott on the insurance companies of Hartford, and especially the Connecticut Mutual Life, because the Board of Trade of that city had adopted a preamble and resolutions, "composed of false statements, designed to injure and oppress the cause of silver, and mislead the masses of the people."

**Political.**—The time of holding the general and municipal elections has been changed to the Tuesday following the first Monday in November. Members of the Territorial Legislature were elected Nov. 7, and the results showed large Republican gains. In Salt Lake City the "combined Citizens' and Independent Citizens' ticket" was generally successful, and in Ogden the Republican ticket.

**The Trans-Mississippi Congress.**—The fifth meeting of this congress was held in Ogden, beginning April 24. The object is the discussion of questions effecting the West that may be

subjects of legislation at Washington. Among resolutions adopted were the following:

*Whereas*, The overproduction of either gold or silver has been wholly impossible in the past and is entirely improbable in the future; and,

*Whereas*, The drawing apart of the two metals in relative value is due solely to legislation; and,

*Whereas*, In the opinion of the Trans-Mississippi Congress, the Congress of the United States of America, without the co-operation of any foreign power, restore silver to its ancient and rightful place as a money metal of the world, and keep it there; and,

*Whereas*, What the whole world requires and must have is more standard money to redeem with, and not promises to pay in gold, the purchasing power of which has been constantly increasing, therefore, be it

*Resolved*, That we demand that the Congress of the United States immediately reopen the mints of our country to the free and unlimited coinage of both gold and silver on equal terms, at the present ratio of sixteen to one, and that the Government use the coins of both metals without discrimination.

Other resolutions favored the admission as States of New Mexico, Arizona, Utah, and Oklahoma; approved the Geary law; favored asking Congress for appropriations for finishing the work on Oakland harbor, constructing a deep-water harbor near Los Angeles, completing the opening of the lower Columbia, improving the upper Columbia, the Snake, the Cœur d'Alene, Kootenai, and Arkansas rivers, constructing a fresh-water harbor on Puget Sound, restoring the navigability of Texas rivers, making a deep-water harbor at Rope's Pass, on Corpus Christi Bay, and carrying out the provisions of the Caminetti hydraulic mining law in California. The silver free coinage resolution was passed by a vote of 230 to 40. There was a vote of 71 against recommending Utah for Statehood, but 162 were in favor of it. It was opposed by members of the liberal party of Utah.

## V

**VENEZUELA**, a federal republic in South America. Under the Constitution of June 21, 1893, the Senate is composed of 27 members, 3 from each State, who must be natives of the country and thirty years of age, and who serve four years. The Chamber of Deputies has 63 members, 1 for every 35,000 inhabitants, who are elected for four years by direct universal suffrage in each State. The President and the Council of Government are elected for four years.

Gen. Crespo was proclaimed President on Oct. 10, 1892. In the beginning of 1893 the Federal Council was composed of the following members: Minister of Foreign Affairs, P. E. Rojas; Minister of the Interior and Justice, L. Colina; Minister of Finance, M. Pietri; Minister of War and Marine, Gen. Guzman Alvarez; Minister of Posts and Telegraphs, L. Baptista; Minister of Public Works, M. Tebar; Minister of Public Instruction, S. Gandolphy.

The area of Venezuela is 593,943 square miles, and the population, according to the census of 1891, is 2,323,527, of whom 1,137,139 are males and 1,186,368 females.

**Finances.**—In the budget of 1890-'91 the revenue is figured out to be 35,976,000 bolivars, or francs, and the expenditure the same sum.

The debt on Jan. 1, 1891, amounted to 110,938,687 bolivars. Under the decisions of the claims commission appointed in pursuance of treaties made in 1885 and 1888 Venezuela was bound to pay to the United States \$824,301 in 10 annual installments with interest payable semi-annually. In 1893 the Venezuelan Government was in default for one installment and a year's interest. An arrangement was sought in 1893 for the settlement of the claim of the Venezuela Steam Transportation Company, an American corporation, for the value of property destroyed twenty years before, amounting with interest to about \$750,000.

**Political Events.**—The delay of the Crespo Government in establishing a constitutional régime, and the arbitrary acts of revenge and confiscation committed against the adherents of Palacio, brought the country again to the verge of revolution. An edict of confiscation was issued against the real and personal property of

Palacio, Villegas, Urdaneta, Mendoza, and Pulida, and their followers. This was modified by placing an embargo upon the property of all the executive, judicial, and military officers and the Senators and Deputies who formed part of the usurping Government of those ex-dictators and holding them all liable *pro rata* for the war debt incurred by Crespo. All sales and mortgages made by the Continuistas during the usurpation were declared null and void. In carrying out these decrees against a large number of the wealthiest citizens, the Government made many enemies and provoked revolts in Los Andes, Bolivar, and other States.

Elections for a Constituent Assembly were held in March. While they were in progress the Crespistas, accusing Pietri and some of his colleagues of jobbery and corruption, brought about an entire reconstruction of the Cabinet. The new ministers were: Gen. Guerra, War; Unda, Finance; Barrios, Education; Aveledo, Agriculture; Vallenilla, Governor of the Federal District. The Assembly met on May 2 and elaborated a new Constitution. Gen. Crespo was elected President until a regular election should be held under the Constitution. He appointed the following Cabinet: Gen. Nuñez, Prime Minister; Dr. Rojas, Minister of Foreign Affairs; Colina, Minister of the Interior; Bustamente, Minister of Agriculture, Posts, and Telegraphs; Gen. Raimon Guerra, Minister of War; Gen. Velutini, Minister of Finance. The Assembly authorized a general amnesty, which was forthwith proclaimed by Gen. Crespo. The embargo was removed from the property of the adherents of the late Government. A conspiracy against the new Government was discovered and thwarted, and extraordinary precautions were taken to prevent the landing of arms. Many of the Government party did not like a provision of the new Constitution that permits Senators or Deputies to hold ministerial, administrative, or military appointments and also makes functionaries of the Government and officers of the army eligible to the Federal, State, or municipal legislatures. Another clause, which takes the control of public lands and mines from the individual States and vests it in the Federal Government, was obnoxious to the opponents of centralism, some of whom were in favor of the proposition made by Andueza Palacio to revive the 20 States of the old Federation. Nevertheless, when the election took place in October, Crespo was elected President for the constitutional term beginning Feb. 20, 1894.

**VERMONT**, a New England State, admitted to the Union March 4, 1791; area, 9,565 square miles. The population, according to each decennial census since admission, was 154,465 in 1800; 217,895 in 1810; 235,966 in 1820; 280,652 in 1830; 291,948 in 1840; 314,120 in 1850; 315,098 in 1860; 330,551 in 1870; 332,286 in 1880; and 332,422 in 1890. Capital, Montpelier.

**Government.**—The following were the State officers during the year: Governor, Levi K. Fuller, Republican; Lieutenant-Governor, F. S. Stranahan; Secretary of State and Insurance Commissioner, Chauncey W. Brownell, Jr.; Treasurer, Henry F. Field; Auditor, Frank D. Hale; Superintendent of Education, M. S. Stone; Inspector of Finance, Savings Banks, and Trust

Companies, W. H. Du Bois; Railroad Commissioners, Samuel E. Pingree, Amory Davison, Leon G. Bagley; Chief Judge of the Supreme Court, Jonathan Ross; Assistant Judges, John W. Rowell, Russell S. Taft, James M. Tyler, Loveland Munson, Henry R. Start, and L. H. Thompson.

**Valuations.**—The total grand list of the State for 1893, as reported to the Secretary of State, was \$1,760,518, an increase of \$8,768.42 over 1892. The city of Burlington has a taxable list of \$112,471.63, and Rutland, \$82,852.62. The taxable polls numbered 82,526, being 113 fewer than in 1892.

**Soldiers' Home.**—On Aug. 1 there were 60 inmates of this institution. Its total yearly income is about \$13,000. The State appropriates \$8,000 annually, and the annual contribution from the General Government is about \$5,000. The institution is at Bennington.

**Insurance.**—The report of the insurance commissioners for 1892 shows the number of licensed companies to be 50, from 46 of which reports have been received. These received premiums amounting to \$669,087, paying losses of \$501,252. The ratio of losses paid to premiums was 77 per cent., which, with an average expense ratio of 35 per cent., shows a loss to the companies. Thirteen casualty companies took premiums of \$92,598, paying losses of \$51,004.

**Industrial.**—Reports received by the State Board of Agriculture show that there were 376 unoccupied farms in the State at the beginning of the year. Addison County had 15; Bennington, 26; Caledonia, 48; Essex, 7; Lamoille, 7; Orange, 57; Orleans, 22; Rutland, 18; Washington, 29; Windham, 94; Windsor, 53. Returns to the same board show that during 1892 the sum of \$813,500 was invested in the State in new industries or in enlarging plants already in operation. These new industries give employment to 1,100 persons. Creameries were established in 12 towns, cheese factories in 3, and electric-light plants at Bristol and Hartford. The granite and marble industries show many new firms, while corn-canning factories, shingle mills, machine shops, bobbin and spool mills are found in the list. At Westmore the Willoughby Lake Improvement Company was organized with a capital of \$60,000 for building a summer resort. At Ludlow \$60,000 was invested in a new woolen mill. Burlington and Montpelier have invested \$13,000 in brass foundries. Burlington also has a match factory, with \$15,000 invested, and a new lumber company with a capital of \$25,000. Milton has a new plant for the manufacture of excelsior; Moretown, a chair-stock mill; Randolph, a screen factory; Barton, a ladies' underwear manufactory. Brattleboro and Bethel have enlarged their jelly and shoe manufactories, and Bennington has increased the capacity of its hosiery and jersey mill.

**VIRGINIA**, a Southern State, one of the original thirteen, ratified the Constitution June 25, 1788; area, 42,450 square miles. The population, according to each decennial census, was 747,610 in 1790; 880,200 in 1800; 974,600 in 1810; 1,065,116 in 1820; 1,211,405 in 1830; 1,239,797 in 1840; 1,421,661 in 1850; 1,596,318 in 1860; 1,225,163 in 1870; 1,512,565 in 1880; and 1,655,980 in 1890. Capital, Richmond.



**Government.**—The following were the State officers during the year: Governor, Philip W. McKinney, Democrat; Lieutenant-Governor, J. Hoge Tyler; Secretary of State, H. W. Flournoy; Auditor, Morton Marye; Second Auditor, Josiah Ryland; Treasurer, A. W. Harman; Attorney-General, R. Taylor Scott; Adjutant-General, James McDonald; Superintendent of Public Instruction, John E. Massil; Commissioner of Agriculture, Thomas Whitehead; Railroad Commissioner, James C. Hill; President of the Court of Appeals, L. L. Lewis.

**Legislative Session.**—The General Assembly of 1893-'94 was organized Dec. 6, 1893, and remained in session until Dec. 20, when it adjourned to Jan. 1, 1894. The chief work finished was in deciding the claims of candidates for office. Charges had been made that the Hon. Thomas S. Martin, candidate for the United States senatorship for the full term beginning March 4, 1895, during the last campaign for members of the Legislature, had illegally used money and men in the work of providing for his own election to the United States Senate. A joint legislative committee of seven members devoted several days to the hearing of testimony, and finally reported that there was no evidence to show that any improper methods or means had been used by any candidate for the United States Senate. The General Assembly adopted the report and elected Mr. Martin. Gen. Eppa Hunton was elected to the United States Senate for the short term. Gov. McKinney sent to the Legislature a special message on the subject of taxation.

**Finances.**—The annual report of the State Treasurer for the fiscal year ending Sept. 30, 1893, shows a balance on hand Oct. 1, 1892, of \$1,117,205.73; received in the fiscal year 1892-'93, \$3,297,576.56; disbursed 1892-'93, \$3,750,973.40; balance on hand Oct. 2, 1893, \$663,808.89. The total balance in the treasury to the credit of the several funds on Oct. 2, 1893, was \$992,435.50.

The annual interest on the public debt is \$554,947.44; on the college fund, \$146,067.32; making a total of \$701,014.76. The interest paid out last year was \$1,205,542.07, or \$504,527.31 more than the interest account for the coming year. This difference is due to the fact that last year two years' interest was paid on the public debt, it having accumulated during the process of debt settlement. The two years' interest payment also accounts for the discrepancy between the balances of 1892 and 1893.

The securities deposited with the Treasurer by foreign insurance companies amounted in 1893 to \$2,093,236.37. From the statement of the Virginia debt made by the Second Auditor, showing the amount funded, and the principal and interest unfunded, under the act of Feb. 20, 1892, the following is taken: Owing to delay by the distribution commission in fixing the rate of funding, a manuscript bond for the sum of \$16,359,860 was issued, on which the State duly paid interest for two years, to and including July 1, 1893, amounting to \$654,394.40. The manuscript bond being surrendered to the State July 21, 1893, it was canceled and filed in the treasury, and new engraved bonds were issued in lieu thereof, as follow: Issued to Bondholder's Committee, \$16,359,860; to Commissioners of the

Sinking Fund, \$281,503.49; ready to be issued to Commissioners of the Sinking Fund when called for, \$20,771.68; total issued and ready to be issued, \$16,662,135.17. The coupon bonds under this act are transferable to registered bonds, but the latter are not transferable to coupon bonds. The amount of each class outstanding Oct. 1, 1893, is as follows: Coupon bonds, \$16,121,000; registered bonds, \$515,100; fractional certificates, which can be converted into either coupon or registered bonds, \$5,263.49; total, \$16,641,363.49. The debt unfunded is as follows: Principal, bonds, and certificates issued under acts passed prior to April 17, 1861, under act of March 2, 1866, also sterling certificates issued under act of March 30, 1871, computed as funded at two thirds on account of the deduction of West Virginia's proportion, \$545,933.01; consols, act of March 30, 1871, \$1,015,493.30; peelers, act of March 7, 1872, \$38,781.11; ten-forties, act of March 28, 1879, \$309,900; total, \$1,910,107.42. From this deduct two thirds of old bonds held by United States Government and various internal improvement companies, which are not fundable, \$431,957.33, and there is to be funded \$1,478,150.09. Interest tax-receivable coupons (estimated), \$1,000,000; interest on consols and peelers, registered, \$105,676.75; two-third interest on old bonds, \$892,209.11; black scrip, \$104,491.62; total, \$2,102,377.38. Deduct two thirds of interest due United States and words of internal improvement, \$688,164.43; also interest due more than thirty years which never will be called for, \$250,000; and unfunded interest will amount to \$1,164,212.95; unfunded principal is \$1,478,150.09; total, \$2,642,363.04. This amount, funded at the same rate with that already funded, will yield, in new bonds, \$1,798,047.16, which, with bonds already issued and to be issued, \$16,662,127.10, gives the total debt under the act of Feb. 20, 1892, as \$18,460,174.26. But it is almost certain that the issue will never exceed \$18,250,000, so that the following may be considered a correct statement of Virginia's debt: Principal—outstanding bonds under act of Feb. 14, 1892, \$6,331,581.40; under act of Feb. 20, 1892, \$18,250,000; total, \$24,581,581.40. Annual interest—3 per cent. on \$6,331,581.40 is \$189,923.60; 2 per cent. on \$18,250,000 is \$365,000; total, \$554,923.60.

**Taxation.**—The value of real estate owned by whites is \$296,371,055; of personal property, \$90,373,044; the value of real estate owned by colored people is \$9,829,583; of personal property, \$3,465,370; total real-estate valuation, \$306,200,658; total valuation of personal property, \$93,838,414. Total tax assessed against whites, \$1,824,153.74; against colored people, \$172,391.28; total tax, \$1,996,545.02. The live stock numbers 1,779,629 head, and is valued at \$21,863,600. The receipts from the oyster tax for the year were \$32,865, an excess of \$17,865 over the receipts of 1892.

**Railroads.**—As there was no construction of roads in 1893, the total mileage in the State is 3,862.64 miles. The gross earnings were \$31,765,330.81, an excess of \$2,062,304.22 over 1892. The amount of tax paid by the railroads was \$508,702.98, which is about one sixth of all the taxes collected.

**Internal Revenue.**—The report of the Commissioner of Internal Revenue shows that during the fiscal year Virginia paid \$2,912,548.28. She is the largest exporting tobacco State in the Union. There were operated during the last fiscal year 217 cigar factories, which used 2,309,459 pounds of tobacco for the production of cigars, and 1,974,275 for the manufacture of cigarettes. The number of cigars produced was 130,836,613, and the number of cigarettes was 750,314,752. The amount of license tax paid was \$687,297.74, of which amount \$296,786.71 was derived from liquor licenses.

**Education.**—The biennial report of the Superintendent of Public Instruction covers the years 1892 and 1893, but only figures for the latter year will be cited, as the statistical summaries indicate that as regards the essential elements of growth the year 1893 is without a parallel in Virginia. There are in the State 6,636 school-houses, having a seating capacity for white pupils of 254,158, for colored pupils of 112,646. In these schools 5,868 white teachers and 2,064 colored teachers are employed. The school population (census of 1890) is 377,595 white and 275,831 colored; the number of pupils enrolled during the year was 227,696 white and 120,775 colored; the average daily attendance was 130,398 white and 63,745 colored. The total expenditure for all purposes was \$1,798,157.90, an increase of \$107,692.17 over the expenditure in 1892. The estimated value of school property is \$2,763,584.97; 261 school buildings were erected during 1893, and 238 during 1892.

At the University of Virginia the total attendance was 547, against 516 in 1892. During 1893 the Fayerweather Gymnasium, erected at a cost of about \$31,000, was completed. The funds for this building and its equipment were derived from the Fayerweather bequest of \$100,000. A new dispensary also has been constructed.

At the Virginia Military Institute the whole number of cadets on the rolls was 220. At this institute the average annual expense for a cadet, exclusive of his outfit, is \$530.

The Virginia Agricultural and Mechanical College instructed 116 students during the year, 61 more than in 1892. The cost of the session for each pupil here is estimated at \$175.70, of which \$30 is for tuition. Provision is made by statute for the education of 200 young men from the State, who are not required to pay tuition. As far as is possible, all work about the college is done by students, who receive pay for their services, but the demand for work far exceeds the supply. The cost of maintaining the college during 1893 was \$55,943.93.

At the State Female Normal School tuition is free to 135 students, who bind themselves to teach two years in the public schools of the State if opportunity be afforded them. To those who do not so pledge, tuition is given at a nominal cost of \$30 a session. The charge for board and washing for each session of nine months is \$120. During 1893 the number of students in attendance was 225.

William and Mary College instructed 119 students who pledged themselves to teach two years in the public schools, and who therefore were received at the rates fixed by statute: Ten dollars a month, to include tuition, board, wash-

ing, fuel, and lights. Eighty-five other students attended during the year.

The Medical College of Virginia was attended by 101 students. For a session of nine months the expense is \$90.

The Institution for the Deaf and Dumb and the Blind maintained 92 deaf and dumb and 52 blind pupils. The benefits of the school proper are free to residents of the State, who are required to pay only for board and clothing, \$130.

The annual appropriation is \$35,000.

The Virginia Normal and Collegiate Institute enrolled 323 students. Expenses for regular students for board, rent, and tuition for the session of eight months is \$60. State students are charged \$40.

The Hampton Normal and Agricultural Institute gave instruction to 954 boys and girls—white, colored, and Indian—at an outlay for current expenses of \$82,453.83. Of this amount the State contributed \$16,329.36. Of the graduates of this institution during the twenty-two years of its existence, 2,000 have become teachers, and have instructed 129,475 pupils.

The Miller Manual-Labor School has an endowment of \$1,300,000. The students for the year were 93 girls and 157 boys.

**Insane Asylums.**—In the Western Lunatic Asylum 779 patients were treated during the year. The cost of maintenance was \$100,348.84. For new buildings \$30,859.47 was expended, and the total disbursement was \$146,649.13. The patients made 7,284 new garments during the year. The Eastern Lunatic Asylum had 486 patients under treatment during the year. The disbursement for all expenses was \$78,442.53. The Central Lunatic Asylum added a building for female patients, which accommodates 105. For this purpose the Legislature appropriated \$20,000. The entire cost of maintaining the institution during the year was \$74,140.29. The cost *per capita* was \$102.26, the lowest of all asylums in this country. The Southwestern Lunatic Asylum expended \$44,373.74 in caring for 367 patients.

**Penitentiary.**—The expense of keeping 1,197 prisoners (being the daily average) for twelve months was \$77,384.37. This amount, and an additional sum of \$28,677.75, was received from hire of convicts. Prisoners received for overwork during the year \$9,238.71. On Oct. 1, 1,391 prisoners remained in the Penitentiary, 72 of whom were employed on public works. In 1893 the criminal expenses of the State were \$521,552.54.

**Agriculture.**—The report of the Commissioner of Agriculture shows these items: Amount of appropriation, \$10,000; expended, \$7,585.72; balance, \$2,414.28. Amount received from fertilizer control, \$8,800; expended for carrying out provisions of fertilizer act, \$6,481.35; balance, \$2,318.65. The fertilizer act is designed to regulate the sale and purity of commercial fertilizers, the consumption of which has increased from 57,600 tons in 1887 to over 150,000 tons in 1893. The average yield per acre for 1893 was: Wheat, 96; corn, 83; oats, 96; hay, 70; cotton, 86; tobacco, 86; Irish potatoes, 81; sweet potatoes, 81; peanuts, 78. The truck crops of Norfolk realized more than \$5,000,000, and gave employment to 10,000 to 20,000 people. In response



to petitions signed by 401 farmers, one farmer's institute was held.

**Boundary.**—The circuit court of the United States decided that Maryland dredgers have no right to take oysters from the beds of either Pocomoke river or Pocomoke Sound, these being within the jurisdiction of Virginia. A survey of the waters of the State, to be used in determining her boundary line, is nearly completed.

**Riot in Roanoke.**—On the evening of Sept. 20 a mob attempted to take from the authorities a negro who was accused of assaulting a white woman. The militia was called out to guard the jail, and the negro, in charge of the police, was taken to the woods for concealment. When the mob attacked the doors of the jail the militia fired upon it from the windows; the firing was returned by the mob, and 18 persons were killed and 27 wounded; among the latter was the Mayor. When the officers in charge of the negro attempted to return with him to the jail, he was taken from them and hanged to the nearest tree, and his body was riddled with bullets. A placard was placed upon his body with the inscription: "Mayor Trout's Friend." The feeling against the authorities, who had tried to protect the negro, and against the militia was very strong. The mayor and others were compelled to leave town, and, to satisfy the mob, a committee of citizens suspended from office Mayor

Trout, City-Sergeant Traynhaw, Chief of Police Terry, and Special-Officer McMorris, the city remaining in charge of President Buckner, of the City Council. On the 25th the committee asked all the fugitives to return.

**Jefferson Davis.**—On May 27 the body of Jefferson Davis was removed from the tomb in New Orleans, where it has remained since his death, to Memorial Hall, in that city, where it lay in state until the next day. It was thence removed to Richmond, the funeral train stopping only at Beauvoir, at Montgomery, Greenville, S. C., Atlanta, Ga., and at Raleigh, N. C. Reaching Richmond early Wednesday morning, May 31, the body was taken to the Capitol, where it lay in state through the day, and in the evening it was interred with impressive ceremonies in Hollywood Cemetery, in the grave selected by Mrs. Davis. The cedar coffin in which the body originally was placed was reinclosed in the vault from which it had been taken, which then was closed with a marble slab bearing a facsimile of the autograph of Mr. Davis.

**Confederate Monuments.**—At Charlottesville, on June 7, a monument to the memory of the 1,080 soldiers whose remains are buried in the cemetery at that place was unveiled with appropriate ceremonies, and in Portsmouth, on June 15, a monument to the Confederate dead in Portsmouth was dedicated.

## W

**WASHINGTON**, a Pacific coast State, admitted to the Union Nov. 11, 1889; area, 69,180 square miles; population, according to the census of 1890, 349,390. Capital, Olympia.

**Government.**—The following were the State officers during the year: Governor, John H. McGraw, Republican; Lieutenant-Governor, Frank H. Luce; Secretary of State, James H. Price; Treasurer, Ozro A. Bowen; Auditor, Laban R. Grimes; Attorney-General, William C. Jones; Commissioner of Public Lands, William T. Forrest; Superintendent of Public Instruction, Charles W. Bean; State Printer, Oliver C. White; Adjutant-General, R. G. O'Brien; Chief Justice, R. O. Dunbar; Associate Justices, T. L. Stiles, J. P. Hoyt, T. J. Anders, Elmon Scott.

**Finances.**—The receipts of the State treasury for the year ended Dec. 31, 1893, on general fund account were \$755,153.40, and the disbursements \$745,541.88, leaving a balance of \$9,611.52. The appropriations from the general fund for the current fiscal term of two years ending March 31, 1895, amount to \$2,199,011.08, including \$244,761.08 for deficiencies; and the unpaid warrants drawn in pursuance of such appropriations aggregated, on Dec. 31, 1893, \$983,618.76, bearing 8 per cent. interest. To meet this floating indebtedness, the State Treasurer estimates the revenue receivable under the general tax levy of 1893 at \$835,175, and from liquor licenses, insurance taxes, and fees paid State officers, at \$150,000, for the fiscal term. The receipts on military-fund account during 1893 were \$54,573.70, and the disbursements \$53,077.61. The State's bonded indebtedness is

\$300,000, and bears 3½ per cent. interest. The balance in the bond interest fund, Dec. 31, 1893, was \$6,685.72.

**Assessments and Taxes.**—The State Board of Equalization fixed the total valuation of property for 1893 at \$283,110,032, divided as follows: Real, \$227,201,096; personal, \$41,165,560; railroad track, \$14,743,376. On this valuation the board made the following levies: General fund, \$835,175; military fund, \$56,622; bond interest fund, \$14,155.50. Railroad track was divided for assessment purposes into six classes, and valued at from \$5,300 per mile for first-class to \$1,000 per mile for sixth class.

**Legislative Session.**—The third Legislature began its regular session on Jan. 9, and adjourned on March 9. The railroad legislation of the session was important. Under a peculiar provision of the Washington Constitution any bill disapproved by the Governor after the adjournment of the Legislature passing it must be submitted to the next succeeding Legislature, with a statement of the reasons of the Governor for such disapproval: whereupon such succeeding Legislature is required to vote upon the question whether the bill shall pass, notwithstanding the objections of the Governor. In accordance with this constitutional provision, a measure known as the Wasson bill, passed by the Legislature of 1891 and vetoed by Gov. Laughton, was brought before the Legislature of 1893, and was passed over the veto. The bill provided that no greater charge should be made by railroad companies for carrying wheat, barley, flour, or other mill stuffs, potatoes, melons, or hay than 85 per cent. of the rates charged

for carrying such commodities on Dec. 1, 1890; and that not more than \$5 a ton should be charged for carrying the commodities enumerated for a distance of 500 miles or less. An increase of the maximum rates on other freight, as they existed on Dec. 1, 1890, was forbidden. A forfeiture of compensation in each case of violation, and a fine not exceeding \$500 for each offense, were provided as penalties. Later in the session another measure on the subject of freight rates, known as the Anderson bill, became a subject of contention. It provided for a further decrease of rates. A compromise resulted in its passage, with a provision that no rate greater than 85 per cent. of the rates in effect on Jan. 3, 1893, should be charged for carrying wheat, barley, flour, or other mill stuffs, flaxseed, rye, oats, potatoes, or hay, and that no greater rate than \$4.75 a ton should be charged for carrying the products enumerated in car-load lots for a distance of 500 miles or less. The penalties were made the same as those of the other act. These laws were designed to benefit the farmers of eastern Washington. A bill was passed declaring a failure by a railroad company to build fences along its right of way *prima facie* evidence of negligence in actions for injuries to stock by its trains.

There was also passed over the veto of Gov. Laughton a bill, first passed by the preceding Legislature, making it unlawful for any person or corporation to organize or employ an armed body of men in the State for any purpose whatever, which was aimed particularly against the use of such armed bodies in case of strikes. The act provides that any person violating it shall be punished by a fine of not less than \$1,000, nor more than \$5,000, and in a like sum for each day he shall continue to offend after being once fined. Provision is also made for the imprisonment of offenders against the act, and for the forfeiture of arms and equipments to the State.

A new State land policy was adopted by the enactment of a law placing all school and public lands, tide lands, and harbor-line areas under the supervision of a board of State land commissioners, which superseded other boards. A controversy arose as to the regularity of the passage of the bill providing for this board, and the Attorney-General declined to approve the official bond of one of the commissioners, on the ground that the bill signed by the Governor was not the same as the one passed by the Legislature, and that the constitutional requirements had not been observed in its introduction or its progress. Application was made to the Supreme Court for a writ of mandamus requiring the Attorney-General to approve the bond, which was granted, the Court holding that the enrolled bill of an act of the Legislature, which is duly signed by the presiding officers of both Houses and otherwise appears fair upon its face, is conclusive evidence of the regularity of all proceedings necessary for its proper enactment in conformity with the constitutional provisions.

A fractional section of common-school land near Seattle was set apart as a new site for the State University, and an appropriation of \$150,000 was made for the erection of a building thereon. The following appropriations were also made for the erection of public buildings: For

additions to insane hospitals, \$120,000; addition to Reform School, \$15,000; addition to Penitentiary, \$50,000; new buildings for the Agricultural College, \$70,000; Ellensburg Normal School, \$60,000. Appropriations for normal-school buildings, aggregating \$90,000, were vetoed.

Other acts of the session were as follow:

Enabling cities and towns to validate warrants and other evidences of indebtedness issued in excess of legal authority.

Authorizing cities and towns to purchase and construct water works, systems of sewerage, and gas and electric-light plants.

Regulating fishing in Columbia river and Puget Sound.

To quiet possession and confirm titles to land.

Providing for the appointment of police matrons in cities.

Fixing the legal rate of interest at 8 per cent.

Relative to assignments for the benefit of creditors.

For the prevention of cruelty to children, animals, and birds.

Providing that makers of wills may deposit the same with clerks of the superior court for safe keeping.

For the relief of indigent soldiers, sailors, and marines of the civil and Mexican wars.

Making an additional appropriation of \$55,000 for the State's World's Fair exhibit.

Prohibiting the sale, purchase, and manufacture of cigarettes and cigarette paper.

Regulating the practice of dentistry.

Providing for garnishment proceedings.

To secure secrecy in the transmission of telegraph and telephone messages.

Granting a bounty of one half cent per pound for the production and manufacture of sugar in the State.

Providing for the construction, repair, and improvement of public roads.

To protect salmon and other food fishes in Puget Sound.

Prohibiting divorced persons from contracting marriage within the period in which an appeal from the decree may be taken.

Requiring assignments by insolvents to be for the benefit of all the creditors.

Authorizing the Governor to remove from office all officers appointed by him not liable to impeachment.

For the punishment of bank officers for receiving deposits for a bank while knowing such bank to be insolvent.

Regulating the practice of pharmacy.

For the construction of a State road across the Cascade Mountains by way of the pass north of Mount Baker.

The duty devolved upon the Legislature to choose a Senator in Congress to succeed John B. Allen, whose term expired on March 4; but after a contest that lasted throughout the session the Legislature failed to elect. The membership of the joint convention consisted of 75 Republicans, 28 Democrats, and 9 Populists. A Republican senatorial caucus was held, but as some of the Republican members failed to attend it, there was not a sufficient representation present to constitute a majority of the Legislature. John B. Allen was nominated by the caucus to succeed himself, but the party contest was necessarily left unsettled, and was carried into the Legislature. On the first ballot in the Houses, Allen received 49 votes, 7 less than a majority. The Republicans opposed to Allen, together with one Democrat, voted for George Turner, his vote being 26. Chauncey W. Griggs, the Democratic nominee, received 27, and Governor Teats, the



Populist candidate, 9. On the third day of the balloting in joint convention, there being few changes from the first ballot, a rule was adopted that thereafter but two ballots should be taken each day. The Allen and Turner members, with some few exceptions, voted to the end as they did on the first ballot. Allen's highest vote was 52 and Turner's 28. The last ballot, the hundred and first, stood as follows: Allen 50, Turner 24, Griggs 8, Shaw 15, Van Patten 9. After the adjournment of the Legislature Gov. McGraw appointed John B. Allen as United States Senator to fill the vacancy caused by the expiration of Allen's term and the failure to elect his successor. Mr. Allen presented his credentials to the Senate, but he was refused a seat, the ground being taken that the Governor of a State has no authority to appoint in the case of a vacancy occurring in the senatorial representation of such State while its Legislature is in session which such Legislature fails to fill.

**State Capitol.**—The Legislature authorized the erection of a State capitol, limiting the cost to one million dollars, and making an appropriation therefor of \$500,000 out of a capitol building fund. This fund is to derive its revenue from sales of lands granted to the State by the United States for public buildings at the State capital, amounting to 132,000 acres. Provision has been made for the sale of these lands at public auction in tracts of 160 acres, not more than 10,000 acres to be disposed of at any one sale. But little progress was made during the year toward construction. A commission was appointed to carry out the purposes of the building act; this board called for the submission of plans by architects, and received 187 in response, but at the close of the year a selection had not been made.

**Education.**—During 1893 the State apportioned among the various school districts \$104,169, which sum was mainly derived from interest on the permanent school fund and interest on deferred payments for the common-school lands that have been sold by the State. The permanent school fund on Dec. 31 amounted to \$630,276.46, of which \$508,000 was invested in county and school-district bonds. In November the Supreme Court decided that school-district bonds were municipal bonds within the meaning of the provision of the Constitution regulating the management of the permanent school fund, and that therefore the moneys of that fund might be invested in such school bonds. The last biennial report of the Superintendent of Public Instruction presented the following statistics: Number of districts, 1,720; schoolhouses, 1,515; graded schools, 180; children of school age, 106,130; pupils enrolled, 78,819; average monthly salary paid male teachers, \$52.29; average monthly salary paid female teachers, \$42.16.

**Charities.**—The number of patients in the Western Washington Hospital for the insane on Dec. 31, 1893, was 430, a net increase of 67 since Sept. 30, 1892. The attendance at the School for Defective Youth on Dec. 31, 1893, was 100, 50 being deaf and dumb, 10 blind, and 40 feeble-minded.

**State Lands.**—According to a report of the Commissioner of Public Lands, the lands selected by the State under the grants contained in the

act of Congress providing for the admission of the State into the Union amounted on Dec. 31, 1893, to 432,124.15 acres. Of these selections, the United States district land offices had accepted applications for 341,358.74 acres, and the Secretary of the Interior had approved entries of 27,463.32 acres. The grants aggregate 622,000 acres. In a case involving the right of the Seattle and Montana Railway Company to extend its road across State property at Seattle, the Supreme Court decided that a railway corporation had no authority to condemn a right of way across tide lands owned by the State.

**Harbor Improvements.**—Under the stimulating influence of an act passed by the last Legislature, relating to the excavation of water ways, plans have been projected for improvement of Puget Sound harbors on a large scale. The act provides for the reclamation of tide lands by the excavation of water ways through them, and the raising of the lands bordering on such water ways by placing on them the excavated dirt. The Commissioner of Public Lands is empowered to make contracts for such improvements, the cost thereof to be a first lien upon the land reclaimed. Those who expect to engage in this work are planning to provide large fresh-water basins for ocean vessels at Seattle, Tacoma, and Olympia, that at the first-named city to be secured by the construction of a canal connecting the sound with Lake Washington, while it is proposed to build at Tacoma a broad embankment that will dam the waters of the Puyallup at the point where that river flows into the sound. For Olympia an enterprise similar to the one suggested for Tacoma is proposed for holding the waters of Des Chutes river. The cost of these three projects is estimated by their promoters at \$10,000,000, but it is claimed that the enhanced value of the tide lands affected will be much more than the expense of making the improvements.

**Railroads.**—Railroad construction in the State in 1893 was limited to the completion of the Great Northern transcontinental line and of the Northern Pacific branch from Chehalis to South Bend, the extension of the Spokane and Northern to the Canadian border, and the construction by the Castle Rock Coal Company of a branch 6 miles long to connect its coal mines with the Northern Pacific Railroad. The total increase of mileage was 41.9. The Great Northern company finished track laying on its line to the coast early in January, but the road was not opened to through passenger business until June. The completion of this line was very gratifying to the people of the State, as it was expected to cause a reduction of transcontinental freight rates, and when it was formally opened to traffic Seattle recognized the event by a celebration, of which a coal palace was a conspicuous feature. The total number of miles of railroad in the State is 2,824.

**Minerals.**—Several discoveries were made during the year in the mining districts of gold, silver, lead, copper, and zinc ores, but the work of development was not pushed vigorously. There was some activity in the Cle Elum, Peshastin, and Swank camps, and in the Okanogan country a few new stamp mills and a concentrator were put in. The greatest amount of development work thus far carried on in any of the min-

ing districts has been done in the Monte Cristo region. This district, which is 3 by 5 miles in extent, is traversed by two great glacial gorges running parallel and uniting at their western ends. A railroad 50 miles long has been built into this district at a cost of nearly \$40,000 a mile, and the mining companies in the district have an aggregate capital of \$25,000,000. An interesting discovery of gold quartz was made within the limits of the city of Tacoma on Dec. 5. The latest estimate of the coal area of the State is 1,000,000 acres, extending into 18 counties, and discoveries of new veins have been frequent. A new coal mine is being opened at Roslyn, the shaft of which will be 18 by 30 feet across, and 620 feet from the surface to the coal. The total output of coal for the year is estimated at 1,500,000 tons, about two thirds of which was shipped out of the State. Aluminum has been discovered in Kittitas County and graphite in Lewis County, and companies were organized during the year for working these beds.

**Fisheries.**—An estimate of the fishing catch for the year, aside from the cannery business, is as follows: Salmon, 8,000,000 pounds; sturgeon, 6,000,000 pounds; halibut, 1,500,000 pounds; herring and perch, 1,500,000 pounds; smelt, 1,000,000 pounds; codfish, 220,000 pounds; carp and catfish, 100,000 pounds; oysters, 20,000 sacks; clams, 10,000 sacks. The value of this product is placed at \$915,500.

**Lumber.**—On Dec. 31, 1893, there were in the State 227 sawmills, 300 shingle mills, and 73 sash-and-door and other wood-working factories. The amount invested in the lumber business was estimated at \$25,000,000, and the value of the annual product at \$15,000,000. The output of the mills for 1893 was: Lumber (feet), 1,164,425,880; lath, 436,716,000; shingles, 1,883,868,750. The foreign shipments from Dec. 1, 1892, to Nov. 30, 1893, were: Lumber (feet), 88,717,658; shingles, 1,757,000. The domestic shipments went to 33 States and Territories, and were: Lumber (feet), 364,316,523; shingles, 913,300,000. The number of acres of standing timber in the State is 23,588,512, estimated to contain 410,333,335,000 feet of lumber.

**Pacific Forestry Reserve.**—President Harrison in January withdrew from entry a tract in the Cascade mountains 35 by 40 miles in extent, including Mount Tacoma, and it is expected that Congress will make the withdrawal permanent by creating a national park within the limits of the tract, to be known as the Pacific Forestry Reserve. It embraces some of the wildest and most picturesque scenery in the world. At its center, clustering about Mount Tacoma, are great glacial fields, and in its lower altitudes are beautiful valleys, numerous cataracts, and gigantic forests. Recent calculations have caused the announcement that Mount Tacoma approximates 15,000 feet in height. Its altitude has heretofore been placed at 14,444 feet.

**Road Convention.**—The subject of road improvement has become one of leading consideration throughout the State. The Legislature dealt with it, but not altogether satisfactorily, and at the suggestion of the State Press Association Gov. McGraw called a State road convention to meet at Olympia on Dec. 19. The meeting, which was well attended, disapproved a proposition

favoring the bonding of the State for \$5,000,000 for road and irrigation purposes. Among the resolutions adopted by the convention were the following:

That Congress should donate to the State 25 per cent. of all moneys realized from the sale of public lands in the State, to be used for the purpose of building and maintaining roads.

That moneys accruing to the State from the sale of tide lands be appropriated for road purposes.

That the width of wagon tires be regulated by law, and that the use of wide tires be encouraged by offering rebates of taxes.

That all prisoners convicted of felonies or misdemeanors be required to work public roads.

That Congress should grant to each of the new States 500,000 acres of public land for road-improvement purposes.

That an inheritance tax should be levied on the estates of persons who shall die possessed of property of the value of \$1,000 or more, the revenue arising therefrom to be paid into a State road fund.

That a chair of road engineering should be established in the State Agricultural College.

Provision was made for submitting to the next Legislature a series of bills embodying the views of the convention.

**Horticulture.**—The fruit-raising interest is growing into one of great importance. During the year a great impetus was given to prune growing, and many orchards of that fruit were set out in the western half of the State. In the Yakima country and other sections east of the Cascades peach raising has become very successful, and on lands reclaimed by irrigation in the central portion of the State very thrifty orchards are growing. Apple, pear, cherry, and plum orchards also bear heavily in various sections.

**WEST INDIES,** an archipelago dividing the Caribbean Sea from the Atlantic Ocean. Except the Spanish colonies (see CUBA and PUERTO RICO) and Hayti (see HAYTI and SANTO DOMINGO), the islands are possessions of Great Britain, France, Denmark, and the Netherlands.

**British Colonies.**—The British islands are Jamaica, the Bahamas, Barbadoes, Trinidad, and the Leeward and Windward Islands.

Jamaica has a Legislative Assembly of 18 members, one half of them elective, and the rest official or nominated by the Governor. The present Governor is Sir Henry Arthur Blake. The area of the island is 4,193 square miles. The population in 1891 was 639,491, of whom 488,624 were pure blacks, 121,955 colored or half-breeds, 14,692 white, 10,116 East Indian, 481 Chinese, and 3,623 not specified. Of the East Indians, 7,223 were indentured laborers. The number of marriages in 1891 was 3,560; of births, 24,507; of deaths, 16,040. The military force is 1,434 men. The revenue for 1891 was £779,000, and the expenditure £782,000. The debt is £1,520,000. There are 89 miles of railroad and 695 miles of telegraph. The number of dispatches wired in eighteen months ending March 31, 1891, was 159,499. The post-office in the year 1891-'92 carried 2,760,617 letters. The chief products are sugar, rum, coffee, fruits, sweet potatoes, pimento, cattle, and cinchona. The imports in 1891 were valued at £1,760,000, and the exports at £1,722.

Barbadoes has a Representative Assembly of 24 elected members. The present Governor is Sir J. S. Hay. The island has an area of 166



square miles, and in 1891 had 182,306 inhabitants. It is the headquarters for the British troops, which numbered 35 officers and 854 men in 1893. The chief exports are sugar, rum, and fish. The total value of the imports in 1891 was £1,067,617, and of the exports £814,254. The revenue of the colony was £163,905, and the expenditure £176,800.

Trinidad has a Legislative Council of 8 official and 10 nominated members. The Governor is Sir F. Napier Broome. The area of the island is 1,754 square miles. Population, 200,028. The dependent island of Tobago has an area of 114 square miles and 18,387 inhabitants. There were 6,657 births, 5,612 deaths, and 986 marriages in Trinidad in 1890. The cultivated products are sugar, cacao, coffee, yams and sweet potatoes, and cocoanuts. There is a considerable export of asphaltum obtained from a pitch lake in the center of the island. The labor of Indian coolies is much utilized, and in 1890 there were 4,921 immigrants, mostly of that class. The revenue for 1891 was £488,000; expenditure, £490,000. The imports were valued at £2,097,000, and the exports at £2,059,000. The imports of Tobago were £23,945, and the exports £24,241 in value.

The Leeward Islands have a Federal Legislative Council of 10 elected and 10 nominated members. The Governor is Sir William Frederick Haynes Smith. The island of Antigua produces sugar and pineapples; Montserrat, sugar and lime juice; St. Kitt's and Nevis, sugar; Anguilla, cattle, pineapples, vegetables, and salt; the Virgin Islands, sugar and cotton; Dominica, sugar, fruit, cacao, and timber. The total area of the islands is 701 square miles. The population in 1891 was 127,723, comprising 99,333 pure blacks, 23,320 colored, and 5,070 white people. The financial and commercial statistics for 1891 are as follow:

ISLANDS.	Revenue.	Expenditure.	Imports.	Exports.
Virgin Islands.	£1,512,000	£2,219,000	£1,446,000	£4,633,000
St. Christopher.				
Nevis .....	33,203	45,221	161,105	187,455
Anguilla.....				
Antigua.....	43,506	47,309	167,110	157,463
Montserrat....	6,526	7,303	25,846	24,339
Dominica.....	21,583	24,937	60,730	88,910

The Bahamas have a Representative Assembly elected by popular suffrage, restricted by a property qualification. Sir Ambrose Shea is the Governor. The area is 5,390 square miles, and the population at the last census was 47,565. There were 1,900 births and 1,052 deaths in 1891. The products are sisal fiber, sponges, cotton, fruit, shells, pearls, and ambergris. The export of pineapples in 1891 was valued at £44,842; of preserved pineapples, £3,793; of sponges, £58,682. The total imports were valued at £190,670, and the total exports at £128,010. The revenue was £52,813, and the expenditure £55,804. The sisal-hemp industry has been developed chiefly by the efforts of the present Governor, who went to the Bahamas in 1887. The sisal aloe grew abundantly in the islands, and was a troublesome weed, known as the *pita*, which the farmers dug up and burned with other underbrush in order to clear the land for oranges and pineapples.

The sisal aloe (*Agave rigida*), known also by the Spanish name of *jeniquen* and the Indian names of *mayguay* and *sacqui*, is a native of Yucatan, where it is now also grown for its fiber, but does not reach the perfection of the Bahama product, which is equal to the best Manilla hemp. There are more than 12,000 acres planted, and the cultivation is rapidly increasing. The Government has granted a bounty to producers, and has limited for ten years the amount of land to be granted by the Crown for this purpose. The price of the land is fixed at \$4 an acre, except to the colored people, to whom the Government offers a 10-acre plot for each family for the nominal price of 5s. an acre, payable out of the first crop. Few of them have availed themselves of this opportunity to become independent. The best of the hemp goes to London, where it brings £30 to £40 a ton, while the cost of production is about £12. The minimum yield has been about half a ton of cleaned fiber an acre. The plants are set out in rows 6 feet apart each way. The leaves are old enough to cut in four years, and the plants continue productive for twelve or fifteen years, at the end of which each sends up a quantity of suckers from its roots and a spike from the middle, 12 or 15 feet high, bearing a large number of flowers. The seeds of these are scattered over the ground, and the plants that spring from them are set out in nurseries and transplanted to the field at the end of a year, when their leaves are 12 or 15 inches long. The leaves of the grown plants that are suitable for cutting are from 3 to 6 feet in length. The plantations are continually renewed by rows of young plants set out between the yielding plants. The leaves may be cut continuously throughout the year when they have attained maturity, but are usually harvested twice a year. The leaves are crushed between steel rollers, which leave the greenish-white fiber, constituting about 5 per cent. of the bulk. The fiber is dipped in sea water and then bleached white, in two days, by the action of the air and sunlight, sorted according to length and quality, tied into knots, and pressed into bales of 400 or 500 pounds.

The Windward Islands are divided into three Crown colonies, under the general direction of a Governor. Sir Charles Bruce at the present time, who resides at St. George's, Grenada. The area of Grenada and the Grenadines is 166 square miles, and the population is 54,062; the area of St. Lucia is 237 square miles, and the population is 42,220; the area of St. Vincent is 147 square miles, and the population is 41,054. The chief products of Grenada are cacao, cotton, and spices; of St. Lucia, sugar, cacao, and logwood; of St. Vincent, sugar, rum, cacao, spices, and logwood. The statistics of finances and commerce for 1891 are as follow:

ISLANDS.	Revenue.	Expenditure.	Imports.	Exports.
Grenada . . .	£54,018	£56,450	£176,927	£236,643
St. Lucia . . .	49,326	58,906	222,178	181,503
St. Vincent . .	27,649	28,517	97,889	98,673

**The Danish Antilles.**—The islands of St. Croix, St. Thomas, and St. John form a Danish colony. St. Croix has an area of 74 square miles and 19,783 inhabitants; St. Thomas, an area of 23 square miles and 12,019 inhabitants; and St.

John, an area of 21 square miles and 984 inhabitants. The people are mostly negroes who raise the sugar-cane on their own land, and the principal exports are raw sugar.

**The Dutch Antilles.**—The islands of Curaçao, Bonaire, Aruba, a part of St. Martin, St. Eustache, and Saba form the Dutch colony of Curaçao, which is administered by a Governor with the assistance of a Colonial Council of 3 official and 8 appointed members. The Governor in 1893 was Dr. C. A. H. Barge. The area of the island of Curaçao is 210, of Aruba 95, of Bonaire 69, of St. Martin 17, of Saba 5, and of St. Eustache 7 square miles. The population of Curaçao in 1892 was 27,493, of Aruba 7,888, of Bonaire 4,053, of St. Martin 4,023, of Saba 1,926, and of St. Eustache 1,633. The budget of the colony for 1893 was expected to balance at 694,696 guilders. The imports in 1890 were valued at 3,733,917 guilders. The principal products are Indian corn, beans, cattle, salt, and lime.

**French Colonies.**—The island of Martinique has an area of 380 square miles and 175,863 inhabitants; Guadeloupe, with its dependencies, has an area of 720 square miles and 165,154 inhabitants. Each island has its Governor and elective council, and is represented in the French Parliament by a Senator and 2 Deputies. Martinique produces sugar, manioc, sweet potatoes, and bananas, and to a smaller extent coffee, cacao, and tobacco. The products of Guadeloupe are sugar, coffee, cacao, vanilla, spices, manioc, woods, bananas, sweet potatoes, rice, and to some extent cotton, ramie fiber, and tobacco. The budget of Martinique for 1890 makes the receipts 3,993,000 francs and the expenditures the same, and that of Guadeloupe makes them balance at 5,940,000 francs. The imports of Martinique in 1890 were valued at 30,261,000 francs; exports of domestic produce, 20,714,000 francs; imports of Guadeloupe, 23,249,000 francs; exports of domestic produce, 20,672,000 francs. D. Moracchini is the present Governor of Martinique, and L. H. Nouet Governor of Guadeloupe. A railroad 15 miles long is under construction in Guadeloupe, for which annual subventions will be paid for seventy-five years, at the end of which it becomes the property of the colony.

**WEST VIRGINIA**, a Southern State, admitted to the Union June 19, 1863; area, 24,780 square miles. The population, according to each decennial census since admission, was 442,014 in 1870; 618,457 in 1880; and 762,749 in 1890. Capital, Charleston.

**Government.**—The following were the State officers during the year: Governor, A. B. Fleming, Democrat, succeeded on March 4 by William A. McCorkle, Democrat; Secretary of State, William A. Ohley, succeeded by W. E. Chilton; Treasurer, William G. Thompson, succeeded by John M. Rowan; Auditor, Patrick F. Duffey, succeeded by I. V. Johnson; Attorney-General, Alfred Caldwell, succeeded by Thomas S. Riley; Superintendent of Free Schools, Benjamin S. Morgan, succeeded by Virgil A. Lewis; President of the Supreme Court, John W. English; Judges, Henry Brannon, Homer A. Holt, and Marmaduke A. Dent.

**Legislative Sessions.**—The regular biennial session of the Legislature began on Jan. 10, and expired, by limitation, on Feb. 24. On Jan. 24

Hon. Johnson F. Camden, Democrat, was elected a United States Senator for the unexpired term of Senator John E. Kenna, who died in Washington on Jan. 11. The vote was as follows: Senate—Camden 20, Erwin Maxwell, Republican, 4; House—Camden 39, Maxwell 29, M. W. Burgess, Populist, 1. On the same day United States Senator Charles J. Faulkner was re-elected for the full term of six years, the vote being: Senate—Faulkner 20, Stephen B. Elkins, Republican, 4; House—Faulkner 39, Elkins 28, O. D. Hill, Populist, 2. The legislation of the session includes an act reducing the State tax levy for general purposes 5 cents on each \$100 of valuation, and increasing the levy for school purposes by the same amount. By this change three sevenths of the entire amount of taxes collected by the State will hereafter be devoted to the support of public schools. Suitable provision was made for the purchase or erection of an executive mansion. The employment of non-residents to perform police duty in the State, or otherwise to assist in the execution of its laws, was forbidden. Other acts of the session were:

Revising the laws relating to the management of the Penitentiary.

Providing for depositing in the Auditor's office certain records, books, documents, and papers relating to land titles procured and to be procured from the State of Virginia, and making the same a part of the public records of the Auditor's office, and providing how the same or copies thereof, and certificates based thereon, may be used as evidence.

Making it a misdemeanor, punishable by a fine not to exceed \$200 and imprisonment not to exceed one year, to rent a house to be used as a house of ill fame, and constituting each day a separate offense, annulling all leases or contracts for the renting of such houses, and providing for a fine, not to exceed \$25, for living or loitering in such places.

For the prevention of cruelty to children, and providing for their care and maintenance in certain cases. This act allows children to be taken by trustees of orphans' homes and other such institutions when their parents are not giving them proper care and attention, upon the order of the judge of the circuit court of the county in which the child resides.

Providing for the erection in the national Capitol of a statue of Senator John E. Kenna.

Creating 3 mining districts in the State instead of 2.

Revising the laws concerning the sale of lands for the benefit of the school fund.

Authorizing fidelity and guarantee companies of other States to transact surety business in this State.

Amending the Australian election law by requiring the districts to be laid off into precincts, and prohibiting any person from voting outside the precinct in which he resides.

At the expiration of this session, on Feb. 24, the regular appropriation bills had not been passed. The Governor, therefore, at once called a special session, to meet on Feb. 25, specifying in his call no business except the consideration of appropriations. At this session the regular appropriation bills, which were pending at the close of the previous session, were carried through, and an adjournment reached March 8.

**Charities.**—At the Insane Hospital, in Weston, there were 936 patients in February. The buildings for the new hospital at Spencer were practically completed during the year. The sum of \$122,000 had been expended thereon up to February, and at that time two of the three buildings were ready for furnishing.



**WISCONSIN**, a Western State, admitted to the Union May 29, 1848; area, 56,040 square miles. The population, according to each decennial census since admission, was: 305,391 in 1850; 775,881 in 1860; 1,054,670 in 1870; 1,315,497 in 1880; and 1,688,880 in 1890. Capital, Madison.

**Government.**—The following were the State officers during the year: Governor, George W. Peck, Democrat; Lieutenant-Governor, Charles Jonas; Secretary of State, T. J. Cunningham; Treasurer, John Hunner; Attorney-General, J. L. O'Connor; Superintendent of Public Instruction, O. E. Wells; Insurance Commissioner, W. M. Root; Railroad Commissioner, T. Thompson.

With the exception of the annual treasury report, all Wisconsin reports are made biennially. The latest reports, with the exception of the joint report of the Secretary of State and State Treasurer, therefore cover only the years 1891 and 1892.

**Finances.**—The following is a statement of the amounts received and paid out by the State Treasurer during the year ending Sept. 30, 1893, the total amount received being \$2,249,542.96: On hand Sept. 30, 1892, \$640,228.12; received from railroad companies, \$1,156,260.75; telegraph companies, \$9,657.62; telephone companies, \$11,705.71; sleeping-car companies, \$1,193.04; from counties for maintaining insane, \$139,723.27; from counties for Industrial School for Boys, \$8,511.81; fifth normal school, \$9,985.59; free high schools, \$49,927.95; suit tax from counties, \$6,599; peddler licenses, \$15,228.17; insurance licenses, \$122,651.27; from United States for Veterans' Home, \$14,711.94; from loan and trust companies, \$1,025.85; from boom companies, \$4,187.66; from office fees, \$39,828.36; from interest on general fund, \$12,569.08; from all other sources, \$5,587.77. There was paid out from the general fund \$1,786,501.55, as follows: For salaries and permanent appropriations, \$195,438.42; for charitable and penal institutions, \$368,247.84; for legislative expenses, including second special session, 1892, \$154,503.95; for clerk hire, \$56,174.53; for labor about Capitol, \$49,067.96; for special appropriations, \$213,920.98; for National Guard, \$82,459.79; for other expenses, \$416,178.40; balance in treasury, \$463,041.41. The investment of trust funds is as follows: School fund, \$3,380,672.28, an increase of \$22,169.78 during the year; university fund, \$229,922; Agricultural College fund, \$299,438.04; Normal School fund, \$1,811,325.11; drainage fund, \$2,316; total, \$5,723,673.43.

The total receipts during the year from these and other trust funds was \$1,958,559.12; the disbursements were \$1,843,244.32; balance on hand Sept. 30, 1892, \$163,341.37; balance in treasury Sept. 30, 1893, \$278,656.17.

The bonded debt of the State, Jan. 1, 1893, was represented by certificates of indebtedness as follows: To the school fund, \$1,563,700; to the Normal School fund, \$515,700; to the University fund, \$111,000; to the Agricultural College fund, \$60,600; total bonded debt, \$2,251,000.

**Taxation.**—The following figures are taken from the report of the Secretary of State for the years 1891 and 1892. The value of all the personal property in 1891 was \$107,120,453; of city

and village lots, \$218,193,453; of other lands, \$265,590,938; total valuation, \$591,604,854. The value of all personal property in 1892 was \$119,724,782; of city and village lots, \$203,405,727; of other lands, \$330,869,491; total valuation, \$654,000,000. The tax assessed in 1891 by the State Board of Assessors was \$1,328,983.96, of which \$988,886.15 was the State tax of 1.58511059 mill on each dollar of valuation. The tax assessed in 1891 by the county boards of supervisors and the town assessors on counties, towns, cities, and villages was \$13,665,343.20. The tax assessed by the State Board of Assessors in 1892 was \$1,319,943.22, of which \$1,018,720 was the State tax of 1.557676 mill on each dollar of valuation. The amount of internal-revenue tax for 1893 was \$4,228,740.35, an increase of \$434,041 over 1892.

**Banks.**—The number of State banks organized under the banking law doing business July 4, 1892, was 110, with an aggregate capital of \$6,286,900.

**Education.**—The report of the State Superintendent of Instruction to Jan. 1, 1893, shows the number of children of school age during the last year covered by the report to be 618,884; number enrolled in public schools, 362,064; number of free high schools, 182; number of pupils enrolled therein, 11,022; number of schoolhouses, 6,570; number of teachers, 12,355. The receipts for common schools were \$6,150,722.83; the expenditures, \$4,326,327.54. The receipts for normal schools, in which 2,397 pupils were instructed, were \$181,836.13, all of which, except \$47,422.75 paid for buildings, was expended for their maintenance.

A tract of land adjacent to the State University was bought during 1893 for its use, the Legislature appropriating \$25,000 for the purpose. A building for the College of Law was completed at a cost of \$75,000, and also an armory building, at a cost of \$100,000. This building contains the largest college gymnasium in America. In January Charles Kendall Adams was inaugurated president of the university. The number of students enrolled during 1893 was 1,287, an increase of 195 over 1892. The income of the university during 1892 was \$268,510.60; the disbursements were \$268,187.02, of which \$36,656.74 was for the expenses of the experiment station.

The Dairy School accommodates only 100 students, and many applications for admission are refused. The school uses 45,000 pounds of milk daily. After the separation of the cream from the milk in butter making, the skim milk is sterilized and returned to the farm from which it was received. The annual dairy products of the State are valued at about \$30,000,000. The number of pounds of butter made in 1891 is reported as 25,791,513; of cheese, 54,365,220.

**Township Libraries.**—The township library law was passed in 1887. It authorizes each town treasurer to withhold 10 cents for each person of school age to secure a library fund, which is to be expended by the town clerk, under certain restrictions, for a township library. The books of this library are distributed among the several districts of the township in proportion to the amount withheld from each. The

number of town libraries in 1892 was 295, containing 54,265 books. The number of district libraries in 1892 obtained by local taxation was 6,279, with a total of 28,579 books.

**Charitable and Penal Institutions.**—The State Hospital for the Insane received from the State in 1893 \$113,333.44; in 1892, \$96,436.14; and in 1891, \$101,167.47.

The Northern Hospital for the Insane received in 1893 \$114,093.59; in 1892, \$118,894.81; and in 1891, \$120,583.23. For the maintenance of the chronic insane in county hospitals \$244,239.18 was expended in 1893, \$218,793.55 in 1892, and \$207,677.85 in 1891.

The Wisconsin School for the Deaf enrolled 179 pupils in 1893, and received from the general fund \$39,209, and from the school fund \$9,085. It received from the general fund in 1892 \$36,489.58 and in 1891 \$36,817.67.

The Wisconsin School for the Blind enrolled 82 pupils in 1893, and received \$33,209.39 from the general fund and \$2,949 from the school fund. It received from the general fund in 1892, \$26,119.04, and \$23,090.85 in 1891.

The Industrial School for Boys enrolled 361 pupils in 1893, and received from the general fund \$51,300.30, and from the school fund \$2,241.66. It received from the general fund in 1892 \$47,584.75, and \$63,449.45 in 1891.

The Industrial School for Girls received special appropriations of \$2,500 in 1892, and \$4,500 in 1891.

The State Public School enrolled 283 pupils, receiving from the general fund in 1893 \$40,720.09, and from the school fund \$1,829.65. It received in 1892 from the general fund \$47,584.75, and \$42,493.50 in 1891.

The proportion of State-Prison expenses paid from the general fund in 1893 was \$10,813.68; in 1892, \$7,465.12; in 1891, \$6,932.04.

The number cared for in the Milwaukee Soldiers' Home during the year ending June 30, 1893, was 3,266; the number of deaths was 139; the number that received a pension was 1,846, who draw \$270,524.15 annually. The number of arrests made for drunkenness during the first six months of the year was 1,070, against 2,116 for the same period in 1892. The profits of farm work were \$20,801.73. The report of the board of managers speaks highly of the Keeley gold-cure.

To the Veterans' Home, at Waupaca, an appropriation for maintenance of \$27,037.72 was made in 1892, and of \$23,441.15 in 1891. Special appropriations of \$28,552.50 and \$17,000 were made in 1892 and 1891.

**Live Stock.**—The number of horses in the State at the beginning of the year was 377,607; of neat cattle, 1,151,535; of mules and asses, 4,341; of swine, 570,937; of sheep and lambs, 807,714. The total valuation of live stock was \$38,723.955.

**Agriculture.**—The number of acres devoted to the various products in 1892 was as follows: To wheat, 707,457; corn, 960,640; oats, 1,538,449; barley, 500,971; rye, 250,813; potatoes, 160,852; root crops, 97,492; cranberries, 3,032; strawberries, 1,282; apples, 98,560, with 1,131,077 bearing trees. The receipts of the 66 agricultural societies amounted to \$209,455.88, exclusive of two legislative appropriations to the

amount of \$5,669.10. The expenditures were \$212,024.05.

**War Records.**—The compilation of the individual history of the Wisconsin troops in the civil war was completed in 1893. The cost of getting the records ready for the printer was about \$140,000. The number of pensions paid in Wisconsin is 27,612; their amount is \$4,378,353.50.

**Treasury Interest Cases.**—During the year \$370,074.51 was paid back to the State by ex-State Treasurers. For many years prior to 1891 it had been the custom of the Treasurers to deposit State moneys in various banks and to receive interest on the public funds thus loaned or deposited. For this interest they did not account to the State, but converted it to their own uses. In 1891 suit was brought against all Treasurers during the past twenty years and their sureties to recover such interest received by them, with interest thereon. In a test case in the circuit court judgment in the State's favor was given in February, 1892, and this decision was sustained by the Supreme Court in January, 1893, and, in accordance with it, repayment was made.

**Legislative Session.**—The Legislature met on Jan. 12, 1893, and, after a session of fourteen weeks, adjourned on April 21. Among the bills passed were the following:

Providing an appropriation of \$1,000 for the establishment of a free circulating library, to be printed in embossed type, for the use of all blind citizens of the State.

To provide a uniform system of certification of teachers, and to give the graduates of leading educational institutions the right to teach without the necessity of taking examination by a county or city superintendent.

To grant to the city of Milwaukee a certain portion of submerged land lying along and adjacent to the shore of Lake Michigan, on the eastern frontage of the city of Milwaukee, for a public park and boulevard.

Authorizing cities to issue corporate bonds for the purpose of paying the expenses of building and maintaining bridges.

Authorizing courts to transact business on legal holidays.

To abolish days of grace.

To prevent oppressive garnishments and depriving debtors of their exemption rights.

To provide for the payment into the county treasury of the funds received by justices of the peace and other magistrates.

Appointing a committee to locate the position of Wisconsin troops at Chickamauga.

To authorize church corporations to form fire-insurance companies to insure church property.

Amending the statutes providing for the use of gifts and bequests to cemetery associations.

To protect associations and trade unions in their labels and trade-marks.

To limit the number of terms to which a person may be eligible to the office of county treasurer.

Creating a State Board of Arbitration to act in case of labor disputes, and appropriating \$2,500 therefor.

To provide for a revision of the school code of Wisconsin.

A general fish bill was passed, which provides, among other things, that waters that have been stocked by the State shall be open to the public for fishing, and debars any persons from securing exclusive rights therein by leasing or purchasing the land on either side of the stream. This opens all trout preserves to the public.



Over the several road bills there was strong fighting; the result was the passage of a good bill giving full supervision of the making and management of all roads to the town board of each town, and decreeing that all road taxes shall be paid in money.

The Hon. John L. Mitchell (Democrat), on the thirty-first ballot, was elected to the United States Senate for six years from March 3, 1893.

#### WORLD'S COLUMBIAN EXPOSITION.

In the issues of the "Annual Cyclopædia" for 1891 and 1892 the history of previous expositions and the story of the details that led to the World's Fair in Chicago were given. The actual history of its life remains to be told.

**Officers.**—The World's Columbian Commission consisted of the following: Thomas W. Palmer, president; T. M. Waller, M. H. de Young, D. V. Penn, G. W. Allen, and A. B. Andrews, vice-presidents; John T. Dickinson, secretary; and James A. McKenzie, vice-chairman of the Executive Committee, together with 8 commissioners at large and 2 commissioners from each of the States and Territories, including Alaska and the District of Columbia. The World's Columbian Exposition Association was officered as follows: Harlow N. Higinbotham, president; F. W. Peck, R. A. Waller, vice-presidents; D. O. Edmunds, secretary; S. A. Crawford, assistant secretary; A. F. Seeberger, treasurer; W. K. Ackerman, auditor; and C. V. Barrington, assistant auditor. The director-general was George R. Davis, who had the supervision of the following departments: A. Agriculture, Food and Food Products, Farming Machinery and Appliances; chief, W. I. Buchanan. B. Viticulture, Horticulture, and Floriculture; chief, J. M. Samuels. C. Live Stock, Domestic and Wild Animals; chief (acting), W. I. Buchanan. D. Fish, Fisheries, Fish Products, and Apparatus of Fishing; chief, J. W. Pollins. E. Mines, Mining, and Metallurgy; chief, Frederick J. V. Skiff. F. Machinery; chief, L. W. Robinson. G. Transportation Exhibits, Railways, Vessels, and Vehicles; chief, Willard A. Smith. H. Manufactures; chief, James Allison. J. Electricity and Electrical Appliances; chief, J. P. Barrett. K. Fine Arts (Pictorial, Plastic, and Decorative); chief, Halsey C. Ives. L. Liberal Arts (Education, Engineering, Public Works, Architecture, Music, and the Drama); chief, S. H. Peabody. M. Ethnology, Archaeology, Progress of Labor and Invention (Isolated and Collective Exhibits); chief, Frederick W. Putnam. N. Forestry and Forest Products; chief (acting), W. I. Buchanan. O. Publicity and Promotion; chief, Moses P. Handy. P. Foreign Affairs; chief, Walker Fearn. Director of the works, Daniel H. Burnham. The Board of Lady Managers was similar in organization to the National Commission, and consisted as follows: Mrs. Potter Palmer, president; Mrs. Susan G. Cooke, secretary; together with 9 vice-presidents, 8 lady managers at large, and 2 from each State and Territory.

**Opening Exercises.**—The 1st of May in Chicago began with fog, mist, rain, and mud; but as the day advanced the weather cleared, until the elements added their share to the universal enthusiasm at the opening of the World's Columbian Exposition.

The day had been made a legal holiday, and

from early morning until ten o'clock masses of humanity thronged the thoroughfares leading to the grounds, and patiently awaited the opening of the gates. Meanwhile the usual procession was organizing, under the command of Major T. A. Baldwin, U. S. A., and in time it started, led by the police. Then came two companies of the Seventh Cavalry, U. S. A., followed by the Chicago Hussars and the mounted Troop A of the Illinois National Guard. Next came carriages with distinguished personages—national and local commissioners, the director-general, the director of works, President Davis of the Columbian Commission, and President Higinbotham of the Columbian Exposition Company, the Vice-President of the United States, the members of the Cabinet, the Duke of Veragua, the Duchess of Veragua (escorted by Mrs. Potter Palmer), Gen. Miles, of the United States army, Admiral Gherardi, Mayor Harrison, and many others. They entered the grounds at the western gate of the Midway Plaisance, and passed strange groups of Africans, Algerians, Japanese, Laplanders, Moors, and Persians; each of which welcomed the advancing procession in a manner peculiar to his own nationality. Slowly they advanced past the Woman's Building and the beautiful structure devoted to the Mines and Mining to the west door of the Administration Building. Two platoons of cavalry had meanwhile drawn up between this structure and the terminal station, and between these passed the guests as fast as they alighted from their carriages. From the eastern entrance the procession moved toward the platform, extending across the whole front of the Administration Building, from which the formal ceremonies were to be conducted. From the center of the platform proper radiated a special stand, and upon this were chairs for the President and Vice President of the United States, the Duke of Veragua and his party, and the higher national and local officers of the fair. Immediately in the rear were the members of the diplomatic corps, and right and left were minor officials and guests, while last of all was the orchestra.

Had the weather been more propitious, the ceremonies would have begun with a chorus by 1,000 voices; but this feature was dispensed with, and the actual exercises began with a "Columbian March," composed for the occasion by John K. Paine, and rendered by an orchestra of 600 pieces, led by Theodore Thomas. Then the blind chaplain of the United States Senate, the Rev. William H. Milburn, was led to the front of the platform by his adopted daughter, Miss Gertrude Gemley, and led the assembly in prayer. Immediately following was the reading, by Miss Jessie Couthoi, of William A. Croffut's poem; entitled "The Prophecy," in which he told of how

Sadly Columbus watched the nascent morn,  
and saw a

Prophetic picture of the land he sought,  
closing with

He saw exalted Ignorance under ban,  
Though panoplied in force, since Time began;  
And Science, consecrated, lead the van,  
The providence of man.



Copyright, 1894, by D. Appleton & Co.

Colorotype Co., N. Y.

C. C. Curran.

THE ADMINISTRATION BUILDING AND ELECTRIC FOUNTAINS AT NIGHT.





The picture came and paled and passed away,  
 And then he said to Pinzon, in the gloom:  
 "Now, Martin, to thy waiting helm again.  
 Haste to the Pinta; westward keep her prow,  
 For I have had a vision full of light.  
 Keep her prow westward, in the sunset's wake,  
 From this hour hence, and let no man look back."

After the overture from "Rienzi" had been rendered by the orchestra, the director-general, George R. Davis, told the history of the growth and development of the exposition, closing with—

The grand concerted illustration of modern progress which is here presented—encouragement of art, of science, of commerce—has necessitated an expenditure, including the outlay of our exhibitors, largely in excess of \$100,000,000. We have given it our constant thought, our most devoted service, our best energy, and now, in this central city of this great republic, on the continent discovered by Columbus, whose distinguished descendants are present as the honored guests of our nation, it only remains for you, Mr. President, if in your opinion the exposition here presented is commensurate in dignity with what the world should expect of our great country, to direct that it shall be opened to the public, and when you touch this magic key the ponderous machinery will start in its revolutions, and the activities of the exposition will begin.

Mr. Cleveland's remarks were brief. He said:

I am here to join my fellow-citizens in the congratulations which befit this occasion. Surrounded by the stupendous results of American enterprise and activity, and in view of magnificent evidences of American skill and intelligence, we need not fear that these congratulations will be exaggerated. We stand to-day in the presence of the oldest nations of the world and point to the great achievements we here exhibit, asking no allowance on the score of youth.

It is an exalted mission in which we and our guests from other lands are engaged as we co-operate in the inauguration of an enterprise devoted to human enlightenment; and in the undertaking we here enter upon we exemplify in the noblest sense the brotherhood of nations.

Let us hold fast to the meaning that underlies this ceremony, and let us not lose the impressiveness of this moment. As by a touch the machinery that gives life to this vast exposition is now set in motion, so at the same instant let our hopes and aspirations awaken forces which in all time to come shall influence the welfare, the dignity, and the freedom of mankind.

As the applause that greeted this address died away a moment of breathless silence ensued, during which the President touched the electric button that set in motion the machinery that was distributed throughout the fair. As the wheel of the great engine that furnished the power to the exposition began to revolve, the audience burst into a loud cheer. The electric fountains sent their streams of water skyward, and the beautiful MacMonnies fountain became alive with pulsating motion as the floods from many open-

ings rushed to and fro about its basin, seeking their way to the Court of Honor, where the great statue of the Republic slowly emerged from its drapery, revealing all the stately majesty of its pure golden beauty, while from the lake beyond came loud sounds of cannon fired by the United States vessels, and the buildings answered the echoes by flashing back the thousands of brilliant-colored flags and streamers that had been



STATUE OF COLUMBUS.

unfurled. Then the sun came out and cast a warm influence over all the beauty of the scene. The "Hallelujah Chorus" of the orchestra gave way to "America," and the great World's Columbian Exposition began its actual existence.

A luncheon followed in the Administration Building, after which the President and his party were taken to the Manufactures and Liberal Arts Building, where they were received by the commissioners of the various foreign governments. The electric launches carried the party over the water ways, while gayly decorated gondolas served as escorts. A moment was spent at the Woman's Building, and finally a landing was made at the Agricultural Building, then a drive along the esplanade beside the lake to the Art Building, which was hastily inspected, and then by a special train away and back to Washington.

Of almost equal interest were the opening exercises of the Woman's Building. These began shortly before 3 o'clock in the afternoon with



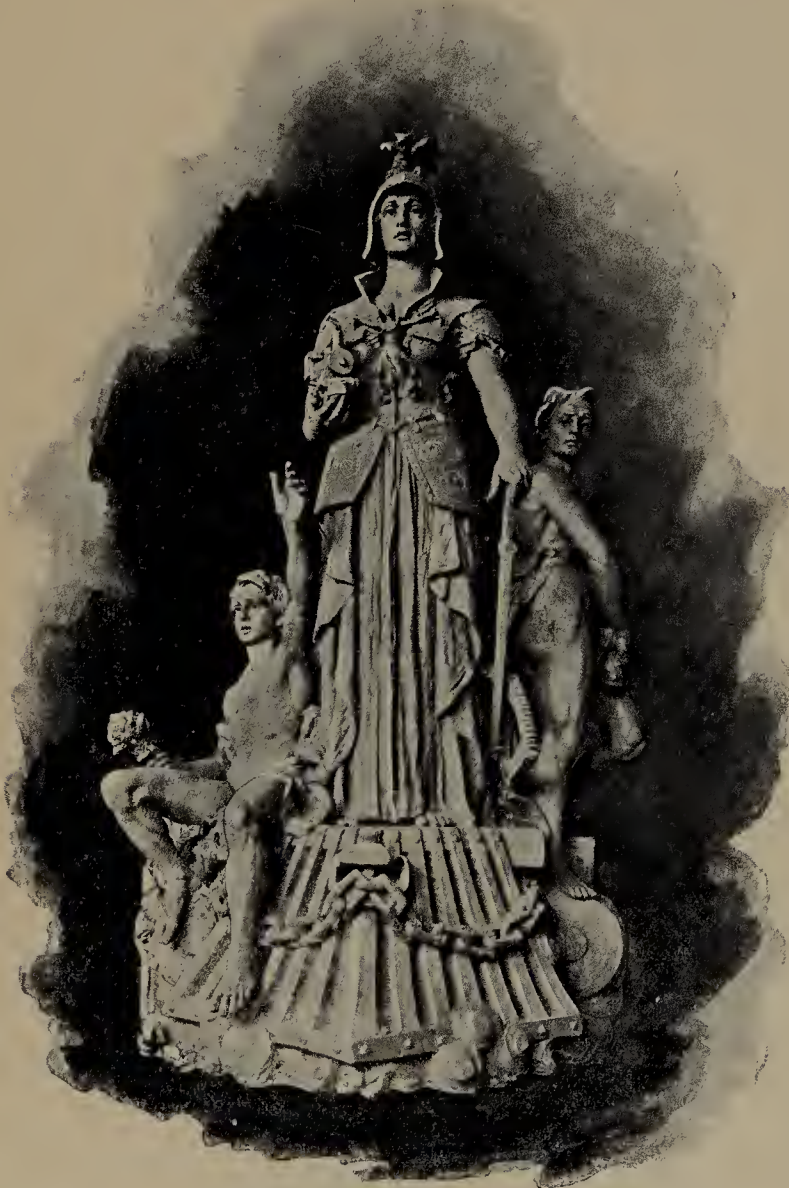
the rendering of the grand march by Jean Ingeborgs von Bronsart, of Weimar, Germany; then followed a prayer by Miss Ida Hullin. Miss Frances Elliott, of London, gave a dramatic overture, after which Mrs. Potter Palmer made the formal address of the occasion. A jubilate, by Mrs. H. H. A. Beach, of Boston, was the next feature of the programme. Addresses were then

upper portion of the shield which is attached to the nail near the head. Mrs. Potter Palmer, President of the Board of Lady Managers, drove the nail of gold home with a silver hammer. An attendance of 128,965 was registered.

**The Great Day.**—During the fair many days were set aside and honored with special ceremonies. Various national organizations gathered at times specified for their coming. Foreign nations sent their representatives on certain days, which were celebrated with appropriate exercises. The States of the Union had their days. Supreme above these was Chicago's day. Oct. 9, the twenty-second anniversary of the great fire that devastated that city, was appropriately chosen as the time to show the world how the effects of that event had become only a memory. A new and more beautiful city had taken the place of that which had previously existed.

Early in the morning the railway trains from Van Buren Street began running with three minutes' headway and with added facilities of cable, elevated, and horse cars. When the gates opened to the exposition grounds 15,000 persons were waiting for admission. As the morning gave way to noon-time, and the afternoon passed into evening, the crowd increased, until at the closing of the gates, when the returns were made up, it was found that 716,881 persons paid their way into the grounds. By way of comparison it may be noted that at Philadelphia in 1876 217,526 was the greatest attendance on any one day, and at Paris in 1889 the greatest day brought only 397,150 visitors. The day was celebrated with appropriate exercises.

The first event arranged by the World's Fair Committee of the Chicago Common Council took place at 9 o'clock, and was in commemoration of Chicago's birth and early history. The old Potawatamie chief, Simon Pokaron, whose father, Leopold, deeded the land upon which Chicago is built, had been induced to come from his home in Hartford, Mich., for Chicago day. He stood beside the Columbian bell with uncovered head in the dress of the white man, and received the homage of thousands. He was born sixty-



THE GENIUS OF THE LOCOMOTIVE GROUP.

delivered by the following representatives of foreign nations: Spain, Duchess de Veragua; Italy, Countess di Brazza; England, Mrs. Bedford Fenwick; Scotland-Ireland, Duchess of Aberdeen; Russia, Princess Schachoffsky. The hymn "America" and a benediction brought these exercises to a close. The golden nail which marked the completion of the Woman's Building at the exposition was of gold, silver, and copper, with a Montana sapphire set in the

three years ago Sept. 27 last, on the day that the transfer deed was delivered to the agents of the United States Government.

By his side stood the most picturesque figure among more than 500,000 people. His dress consisted of a heavy and varied coat of paint on his face, body, and limbs, a headdress of feathers, and a breech clout of beaded buckskin. He wore moccasins, and looked a typical Indian on the war path, although he came with a message of peace, standing as a historic figure between the Chicago of yesterday and the Chicago of to-day. He was Chief John Young, sixty years of age, who came from the Pottawattamie reservation, near Miles, Mich., to tell the people of all nations that his father, who bore the same name, christened the World's Fair city "Chicago," which, literally interpreted, means "where the skunk dwells." These two old and feeble Pottawattamie chiefs were the idols of the hour.

The exercises at Jackson Park began at noon with the booming of cannon. Then a silence fell on the multitude as the "Heralds of Peace," attired in their gaudy costumes, began their fanfare of peace. These were stationed on the Peristyle, Administration Building, Manufactures Building, and Agricultural Building. They all turned toward the Goddess of Liberty, and played on their brazen instruments "Peace on Earth, Good Will to Men." After which 2,000 voices sang "The Star-Spangled Banner." Elsewhere occurred the ringing of the new liberty bell by Mayor Harrison, accompanied by a blare of trumpets and crash of drums by the united bands. The chorus sang "Die Wacht am Rhein," "Marseillaise," the Austrian hymn, the Russian hymn, the "Star-Spangled Banner," and other national and patriotic hymns.

At 2 o'clock 400,000 persons were in the grounds. Then the "Reunion of the States" took place on the plaza facing the Court of Honor. As the States passed in review around the Court of Honor, represented by 3,000 school children, cheer after cheer attested the gratification of the vast audience. The review was divided into five sections. The first was led by a chorus of 100 boys from the diocesan choir, followed by 34 youths, one selected from each ward of the city, bearing a shield with the word "Welcome" inscribed upon it, representing the metropolis of Illinois. Then came thirteen young ladies representing the original States. A company of twenty-four boys dressed in the Continental uniform contrasted pleasantly. Then followed the States of the Union, the six principal cities of each State represented by maidens bearing pennants. The States were in the order of their admission to the Union.

In the evening a procession of twenty-five great floats illustrating the arts, sciences, peace, war, Chicago, and the nations, followed by an elaborate display of fireworks, took place. The fireworks were among the finest ever given. The special designs included old Fort Dearborn, Chicago welcoming the World, Old Glory, Niagara Falls, and the burning of Chicago. The latter was 14,000 square feet in area, in four scenes, showing Mrs. O'Leary's cow, the kicking over of the lamp, and the burning of the city.

Of decided interest was also the observance of

Manhattan's day. New York city had hoped to have the World's Fair, but her young rival carried off the prize. For a time the inhabitants of the Empire City, piqued at their loss, failed to visit the fair, but with the waning of autumn



THE REPUBLIC.

they more than made good their early apathy. It was in consideration of these facts that special efforts were made to make Oct. 21 (Manhattan's day) a great success. Mayor Harrison welcomed the 10,000 visiting New Yorkers, and Horace



Porter and Chauncey M. Depew were there to respond. At the formal exercises Thomas F. Gilroy, Mayor of New York city, and Seth Low, President of Columbia College, took part, and the formal reception closed with a benediction by Archbishop Corrigan. Parades by day and pageants by night, closing with fireworks, were included in the ceremonies.

**Attendance.**—The number of paid admissions to the Columbian Fair during the 179 days that it was open to the public was 21,477,218, being an average of 119,984½ per day. The total attendance, including exhibitors and others who held passes, was 27,529,400, which exceeded by nearly a million the 26,538,543 of the total admissions to the Paris Exposition during the months ending with October.

The attendance for May was only 1,050,087. Taking out the 128,965 of the opening day and the 115,578 of Decoration Day, the average for the other twenty-six days was only 30,980. The

9th, when the Californians, the Grand Army of the Republic, Utah, the stationary engineers, and the exponents of transportation joined in celebrating. On three other days the record went above 200,000—namely, the 23d, being Knights of Honor day, with 215,643; the 7th, by Pennsylvania and Brazil, with 203,460; and the 16th, with 202,376, that being Texas, Railway, and New Mexico day. October brought 6,816,435 visitors, or an average of 227,214 for each day, which was less than one third of the 716,881 persons who paid their way on the twenty-second anniversary of the Chicago fire. On each of three other days the record exceeded 300,000, the 10th being North Dakota and Firemen's day, and the 11th, which was Connecticut day, both rising above 309,000. Making due allowance for duplications by persons who paid more than one visit to the fair, it may be estimated that twelve million different individuals went there within the six months.

**Police Service.**—No large gathering of people such as collected daily at Jackson Park could be expected to escape the annoyance of petty thieving. For the protection of the visitor, the Secret-Service Bureau of the World's Columbian Exposition was organized September 1, 1892; and ex-Police Inspector John Bonfield, formerly of the Chicago department, was given charge. He consulted with city and State officials throughout the United States and Europe, and mapped out a plan for the protection of visitors, and on May 1, 1893, he had a force on the grounds of 300 picked men, coming from every State in the Union, England, Canada, and South America.

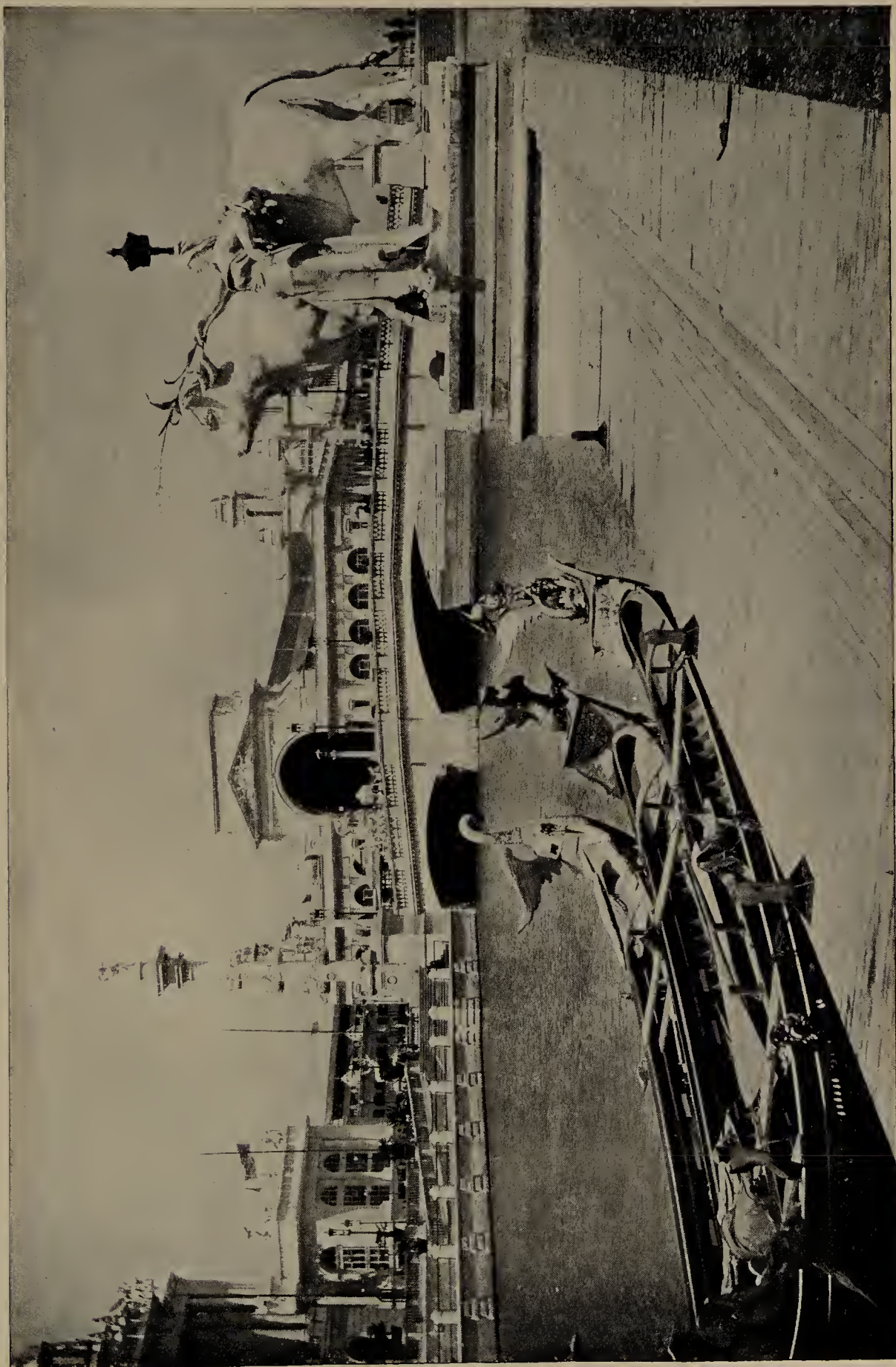


TEXAS STATE BUILDING.

paid attendance for June was two and a half that of May, but its 2,675,113 included only five days the figures for which exceeded the six months' average. In July that average was first exceeded, on the 4th, with a total of 283,273, and on the 20th the average was again passed, with a total of 129,873, by the Swedish celebration. The total (3,780,263) for that month but slightly exceeded the record for June. The 3,515,493 of August was an increase of one fourth. The paid attendance for each of fifteen days exceeded the average, and except Sundays the lowest figures were 80,200. The "banner day" in August was the 24th, when 243,951 persons paid their way through the gates to join in celebrating Illinois day. The other two largest records of August were 168,861 for the 19th, which was British day, and the 168,036 of the 25th, which was Machinery day. September brought an increase to nearly 4,660,000, its best day being the 231,522 for the

The records show 845 arrests, 400 convictions, and 105 acquittals; 297 persons were arrested for pilfering from exhibits and released on paying for the goods they had taken; 33 persons were arrested for attempting to gain admission to the grounds on fraudulent passes; 9 persons were arrested for attempting to pass counterfeit money; 143 ex-convicts were taken in and removed from the grounds, and cautioned if they were again found in the grounds they would be prosecuted; 1,395 showcases in the different exhibits were found open and not locked, through the carelessness of exhibitors or their employees; 300 stolen souvenir tickets were recovered from a gateman; value of property reported stolen, \$32,938; value of property recovered and returned to owners, \$31,875. The Secret-Service Department had charge of the lost and found articles up to the 19th of August, when it was turned over to the auditing depart-

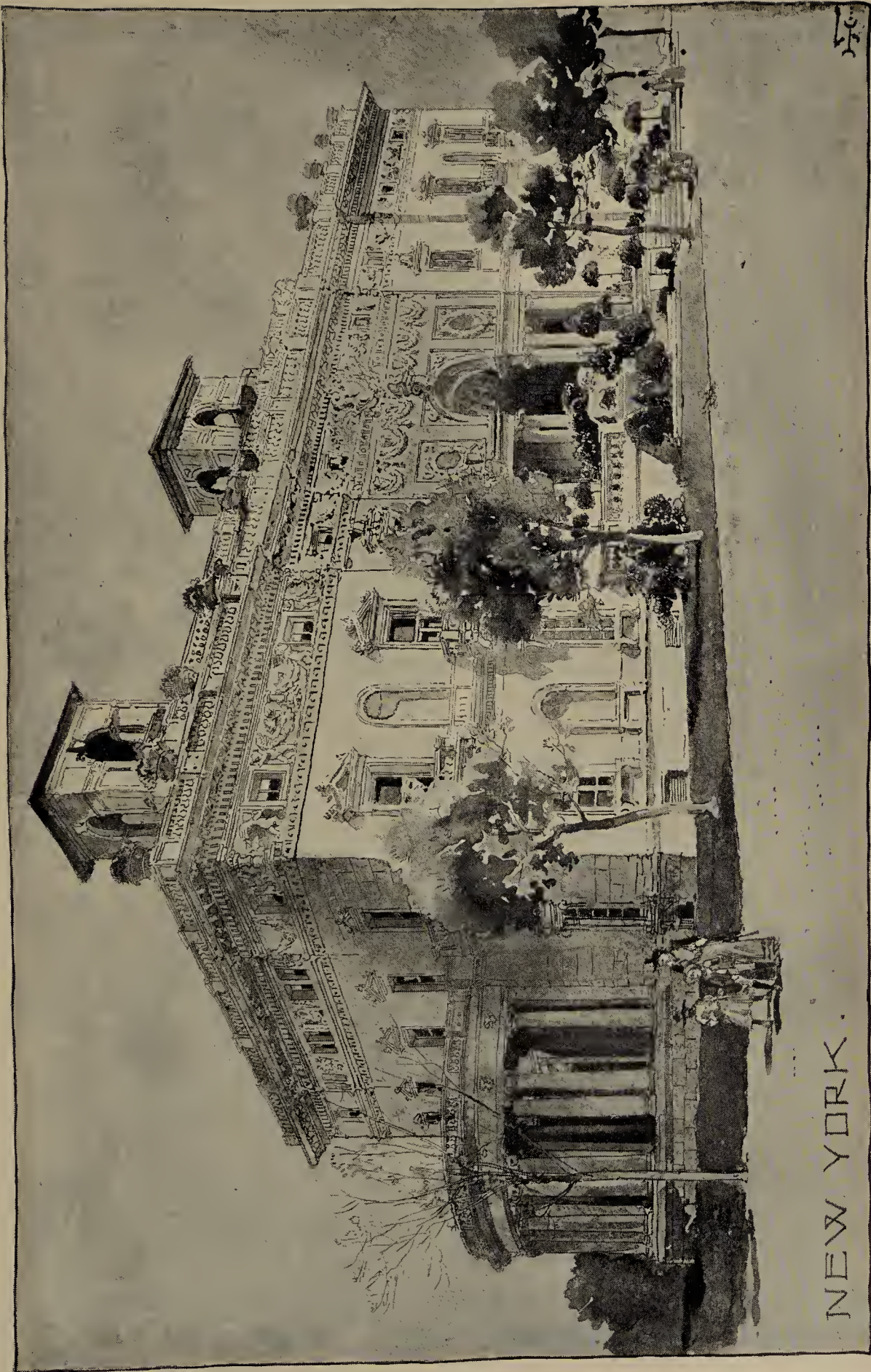




VIEW LOOKING NORTH FROM THE OBELISK.







NEW YORK.

NEW YORK STATE BUILDING.





MISSOURI STATE BUILDING.

ment. The number of articles found by secret-service officers and returned to owners was 861, the value being \$11,381. The Secret-Service Bureau went out of existence on Dec. 1.

**Cost of the Fair.**—The total cash receipts of the exposition from all sources up to and including Nov. 12 were \$33,290,065.58, while the disbursements were \$31,117,353.79. In the month of May there were 11,482 persons on the pay rolls of the fair and their total compensation was \$387,499.89, exclusive of the amount paid to the 7,000 men employed by contractors.

The average receipts a day during the six months it was open were \$89,501.53, and the average expenses a day were \$18,380.59. The smallest attendance was on May 5, 10,791, and the largest on Chicago day, Oct. 9, 729,203. The total number of paid admissions for the six months was 21,530,854.

The disbursements represent the money paid out for landscape gardening and architecture; dredging, filling, and excavating; coloring and decorating; draughtsmen's wages; electric plant; interior docking; grading and surveying; piers and breakwaters; roadways and sidewalks; sculpture modeling; statues; water and sewerage; horses, wagons, and harnesses; the various exhibition buildings; and other items too many to mention.

From these results it is expected that when the Committee on Finance make their final report they will be able to announce a dividend of 10 per cent.

For the six-month exposition period the receipts and expenses were:

1893.	Receipts.	Expenses.
May .....	\$666,140 61	\$593,757 20
June .....	1,647,644 44	630,535 20
July .....	1,967,194 84	598,319 97
August .....	2,337,856 25	569,798 12
September .....	3,169,938 92	537,566 92
October .....	4,402,467 35	610,000 00
Total .....	\$14,141,242 41	\$3,504,037 41

The receipts are thus summarized:

Balance from temporary organization.....	\$4,252 64
Installment receipts in stock.....	10,516,698 43
Interest on deposits .....	68,090 50
Sale of souvenir coins .....	\$1,094,144 78
	1,485,000 00
Gate receipts .....	2,529,144 78
Receipts from <i>concessionnaires</i> .....	10,578,146 81
Sale of bonds .....	3,384,016 23
Accrued interest on bonds.....	4,444,500 00
Miscellaneous receipts.....	80,976 52
	1,784,239 67
Total receipts.....	\$33,290,065 58

In addition to this total the following appropriations were made:

By foreign governments.....	\$6,571,520 00
By States of the Union .....	6,020,850 00
By the United States Government (exclusive of amounts in former account).....	2,668,875 00
Total.....	\$15,251,254 00

**Awards.**—The Executive Committee of Awards consisted of the following State commissioners:

John Boyd Thacher, of New York, A. T. Britton, of the District of Columbia, A. B. Andrews, of North Carolina, A. J. Sewell, of New Jersey, and B. B. Smalley, of Vermont. This body devised a system of awards, the basis of which was a standard of excellence established in each class of exhibits, the merits of the exhibits to be measured by that standard, and not by competition with each other. For the carrying out of this there were 852 judges appointed, who were distributed through the several departments in proportion to their magnitude.

Medals were awarded to 23,757 exhibitors, 36 per cent. of the whole number catalogued, exclusive of those from France and Norway, who withdrew their exhibits from examination. This was a smaller percentage of exhibitors thus honored than the records of any previous world's exposition show. Over 250,000 separate exhibits were examined and reported upon.

There were 65,422 exhibitors, and although the system of awards met with considerable adverse criticism, still only 259 complaints were submitted in any form against the awards, and out of that number only 43 cases resulted in actual appeals. Of these appeals, all have been adjusted excepting 5. In each of them the tes-

**History.**—The usual official report of the exhibition is in course of preparation under the direction of O. V. Tousley, a commissioner from Minnesota, who was appointed historian of the World's Fair. It is estimated that the work will consist of 30 octavo volumes of 500 or 600 pages each. It will include an introduction or preface to the history, which will deal with the events which led up to the establishment of the fair and the acts of Congress authorizing it, and include a review of the industrial and educational advantages resulting from it.

This will be followed by the report of President Palmer, which will contain a history of the opening ceremonies, and deal with the exhibitions made by the United States and foreign nations. The report of the secretary will include synopses of the legislation of the commission, the work of the Board of Control and the Executive Committee, and a full financial statement. The report of the Council of Administration will cover the erection of the buildings and the manner in which the fair was conducted in all its details. There will be separate reports of the Board of Lady Managers, the Chicago Directory, and the director-general. The latter will include a report from the heads of each of the



COLORADO STATE BUILDING.

timony has been taken, the arguments submitted, and the 5 cases are in the hands of the Court of Appeal awaiting judgment.

The medals are all of bronze, designed by Augustus St. Gaudens, and the accompanying diplomas were designed by Will H. Low. They are being made under the authority and direction of the Secretary of the Treasury.

13 departments into which the exhibition was divided.

The report of the Executive Committee on Awards will be made by John Boyd Thacher, the chairman, and will occupy 15 volumes. The preparation of the reports of the congresses held during the fair has been intrusted to Mr. Butterworth.



**World's Congress Auxiliary.**—Beginning on May 15, there were held a series of congresses at the Memorial Art Palace in Chicago, under the direction of a committee consisting of Charles C. Bonney, president; Thomas B. Bryan, vice-president; Lyman J. Gage, treasurer; and Benjamin Butterworth and Clarence E. Young, secretaries. The woman's branch was under the management of Mrs. Potter Palmer, president, and Mrs. Charles Henrotin, vice-president. The purpose of these congresses was to bring together the leaders of human progress from the various countries of the world during the season of the World's Columbian Exposition in order to review the achievements that have already been made in the various departments of enlightened life, and sum up in each the progress of the world in the department involved to the date of the Congress: to make a clear statement of the living questions of the day that still demand attention, and to receive from eminent representatives of all interests, classes, and peoples suggestions of the practical means by which further progress may be made and the prosperity and peace of the world advanced.

The congresses were as follow: 1. Department

Woman's Christian Temperance Union, International Kindergarten Union, Women's National Indian Association, National Association of Loyal Women of American Liberty, National American Woman Suffrage Association, Women's Baptist Home Mission Society, General Federation of Women's Clubs, American Protective Society of Authors, Women's Centenary Association, Catholic Women's Department Congress, National Alliance of Unitarian and other Liberal Christian Women, Women's Western Unitarian Conference and Women's Unitarian Conference of the Pacific Coast, National Women's Relief Society, Young Ladies' National Mutual Improvement Association, National Society of the Daughters of the American Revolution, Women's Trades Unions, National Columbian Household Economic Association, and Association of Collegiate Alumnae.

2. Department of Public Press, under the presidency of William P. Nixon, during the week May 22-28. It included the following department congresses: Daily and General Newspapers, Press Women of the World, American Newspaper Publishers' Association, Religious Press, Trade Press Congress.

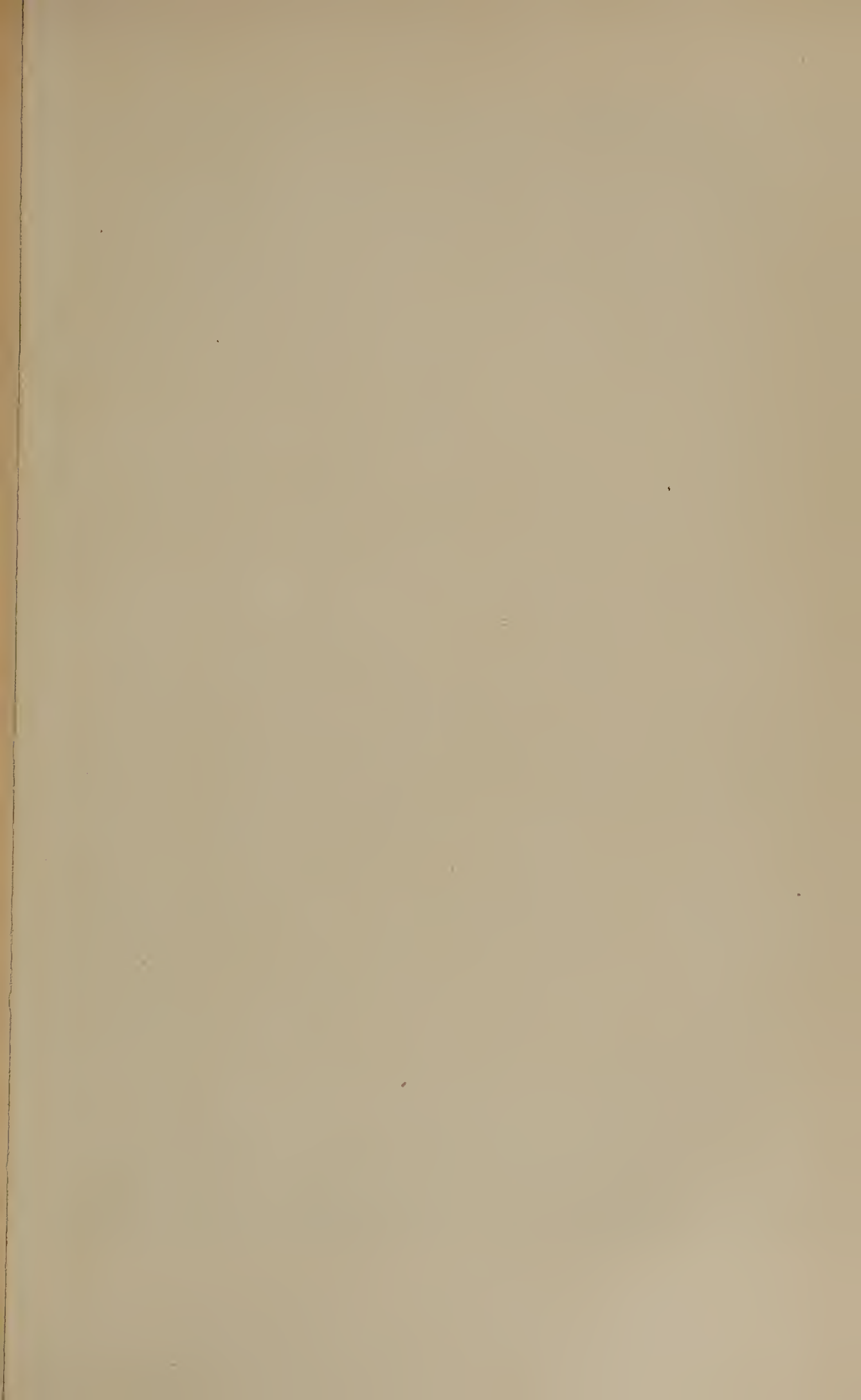


MAINE STATE BUILDING.

of Woman's Progress, under the presidency of May Wright Sewell, during the week May 15-21. It included the following department congresses: National Council of Women of the United States, International Council of Women, Order of the Eastern Star, International Committee of Young Women's Christian Associations, National Christian League for the Promotion of Social Purity,

3. Department of Medicine, including congresses of Eclectic Physicians and Surgeons, under the presidency of Dr. Milton Jay; Homœopathic Physicians and Surgeons, under the presidency of Dr. J. S. Mitchell; and Medico-Climatology, under the presidency of Dr. T. C. Duncan, during May 29 to June 3.

4. Department of Temperance, under the presi-











OF HONOR.







IDAHO STATE BUILDING.

dency of Albert G. Lawson, during June 5-10. It included the following department congresses: National Temperance Society, Sons of Temperance, Catholic Temperance Societies, Woman's Christian Temperance Union, Non-Partisan National Woman's Christian Temperance Union, Royal Templars of Temperance, Independent Order of Good Templars, American Medical Temperance Association, and Vegetarian Congress.

5. Department of Moral and Social Reform, under the presidency of Mrs. James M. Flower, during June 7-19. It included the International Congress of Charities, Correction, and Philanthropy, embracing sections on The Public Treatment of Pauperism; The Care of Neglected, Abandoned, and Dependent Children; The Hospital Care of the Sick, the Training of Nurses, Dispensary Work, and First Aid to the Injured; The Commitment, Detention, Care, and Treatment of the Insane; The Prevention and Repression of Crime and the Punishment and Reformation of Criminals; The Organization and Affiliation of Charities in Countries, States, Cities, Towns, and Villages, and Preventive Work among the Poor; and The Introduction of Sociology as a Special Topic of Investigation and Instruction in Institutions of Learning; also The International Order of the King's Daughters and Sons, Nurses' Associations, Humane Associations, and Waif Savers.

6. Department of Commerce and Finance, under the presidency of Lyman J. Gage, during June 19-24. It included department congresses of Bankers and Financiers, Railway Commerce Congress, Congress of Boards of Trade, Life In-

surance Congress, Fire Insurance Congress, Mutual Life and Accident Underwriters, and Mutual Benefit and Assessment Congress. Congress on Mercantile Credits. World's Railway Commerce Congress, under the presidency of G. R. Blanchard, met from June 19 to June 24. United States League of Local Building and Loan Associations, under the presidency of Seymour Dexter, met from June 27 to June 30.

7. Department of Music, under the presidency of Theodore Thomas, during July 3-10, including meetings of the American College of Musicians, Music Teachers' National Association, Woman's Musical Congress, Illinois Music Teachers' Association, with special congresses on musical education, music journalism, Indian and folk song music.

8. Department of Literature, including Congress of Authors, Congress of Historians and Historical Students, Congress of Librarians, Congress of Philologists (including American Philological Association and Modern Language Association of America), American Dialect Society, and Folk-Lore Congress, met during the week beginning July 10.

9. Department of Education, including department congresses of College and University Students, Manual and Art Education, Kindergarten Education, Instructors of the Deaf, General Education, Representative Youth, University Extension, Deaf-Mutes, Educators of the Blind, Chautauquan Education, College Fraternities, Social Settlements, Emma Willard Memorial Association, Stenographers, Higher Education, Women Stenographers, met from July 17 to July 24. Also



the Business and Commercial College Congress met during July 25-28, and at the same time the National Educational Association, the American Association of Educators of Colored Youth, and the National Geographic Society held special meetings.

10. Department of Engineering, under the presidency of E. L. Cortheil, met during the week beginning July 31. It included congresses in Civil Engineering, in charge of the American Society of Civil Engineers; Mechanical Engineering, in charge of the American Society of Mechanical Engineers; Mining Engineering, also

11. Department of Art held congresses during the week beginning July 31 on Architecture, Photography, Ceramic Art, Painting and Sculpture, and Decorative Art, with contemporaneous meetings of the American Institute of Architects.

12. Congresses on Jurisprudence and Law Reform, with Henry W. Rogers as chairman; on Civil Service Reform, with Leroy D. Thoman as chairman; on City Government, with Walter Q. Gresham as chairman; on Suffrage, with Thomas W. Palmer as chairman; and on Arbitration and Peace, with Josiah Quincy as chairman, were held during the week beginning Aug. 7.

13. Congresses on Africa, with James E. Roy as chairman; on Dentistry, with Dr. L. D. Shepard as chairman; on Medical Jurisprudence, with Clark Bell as chairman; on Horticulture, with P. J. Berckmans as chairman, were held during the week beginning Aug. 14.

14. Department of Science and Philosophy, including congresses on Psychical Science, with Elliott Coues as chairman; on Philosophy, with R. N. Foster as chairman; on Geology, under the auspices of a committee of the American Association for the Advancement of Science, with Thomas C. Chamberlain as chairman; on Pharmacy, under the auspices of the American Pharmaceutical Association; on Chemistry, under the auspices of the American Chemical Society and the chemical section of the American Association for the Advancement of Science, with Harvey W. Wiley as chairman; Meteorology, Climatology, and Terrestrial Magnetism, with Mark W. Harrington as chairman; on Electricity, under the chairmanship of Henry A. Rowland; and on Mathematics and Astronomy, with George W. Hough as chairman; on Anthropology, with Daniel G. Brinton as chairman; on Zoölogy, with Stephen A. Forbes as chairman, met during the week beginning Aug. 21.

15. Congresses of the Jewish Denomination, with B. Bettman as chairman; on Social and Economic Science, with John H. Gray as chairman; on Labor; on Single Tax, with Joseph T. Ripley as chairman, met during the week beginning Aug. 28.

16. Religion. Beginning with the Jewish Church Congress on Aug. 27, there were subsequently held congresses of the following denominations: Evangelical Lutheran, Catholic, Colored Catholic, Jewish Women, Congregational Church, Lutheran General Synod, Universalist Church, Disciples of Christ, New Jerusalem Church, United Brethren Church, Advent Christian Church, Reformed Episcopal Church, Lutheran Women, Theosophists, Seventh-Day Baptist, Presbyterian Church, Unitarian Church, Friends, Christian Scientists, Free Religious Association, Reformed (Dutch) Church, African Methodist Episcopal Church, Friends (orthodox) Church, German Evangelical Synod of North America, Methodist Episcopal, Swedish Evangelical Mission Covenant, Buddhists, Cumberland Presbyterian Church, Evolutionists, Sunday Rest, Ethical Societies; besides which, and in conjunction with the proper denominations or sects, meetings were held of the Catholic Truth Society, Societies of St. Vincent de Paul, German Catholic Young Men's Guilds, Catholic Benevolent Legion, Catholic Young Men's National



A BIT IN EGYPT.

Metallurgical Engineering, in charge of the American Institute of Mining Engineers; Engineering Education; Military Engineering; and Marine and Naval Engineering. Also an Aërial Navigation Conference and a Water Commerce Congress met during Aug. 1-5.

Union, Catholic Press, Students of the American College of Louvain, Catholic Young Men's Societies, Christian Endeavor, Evangelical Association, Young Women's Christian Association, King's Daughters and Sons, closing finally with

American Public Health Association, a Congress on Public Health, with Dr. S. H. Durgin as president, was held during Oct. 10-14.

18. Department of Agriculture, under the presidency of Samuel W. Allerton, including



A street in Cairo

special congresses on Missions and a meeting of the Christian Alliance. The gathering of these bodies continued until Oct. 15.

17. A Congress on Patents and Trade-Marks, under the presidency of Henry W. Blodgett, began on Oct. 2, followed by that of the Evangelical Alliance on Oct. 8, under the presidency of William E. Dodge. A Humane Congress, with John G. Shortall as presiding officer, was held during Oct. 11-13, and under the auspices of the

special congresses on Fisheries, Veterinary Surgery, Good Roads, Household Economics, Farm Life and Mental Culture, Agricultural Education and Experiment, Ornithology and Forestry, was held during the week beginning Oct. 16.

19. A Second World's and Twentieth National Convention of the Woman's Christian Temperance Union was held during Oct. 16-21, followed by a World's Real-Estate Congress during Oct. 23-25, and the final session of the World's Con-





A BIT OF OLD VIENNA.

gresses, presided over by Mr. Bonney, was held on Oct. 28.

According to an official report of the secretary, there were 210 working committees, a local membership of 1,600, and a nonresident membership of 15,000. In preparation for these congresses there were sent out over 1,000,000 circulars. There were held 1,245 sessions, with 5,974 speakers, and a total attendance of over 700,000. It will require 50 volumes of 600 pages each to contain the published proceedings, papers, and addresses.

**The End.**—It was the intention of the officials of the World's Fair to make the closing day an event second in importance and interest to the opening. With this end in view, elaborate preparations had been undertaken, but at the last moment all ceremonial exercises were abandoned, and the fair closed quietly and in sadness. Two days before the end the bullet of an insane assassin killed Mayor Harrison, and in respect to his memory the programme was canceled.

The closing ceremony took place in Festival Hall on Oct. 30 at 1 p. m., when President Palmer said:

It was intended that the speeches of to-day should be of a joyous character; that the closing ceremonies of the World's Columbian Exposition of 1892 and 1893 should be attended with festivities, the firing of cannons, the music of bands, the making of speeches,

and song. But a terrible tragedy has intervened to bring sorrow to the city of the fair and to the world as represented here. The mayor of that city which has done so much for this exposition has been shot down by an assassin in the portals of his home. His every heartbeat pulsed with love for the city and interest in the exposition. In view of this catastrophe, it is deemed proper that the programme of festivities should be omitted, and the exercises consist only of prayer, the reading of resolutions of condolence, and the benediction.

A prayer by Dr. Barrow, of Chicago, followed, after which, in a brief speech, President Higinbotham offered resolutions expressing the obligations of the fair to Hon. Carter Harrison, Mayor of Chicago and a director of the exposition, and sorrow for his death. (See page 371 of this volume.)

A benediction followed, and the sharp sound of the gavel of President Higinbotham brought the World's Columbian Exposition to a close. The funeral marches of Chopin and Beethoven were played on the great organ as the crowd dispersed.

At sunset, 4.45 o'clock, the colors of all nations, which had been flying at half mast since sunrise on Sunday, were lowered together, and at the word of command from artillery officers the guns of a battery facing the water of the lake gave the signal telling the world that with the sinking of the sun the World's Fair had come to an end.





VIEW OF ADMINISTRATION BUILDING, SEEN FROM THE NORTH. ELECTRICITY BUILDING ON THE LEFT, MINES BUILDING ON THE RIGHT.





**WYOMING**, a Northwestern State, admitted to the Union July 10, 1890; area, 97,890 square miles; population in 1890, 60,705. Capital, Cheyenne.

**Government.**—The following were the State officers during the year: Governor, J. E. Osborne, Populist; Secretary of State, Amos W. Barber; Auditor and Insurance Commissioner, C. W. Burdick; Treasurer, Otto Grumm; Attorney-General, C. N. Potter; Adjutant-General, F. A. Stitzer; Chief Justice, H. V. S. Groesbeck; Clerk of the Supreme Court, R. H. Reputh; Superintendent of Public Instruction, S. T. Farwell.

**Finances.**—The Auditor's biennial estimate of the revenue for the two years ending March 31, 1895, is as follows: General fund, \$250,000; Capitol tax, \$8,064; university tax, \$8,064; the fund for the insane, \$24,193; State bond tax, \$38,400; Capitol building fund, rents, \$6,500; Deaf, Dumb, and Blind Asylum, rents, \$250; insurance fees, \$5,000; Building and Loan Association fees, \$350; register State Land Board, fees, \$800; Secretary of State, fees, \$1,500; clerk of Supreme Court, fees, \$200; common school, \$30,000; buildings at State capital, \$500; university, \$1,500; blind, deaf, and dumb, \$1,000; Insane Asylum, \$2,000; fish hatchery, \$200; other land funds, \$3,000; revenues from permanent land funds, \$3,000; total estimated revenue, \$384,521.

His estimate of the expenditures is as follows: Appropriations, \$271,545; Capitol maintenance and improvement, \$14,500; State University, \$8,064; State Insane Asylum, \$24,193; interest on State bonds, \$38,400; common schools (land income), \$30,000; other State institutions (land income), \$2,500; institutions receiving revenue from the permanent land funds, \$2,500; total estimated expenditures, \$391,702.

**Taxation.**—The various rates at which the assessments for State revenue are made are as follow: General fund,  $3\frac{7}{8}$  mills; Capitol tax,  $\frac{1}{4}$  mill; university tax,  $\frac{1}{4}$  mill; fund for the insane,  $\frac{3}{4}$  mill; bond tax,  $\frac{7}{10}$  mill; total rate,  $5\frac{2}{10}$  mills. The rate of taxation in the different counties varies from  $9\frac{3}{10}$  mills to  $21\frac{1}{4}$  mills. This does not include school-district levies or municipal-tax levies. Exemption from taxation is as follows: Property of United States, State, counties, school districts, municipal corporations, and public libraries; lots with buildings thereon used exclusively for religious worship, church parsonages, public cemeteries, grounds and buildings of literary and scientific institutions incorporated under State laws; grounds and buildings of benevolent, agricultural, and religious societies, used solely by them, not exceeding 3 acres in extent, or the revenue devoted solely to such objects; household furniture, not to exceed \$100; polls of all persons over fifty years old.

**Indebtedness.**—The total bonded indebtedness is \$320,000. The issues are: Capitol-building bonds, \$150,000, one tenth payable in 1901 and one tenth each year thereafter; university bonds, \$50,000, same as preceding; Insane Asylum bonds, \$30,000, one tenth in 1912 and one tenth each year thereafter; public buildings, \$90,000, one tenth payable in 1918 and one tenth each year thereafter. The interest on all these bonds is at 6 per cent. As a basis for this indebtedness the State owns, without other incumbrance, pub-

lic buildings and grounds costing \$491,855.30 and the Penitentiary, at Laramie, which was donated to the State under the Admission act, and is valued at about \$70,000, making a total of \$561,855.30.

**Banks.**—An abstract of the statement of the condition of the national banks, Dec. 19, 1893, shows: Total specie, \$311,155; individual deposits, \$2,080,018; loans and discounts, \$2,312,823; surplus fund, \$162,900. The reserve is 35.75 per cent., as against 22.97 per cent. Oct. 3.

**State Buildings.**—The cost of each of the public buildings of the State was as follows: Capitol building, Cheyenne, \$295,649.59; University building, Laramie, \$80,753.95; Insane Asylum, Evanston, \$66,134.66; Poor Asylum, Lander, \$5,053.39; Penitentiary, Rawlins, \$31,844.41; Deaf, Dumb, and Blind Asylum, Cheyenne, \$7,919.30; fish hatchery, Laramie, \$4,500.

**Public Lands.**—During the year Wyoming received \$4,439.40 as its 5 per centum on the sale of public lands. The number of acres of public land vacant in the State July 1, 1893, was 53,403,164; the forest reservation was 1,239,040 acres; the Indian reservation, 1,818,000 acres.

**Wealth.**—The estimated population of the State on June 1, 1892, was 74,000; the capital was \$4,890,896. About 80 per cent. of the farms are cultivated by owners; 13 per cent. of these farms are subject to a total incumbrance of \$455,061, which is 35 per cent. of their value. The average rate of interest is 10.92. About 38 per cent. of the nonfarming population own their homes, 14 per cent. of them being subject to incumbrances aggregating \$589,238, or 42 per cent. of their value. Each owned and incumbered farm, on the average, is worth \$3,600 and is subject to a debt of \$1,247.

**Education.**—The University of Wyoming employed 14 instructors and enrolled 120 pupils. The buildings and grounds are valued at \$150,000, and the library contains 2,300 bound volumes. The public schools, with an enrollment of 9,426 pupils, employed 367 teachers. The average number of days in the school year was 120, and the average daily attendance 6,110.

**Live Stock.**—Wyoming shipped 94,295 head of cattle during 1893. The Stock-Growers' Association reported its financial condition for the year ending March 31, 1893, as follows: Balance on hand March 31, 1892, \$822.35; receipts, \$704.96; disbursements, \$209.50; balance in treasury, \$1,362.05.

**Legislative Session.**—The Legislature convened on Jan. 2, and adjourned on Feb. 23. Comparatively little business was transacted. Among the acts of the session are the following:

To protect employees of corporations, companies, or individuals, or other persons nominated as candidates at any election, in their rights as citizens.

Providing for and adopting a great seal of the State.

Providing for the levying of and collecting a tax of three fourths of a mill for the year 1893, and one fourth of a mill for the year 1894, for the erection, equipment, management, and conduct of a miners' hospital at Rock Springs.

Providing for an allowance of good time, discharge money, and clothing to State convicts.

Fixing State senatorial and representative districts, and determining the legislative representation thereof.



Ceding to the United States jurisdiction over certain military posts and lands and the Shoshone Indian reservation.

Prescribing the age at which deaf and dumb children may be admitted as pupils in the Blind, Deaf, and Dumb Asylum as State charges.

Amending an act entitled An Act regulating voluntary assignments and for other purposes, approved March 13, 1890.

Joint memorials were sent to Congress praying for the submission of a constitutional amendment providing that United States Senators shall be elected by a vote of the people, and desiring Congress to enact laws to restore silver to the position occupied in the currency of our country prior to the demonetization act of 1873.

No Senator was elected by the Legislature of 1893 to succeed the Hon. Francis E. Warren, (Republican). After the expiration of his term the Governor appointed A. L. Beckwith, who resigned before the United States Senate had taken final negative action on similar appointments, and so until the next meeting of the Legislature the State remains with but one representative in the Senate.

**Woman Suffrage.**—The following concurrent resolution was unanimously adopted by the Legislature:

*Resolved*, By the second Legislature of the State of Wyoming, that the possession and exercise of suffrage by the women in Wyoming for the past quarter of a century has wrought no harm and has done great good in many ways; that it has largely aided in banishing crime, pauperism, and vice from this State, and that without any violent or oppressive legislation; that it has secured peaceful and orderly elections, good government, and a remarkable degree of civilization and public order, and we point with pride to the facts that after nearly twenty-five years of woman suffrage not one county in Wyoming has a poorhouse, that our jails are almost empty, and crime, except that committed by strangers in the State, almost unknown, and as the result of experience we urge every civilized community on the earth to enfranchise its women without delay.

*Resolved*, That an authenticated copy of these resolutions be forwarded by the Governor of the State to the Legislature of every State and Territory in this country, and to every legislative body in the world; and that we request the press throughout the civilized world to call the attention of their readers to these resolutions.

## Y

**YACHTING.** The preliminary conditions of yachting for 1893 pointed early in the year to an unprecedented rivalry between the two great maritime nations of the world, and the promise was borne out in the construction of a fleet of sailing craft the like of which has never been afloat before. The series of international sailing races that followed on both sides of the ocean place the year easily at the head of the yachting calendar, and, in view of the increasing use of propulsive machinery for pleasure craft, it seems probable that the sailing yacht has reached the zenith of its popularity, though not by any means its ultimate perfection in build and equipment.

This culmination of interest in a noble and manly sport that trains seamen and officers for the ships of two great nations is due to the inauguration of international yacht racing by a company of New York yachtsmen, who in 1851, the year of the first World's Fair in London, sent the schooner-yacht "America" to try conclusions with the Royal Yacht Squadron. Her sailing powers were so undeniably superior to everything that the English could bring forward that she can hardly be said to have had an official chance to demonstrate them. However, she brought home the trophy now known as "The 'America's' Cup," which is by common consent recognized as the emblem of the world's yachting supremacy.

English yacht architecture was largely modified in model and rig from the example set by the "America." Sails were cut to set flat, masts were sharply raked, and entrance lines were made longer and finer. English designers, however, continued to build their boats narrow and deep rather than broad and shallow, as was the tendency in America.

Nineteen years passed before an attempt was made to win back the cup, and during that time English designers had worked out results that

introduced wide divergence from the American type both in schooners and in "single stickers," as has come to be the common designation of sloops and cutters. The diagrams given herewith show all English challengers and all the American cup defenders with their respective midship sections. The lines are necessarily drawn to such a small scale that they must not be accepted as absolutely accurate. Some of them are off-hand sketches from models, and others are from official lines. They are merely intended to serve for purposes of comparison.

It should be explained here that in 1876 and 1881 Canadian yachts challenged for the cup—namely, "The Countess of Dufferin" (schooner) and "Atalanta" (sloop). They were easily defeated respectively by "Madeline" and "Mischief," and the only interesting incident in connection with the two matches is that the Canadians had the honor of sailing the last schooner race and beginning the list of sloops. Diagrams of these yachts are omitted because they were not British types, and had no influence upon the development of yacht architecture.

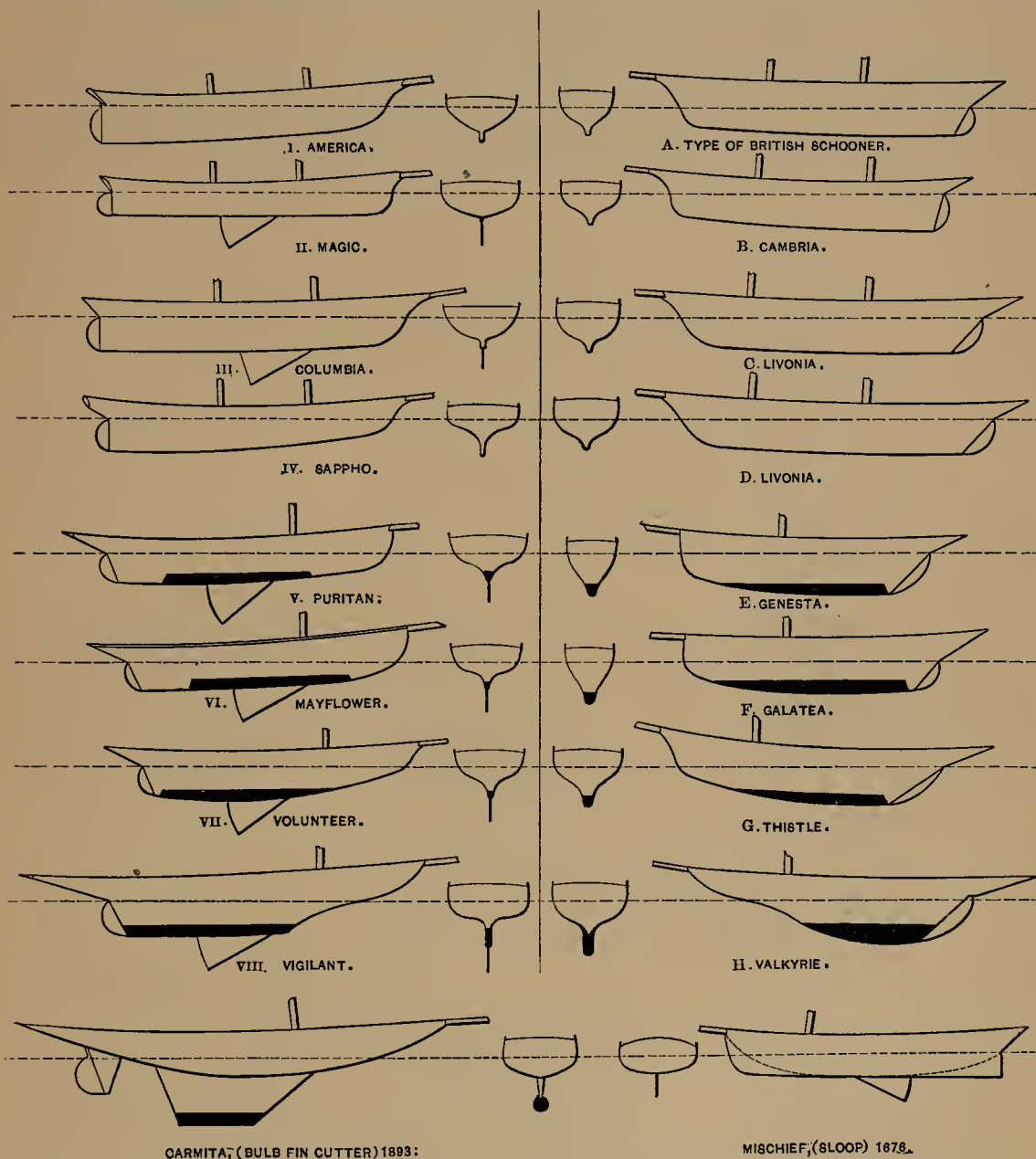
Nine large "single stickers"—5 American and 4 British—were built for the season of 1893, the exciting cause being cross challenges by the Earl of Dunraven for the "America's" cup and by Mr. Royal Phelps Carroll, of New York, for the "Victoria gold cup." America was represented by "Navahoe," "Vigilant," "Colonia," "Jubilee," and "Pilgrim"; Great Britain, by "Valkyrie," "Britannia," "Satanita," and "Calluna." All were of the 90-foot class, the largest single-stick yachts ever constructed. They all had the new overhanging bows. "Pilgrim" and "Jubilee" were of the fin-keel type, but did not distinguish themselves, owing, perhaps, to lack of experience in the management of this class of vessel. "Navahoe" failed to capture the prize for which she crossed the ocean, though she won

several races, and, upon the whole, made a better record than she is given credit for.

"Valkyrie" was fairly beaten by "Vigilant" in the races for the "America's" cup off New York in October.

Shortly after the "Volunteer" and "Thistle" contest the Herreshoff Brothers, of Bristol, R. I.,

began to deviate from the regular profile and smooth continuous curves traditional with designers. "Vertical" and "clipper" stems gave way to the "overhang" or "shovel-nose" type, and successful experiments were made with "fin" and "bulb" keels. These last bid fair to play a prominent part in the future.



CARMITA, (BULB FIN CUTTER) 1893:

MISCHIEF, (SLOOP) 1878.

First race, 1851. Round the Isle of Wight, England. (I) Schooner yacht "America" against the Royal Yacht Squadron. (A = a type of the British schooner yacht of that time.)

Second race, 1870. New York Bay. British schooner yacht "Cambria" (B) against the New York Yacht Club Squadron. "Magic" (II) led the fleet.

Third race, 1871. New York Bay. British schooner yacht "Livonia" (C and D) against American yachts "Columbia" (III) and "Sappho" (IV).

Fourth race, 1876. New York Bay. Canadian schooner "Countess of Dufferin" against American schooner "Madeline."

Fifth race, 1881. New York Bay. Canadian sloop "Atalanta" against American sloop "Mischief."

Sixth race, 1885. Off New York. British cutter "Genesta" (E) against American sloop "Puritan" (V).

Seventh race, 1886. Off New York. British cutter "Galatea" (F) against American sloop "Mayflower" (VI).

Eighth race, 1887. Off New York. British cutter "Thistle" (G) against American sloop "Volunteer" (VII).

Ninth race, 1893. Off New York. British cutter "Valkyrie" (H) against American sloop "Vigilant" (VIII).



"Mischief," the crack sloop of her day, was a conspicuous example of the center-board sloop. "Carmita" was launched in 1893, and was the first large boat of her type. Her lines are kindly furnished by her owner, Mr. C. H. W. Foster. She was designed by Waterhouse & Cheesborough, and has made a fairly good showing for a new boat. The black indicates a cigar-shaped lead bulb, bolted to the edge of her fin. There is an obvious likeness between the cross sections of the two boats, and if "Mischief's" "deadwood" were cut away along the dotted line the resemblance would be still closer. The fin keel is, in fact, a fixed center board, and the canoe-shaped under body is an aggravated form of what was formerly termed a "skimming dish."

At first sight it would seem that the fin keels are essentially racing machines, but it is not certain that they may not prove to be able deep-water boats. The construction is simple and strong, the frames being true inverted arches for a large section of the length—an exceedingly strong form to which the two plates of the fin can be securely bolted. The fin and its bulb attachment are the heaviest part of the structure—a sort of pendulum, in fact, to which the lighter hull is attached. The canoelike body is exceedingly buoyant and easy in a sea way, and when sailing masters have learned how to handle them it is held by their advocates that fin keels will be accepted as an important improvement in scientific construction.

# INDEX

TO THE EIGHTEEN VOLUMES, NEW SERIES, OF THE ANNUAL CYCLOPÆDIA.

1876 to 1893.

- Aarifi Pasha, sketch, ii, 1.  
 Abba, battle at, x, 317.  
 Abbe, C., observations by, iii, 34; xii, 487.  
 Abbe, Prof., of Jena, ix, 502, 507-510.  
 Abbot, Ezra, obit., ix, 601.  
 Abbott, B. V., obit., xv, 631.  
 Abbott, C. C., discovery by, vi, 19; ix, 16; xi, 23.  
 Abbott, Emma, obit., xvi, 603.  
 Abbott, Helen C. D., x, 45; xi, 46.  
 Abbott, J. C., obit., vi, 678.  
 Abbott, Josiah G., obit., xvi, 603.  
 Abbott, J. S. C., sketch, ii, 1.  
 Abbott, W. P., obit., iii, 631.  
 Abdallah, Tashi, xii, 244.  
 Abdallah, the Sheik, v, 623.  
 Abd-el-Kader, sketch, iv, 1; x, 317, 318.  
 Abd-el-Samet, ix, 301.  
 Abdomen, the, xiii, 752.  
 Abdominal section, x, 742.  
 Abdul-Aziz, i, 1, 760.  
 Abdul-Hamid II, i, 2; vi, 841.  
 Abdul Kerim Pasha, sketch, ii, 1; x, 317.  
 Abdul Melik, xi, 6.  
 Abdul Munin Khan, xi, 6.  
 Abdurrahman Khan, v, 1; struggle with Ayoub, vi, 3; viii, 1, 4; ix, 3, 5; x, 2, 4, 7, 12; xi, 4, 5; xii, 491.  
 Abdy, Sir T. N., obit., ii, 591.  
 A'Beckett, G. A., obit., xiv, 663.  
 Abel, Gustavus, obit., xii, 567.  
 Abel, Frederick A., experiments by, iv, 131; theories, x, 160, 343, 574; port., xv, 31.  
 Abell, Arunah S., sketch, xiii, 621.  
 Abercorn, Duke of, obit., x, 655.  
 Abercrombie, J. J., obit., ii, 574.  
 Abercrombie, Ralph, xii, 491.  
 Aberdare Mountains, ix, 347.  
 Aberdeen, Earl of, port., xviii, 263.  
 Aberdeen, S. Dak., xv, 118.  
 Aberdeen, Wash., xvi, 145.  
 Aberration, constant of, xiii, 56.  
 Aboo Roash, pyramid of, ix, 21.  
 About, E., obit., x, 655.  
 Absentee, xiii, 1.  
 Absorption of liquids through the stomach, xii, 676.  
 Abt, Franz, obit., x, 656.  
 Abu Hubba, inscriptions from, xii, 17.  
 Abu Klea Wells, engagement at, ix, 304; x, 116, 314, 319.  
 Abydos, Tablet of, vii, 257.  
 Abyssinia, in volumes i, ii, iv, xi, and xii; war with Egypt, i, 3; ii, 2; iv, 2, 333; v, 236; views in, illustrations, i, 4, 5; ii, 2; provinces of, ii, 2; cession of Massowah, viii, 302; treaty, ix, 296; the Italians in, xi, 1; xii, 1; attack on them, xii, 2; conquest of Harrar, xii, 2; treaty with England, xii, 1; intercourse with Russia, xi, 1; xiii, 2; xiv, 1; xv, 1; xvi, 1; xvii, 1; xviii, 1.  
 Academy of Sciences, National, xv, 572; xvi, 543; xvii, 480; xviii, 502.  
 Acadia, ix, 265.  
 Acadia College, i, 67.  
 Accident-insurance law, ix, 357.  
 Accident to workmen, Congress on, xiv, 813.  
 Acclimatization, xii, 669; capability of races for, 669.  
 Acetanilide, xi, 289.  
 Acetophenone, xi, 289.  
 Acetoxims, viii, 111.  
 Achard, invention by, vi, 255.  
 Acharenza, Duchess of, obit., i, 627.  
 Acheen, war in, i, 584; ii, 541; iii, 597; iv, 657; v, 555; vi, 625; vii, 590; viii, 557; ix, 557; x, 625; xi, 608, 609; pirates in, 609; new disease in, 608.  
 Acheson, A. W., obit., xv, 631.  
 Achterfeldt, J. H., obit., ii, 591.  
 Acids, new, ii, 91; viii, 111; xii, 105.  
 Acollas, Émile, obit., xvi, 663.  
 Aconcagua Mountains, ix, 542, 543.  
 Acropolis at Athens, xiii, 26.  
 Adair, W. P., obit., v, 587.  
 Ada Kaleh, fortress of, iii, 45.  
 Adam, Edmond, obit., ii, 551.  
 Adam, John J., sketch, xiii, 621.  
 Adam, W. P., obit., vi, 690.  
 Adami, J. G., experiments by, x, 692.  
 Adams, Alvin, obit., ii, 574.  
 Adams, Charles Francis, obit. and portrait, xi, 1.  
 Adams, Edwin, sketch, ii, 3.  
 Adams, Henry, xii, 479.  
 Adams, J. C., obit., xvii, 583.  
 Adams, J. F., obit., vi, 678.  
 Adams, James O., obit., xii, 567.  
 Adams, William, obit., v, 587.  
 Addington, Lord, sketch, xiv, 654.  
 Adce, Daniel, obit., xvii, 531.  
 Aden, xiv, 398; xv, 404; xvi, 342; xvii, 325.  
 Adirondack Forests, viii, 356, 576; ix, 582; x, 635.  
 Adler, ix, 359.  
 Adler, N. M., obit., xv, 672.  
 Adler, Samuel, obit., xvi, 603.  
 Adlie, battle at, x, 728.  
 Admiralty building explosion, x, 454.  
 Adolf, George, prince, obit., xviii, 576.  
 Adrain, G. B., obit., iii, 631.  
 Adulterations of Food, iv, 2; vi, 81, 407, 523, 639; ix, 1; test for glucose in sugar, viii, 112; laws concerning, ix, 3.  
 Advancement of Science, Associations for, ix, 44; x, 44; xi, 46; xii, 31.  
 Advent Christian Church, v, 2. See Adventists.  
 Adventists, i, 5; ii, 3; iii, 1; iv, 5; vi, 1; a prophetess, ii, 4; iv, 5; differences between Seventh-Day, and Seventh-Day Baptists, iii, 49; faith, vi, 1; xi, 2; xii, 3; history, xi, 2; Sabbath question, iii, 4; xiii, 5; xiv, 3; xviii, 4.  
 Æolian Harp, the, x, 607.  
 Æolian Organ, the, x, 618.  
 Aërial Navigation, vi, 548; ix, 72.  
 Aërial Transportation. See Telepherage, viii, 679.  
 Affirmation. See Oaths.  
 Afghanistan, i, 6; ii, 4; iii, 2; iv, 6; v, 3; vi, 2; ix, 3; x, 1; xi, 1; xii, 4; maps, i, 7; iii, 3; iv, 8, 13; v, 5; viii, 1; x, 3; map of Cabul, iv, 13; map of Candahar, v, 7; frontier question, ix, 6, 406, 713; x, 1, 2, 16; xi, 4; Russian and British embassies to, i, 6; views of Cabul and Herat, ii, 5, 6; x, 1; negotiations with Russia, ii, 5, 6; with the Indian Government, iii, 4; view of Candahar, iii, 5; of Lasgird, ix, 5; towers of refuge in, ix, 7; Zhob valley expedition, ix, 7; strategic railroad in, ix, 6; x, 12, 13; xii, 6; map of neutral territory, x, 3; Russian advance, x, 5; xi, 5; the disputed district, x, 6; Herat, x, 7; Penjdeh affair, x, 8; battle, x, 9; the Durbar at Rawal Pindi, x, 12; the Hindus, x, 14; the great powers, x, 15; illustration, junction of the Murghab and Kushk, x, 17; xiii, 6, 439; xiv, 5; xv, 3; xvi, 2; xvii, 2; xviii, 1; sub-



- mission of Vakhian to Russia, xi, 5; revolt, xi, 5; trans-Caspian railway, xi, 6; xii, 6; Ghilzal revolt, xii, 5; Russian occupation of Kerki, xii, 7, 308; new ally for Russia, xii, 7; rebellion in, xvii, 2.
- Afghans, descent claimed by, ii, 4; tribes of, v, 3.
- Afghan War, the, see Afghanistan in vols. iii, iv, v, vi, ix, and x; effect in India, iii, 437; iv, 491; meeting in London, iv, 494; discussed in Parliament, v, 330, 337, 343; vi, 362; Russian correspondence, vi, 800; cost of, v, 336; effect in Persia, v, 622; change in British policy, vi, 2; withdrawal of British troops, vi, 359; map of neutral territory, x, 3; Afghan boundary, x, 2, 4; xii, 8, 309; map, x, 3, 497; history of the question, ix, 4; x, 1; frontier negotiation, xii, 8.
- Africa, i, 8; ii, 7; iii, 7; iv, 14; v, 9; vi, 4; dispute of England and Germany in, ix, 362-365; x, 119, 395, 415, 459; French annexation in eastern, ix, 339; Italian, x, 504; xii, 304; Portuguese claims in, xi, 371; French, xi, 374; religious institutions in, x, 316. And see articles Cape Colony, Congo Free State, and East Africa.
- Africa, Central, exploration of, see Geographical, etc., in every volume, and ix, 165, 171; treatment of travelers in, iv, 401, 402, 406, 407; customs, iv, 403, 404; extermination of a tribe, iv, 407; interior sea, ix, 315; map of, xiv, 349; southern, map of, xiii, 123; exploration, with map, xviii, 336.
- Afridis, hostilities by, ii, 394.
- Afriskander Bond, the, x, 135.
- Agar, F. L. C., obit., xvi, 663.
- Agaricine, vii, 88.
- Agassiz glacier, ix, 35.
- Agassiz, Louis, glacier theory, x, 407.
- Agates, ix, 790; Brazilian, ix, 790.
- Agar, Antonio Augusto, obit., xii, 567.
- Agnew, C. R., sketch, xiii, 621.
- Agnew, David Hayes, obit., xvii, 531.
- Agnostic, xiii, 7.
- Agop, P. K., obit., xvi, 663.
- Agout, Countess d', sketch, i, 9.
- Agrarian agitations in Wales, xi, 404; in Russia, 791; in Germany, xviii, 348.
- Agricultural distinctions, xiv, 723.
- Agricultural wheel, xi, 42.
- Agriculture, i, 10; ii, 8; iii, 7; v, 10; percentage of cultivated lands in various countries, ii, 8; department of, in N. C., ii, 573; sugar in Minn., ii, 523; in Miss., i, 574; wheat weighing and inspection, iv, 623; facilities in N. C., iv, 690; decline of, in England, vii, 1; experiment station, vii, 511; U. S. Department of, established, xiii, 234; xiv, 217; statistics, xvi, 845. And see the articles on the States.
- Ahmed el Hedday, ix, 299.
- Ahmed el Hoda, ix, 299.
- Ahmed Mukhtar Pasha, xii, 242.
- Ahmed Vefyk Pasha, sketch, ii, 11.
- Ahn, Prof., x, 191.
- Ahrens, C. D., ix, 517.
- Aigan, J., obit., iii, 631.
- Aiguer, Joseph, obit., xi, 708.
- Aiken, Charles Augustus, xvii, 531.
- Aiken, David W., obit., xii, 567.
- Aiken, F., obit., iii, 631.
- Aiken, William, obit., xii, 567.
- Ain Quadis, site of Kadesh-Barnea, ix, 27.
- Ainsworth, W. H., obit., vii, 644.
- Aird, Thomas, sketch, i, 14.
- Air-thermometer, vii, 92.
- Airy, G. B., observations, vi, 39; obit., xvii, 583.
- Aitken, John, on fogs, v, 275; dew, xi, 541.
- Aizpuruz, Gen., x, 179.
- Akerman, A. T., obit., v, 587.
- Akerson, Garret, Jr., obit., xi, 708.
- Akhoond of Swat, obit., iii, 648.
- Akkas, the, vi, 4.
- Akmin, inscribed tablet at, xi, 29.
- Akron, Ohio, xvi, 146.
- Aksakoff, Ivan Sergervich, obit., xi, 708.
- Aktapa, x, 8, 10; view of, 17.
- Aktcha, district of, x, 4, 8.
- Alabama, government, statistics, etc., in every volume; Department of Agriculture, viii, 2; tax law, viii, 2; Treasurer absconded, viii, 3; lumber industry, ix, 7; coal in, ix, 7; Confederate monument in Montgomery, xi, 8; view of Capitol, ii, 12.
- Alabama claims, the, x, 436.
- Alameda, Cal., xviii, 151.
- Alarcon, P. A., obit., xvi, 663.
- Alarms, electric, ix, 309.
- Alaska, iv, 24; map, iv, 25; people, v, 301; need of government, v, 648; statistics, vi, 9; fur-seal industry, vii, 6; volcanoes, viii, 287; Territorial government, ix, 10; x, 399, 765; xi, 380, 826; expedition to, xii, 314; gold in, xii, 779; xvii, 298; boundary of, xiv, 362; xv, 355, 831.
- Alatorre, Gen., x, 466.
- Albanian League, the, against surrender of territory, v, 687, 688; vi, 842; opposition to Montenegro, v, 542; viii, 549; map of Albania, i, 751; disturbances in, ix, 764; x, 752.
- Albany, Capitol at, iv, 671; vi, 658; vii, 614; viii, 570, 575; xi, 159; bi-centennial of, xi, 8; stadt huis, illustration, xi, 8; old Dutch church, illustration, xi, 11; flag, illustration, xi, 11.
- Alberger, F. A., obit., ii, 574.
- Alber, E., obit., iii, 649.
- Albert, J. S., obit., v, 588.
- Albert, Prince of Prussia, made Regent of Brunswick, x, 418.
- Albert, Prince, obit., xvii, 583.
- Albert, W. J., obit., iv, 692.
- Albert Lake circumnavigated, i, 331; Stanley's journey, i, 333.
- Alberta, Territory of, viii, 81; ix, 270.
- Alberti, C., obit., xv, 672.
- Albertis, explorations by, i, 329.
- Albery, James, sketch, xiv, 654.
- Albrecht, W. E., sketch, i, 18.
- Albuféra, Due de, obit., ii, 591.
- Albuminoids, in grain, v, 92.
- Albumose, new forms of, ix, 121.
- Alcohol, test for, i, 97; estimation of, in a mixture, ii, 92; freezing-point of mixtures, vi, 100; statistics, iv, 24; effect of, xii, 672.
- Alcott, Amos Bronson, sketch and port., xiii, 10.
- Alcott, Louisa May, sketch and port., xiii, 11.
- Alden, Admiral J., sketch, ii, 13.
- Alden, Joseph, obit., x, 645.
- Aldrich, Anne Reeve, obit., xvii, 531.
- Aleko Pasha, sketch, iv, 26; x, 107.
- Alencar, J. M. de, obit., ii, 591.
- Alert, the, ix, 29; x, 133, 399.
- Alessandria, illustration, i, 418.
- Alexander I., of Bulgaria, sketch, iv, 26; viii, 74; x, 105 *et seq.*, 719, 727 *et seq.*, 752, 754; dethronement and abdication of, xi, 102.
- Alexander II., of Russia, sketches, ii, 13; vi, 10; assassination, vi, 795; trial of assassins, vi, 796.
- Alexander III., of Russia, accession, vi, 798; port., v, 661; coronation, vii, 704, 706.
- Alexander VI., Pope, x, 140.
- Alexander, Andrew J., obit., xii, 568.
- Alexander, B. S., obit., iii, 631.
- Alexander, E. B., sketch, vi, 9; xiii, 621.
- Alexander, Grand Duke of Russia, obit., ii, 591.
- Alexander, H., Jr., obit., iii, 631.
- Alexander Karagevitch, obit., x, 656.
- Alexander of Battenberg, obit., xviii, 576.
- Alexander, Prince of Orange, obit., ix, 614.
- Alexander, W. L., obit., ix, 614.
- Alexandre, F., sketch, xiv, 616.
- Alexandria, Anglo-French squadron at, vii, 242; riots in, 244; bombardment of, 244; x, 310; British fleet at, vii, 568; indemnity commission, viii, 297; trials on charge of burning, 298.
- Alexandria, Va., xviii, 151.
- Alexandrine, Grand Duchess, obit., xvii, 584.
- Alexeyeff, M., ix, 121.
- Alfalfa, cultivation of, xi, 631.
- Alfaro, Gen. Eloy, ix, 281.
- Alfonso XII., attempt to assassinate, v, 673; insult to, in France, viii, 397; x, 141; portrait, viii, 735; obit., x, 656.
- Algae, ix, 94.
- Algeria, i, 9, 19; map, i, 19; view of Algiers, 20; French Government in, ii, 14; shots of, iii, 725; revolt, iv, 27; government, v, 285; incursions from Tunis, vi, 311; expropriation of lands, viii, 358; ix, 336; x, 381; xii, 298; xiii, 353; xiv, 343; xv, 333; xvi, 313; xvii, 289; xviii, 328.
- Algol system, xviii, 44.
- Algoma, ix, 266.
- Ali bin Said, obit., xviii, 576.
- Alice, Grand Duchess of Hesse-Darmstadt, sketch, iii, 11.
- Ali-el-Din Pasha, x, 318.
- Alikhanoff, Lieut.-Col., x, 5, 7, 8, 9; sketch, 19.
- Alima River, discovery of, iv, 401.

- Alimentary canal, viii, 750.  
 Alimonda, G., obit., xvi, 663.  
 Alison, Sir A., in Egypt, and portrait, vii, 251.  
 Alkali Desert, the, iv, 340.  
 Alkali metals, processes for reduction of, xi, 536.  
 Alkalimetry, indicators for, x, 154.  
 Alkaline springs, x, 595.  
 Alkaloid, volatile, iv, 137; vegetable, v, 89; of pituric, vi, 98; a new, xi, 140.  
 Allain-Targé, x, 376.  
 Allaire, James, xii, 716.  
 Allard, Gen. N., obit., ii, 591.  
 Allecock, Thomas, obit., xvi, 603.  
 Allegheny, xi, 159.  
 Allen, A. H., experiments, vi, 94; x, 161.  
 Allen, G. A., obit., iii, 631.  
 Allen, Horatio, sketch, xiv, 616.  
 Allen, J. B., nominated, xiii, 838.  
 Allen, J. H., obit., xv, 631.  
 Allen, Lewis, ix, 146.  
 Allen, Lieut. H. J., x, 399.  
 Allen, Nathan, sketch, xiv, 616.  
 Allen, Robert, obit., xi, 662.  
 Allen, W. A., obit., vii, 635.  
 Allen, William H. H., obit., xviii, 538.  
 Allen, William, sketch, iv, 27; jurist, obit., xvi, 603.  
 Allen, William, philanthropist, obit., xvi, 603.  
 Allen, William F., obit., iii, 631.  
 Allen, W. Fernley, obit., ii, 592.  
 Allentown, xii, 118.  
 Allezit Voran, Prince, x, 332.  
 Alliance, Churchman's, xiv, 13.  
 Alliance electrical machine, iii, 275.  
 Alliance expedition, vi, 323, 324.  
 Allibone, S. Austin, obit. and portrait, xiv, 616.  
 Alligator, illustration, i, 296.  
 Allingham, W., sketch, xiv, 654.  
 Allon, Henry, obit., xvii, 534.  
 Alloys, determination of, iv, 502; new, viii, 524; xii, 483; xiii, 527; xiv, 543; xv, 530; xvi, 511; xvii, 444; xviii, 485. See also under Metallurgy.  
 Alluard, invention by, iii, 545.  
 Ahnaden mining company case, ix, 626.  
 Alma-Tadema, x, 359, 364; xi, 345; xii, 276, 277.  
 Almshouse, Tewksbury, viii, 517.  
 Almucantar, the, x, 45; xii, 35.  
 Alpaneca, battle at, x, 467.  
 Alpena, Mich., xvi, 146.  
 Alpine Mountain Club, the, ix, 538.  
 Alps, Tunnels, vii, 11; map, 12.  
 Alsace-Lorraine, map, i, 345; powers of Parliament, ii, 349; final regulation of government, iv, 438; incident, v, 208; government of, vii, 359; language question, viii, 397; ix, 340, 359; x, 380.  
 Alsina, Adolfo, sketch, i, 21.  
 Altar Mountain, ix, 542.  
 Altar, Roman, xvi, 16.  
 Altitudes, vi, 332.  
 Altoona, Pa., xvii, 101.  
 Aluminum, wear of, ii, 500; atomic weight, vi, 93; production, vii, 531; manufacture, viii, 524; ix, 123, 476; boride of, xi, 140; reduction of, xi, 535; xii, 482; alloys, 481; plating and welding, 483; bronze, 483; steel, 483; red color of, 109; xiii, 524; xiv, 540; xv, 528; xvi, 509; xvii, 442; xviii, 482.  
 Alveloz, x, 298.  
 Alvensleben, Gen., obit., ii, 592.  
 Alvord, H. E., xi, 47.  
 Alzog, J. B., obit., iii, 649.  
 Amadeo, sketch and portrait, xv, 6.  
 Amalic, ex-Queen, obit., ii, 592.  
 Amaria, Michele, sketch, xiv, 654.  
 Amaryllis, the, catamaran, ix, 116.  
 Amat di San Filippo e Surso, Cardinal, sketch, iii, 11.  
 Amat, Thaddeus, obit., iii, 631.  
 Amatongaland, xii, 93.  
 Amaxebees, tribe of the, x, 136.  
 Amazon, survey of the, iii, 365, 589; explorations near, iii, 365.  
 Amazons, raids of, xvii, 221.  
 Amber, in Canada, xviii, 267.  
 Amberly, Viscount, obit., i, 627.  
 Ambros, A. W., sketch, i, 21.  
 Ambukol, Africa, capture of, ix, 299.  
 Amenemhe, King, ix, 19, 21.  
 Am Ende, Max, x, 329.  
 Amenhotep III, x, 32.  
 Amenophis, x, 32.  
 America, i, 22; ii, 15; iii, 12; iv, 28; v, 15. See under names of the various countries.  
 America, the yacht, x, 788.  
 American Board, x, 194.  
 American Conference, International, xiv, 440.  
 American country-seats, architecture of, xii, 361; illustrations, 362, 363, 364, 366, 367, 369, 370.  
 American Literature. See Literature.  
 American Party, organized in Pennsylvania, xii, 659.  
 American protectorate, in Hawaii, xviii, 380.  
 American Water-Color Society exhibitions, etc. See under Fine Arts.  
 Americanists, Congress of, xiv, 18.  
 Americans expelled from Germany, x, 419.  
 Amerman, John, Jr., obit., i, 611.  
 Ames, Adelbert, i, 561.  
 Ames, E. R., sketch, iv, 29.  
 Ames, Frederick L., obit., xviii, 538.  
 Ames, J., Jr., obit., iii, 631.  
 Ames, Oliver, obit., ii, 574.  
 Amiel, Prof., ix, 90.  
 Amidon, experiments, viii, 99.  
 Aminof, explorations by, iii, 359.  
 Aminulla Khan, x, 7.  
 Ammonia, in saliva, vi, 100; in potable waters, vii, 91.  
 Amnesty, bill in Congress, i, 182-193; to Cubans, ii, 700; for press offenses, iii, 343, 344; in France, iv, 359; v, 284; return of exiles, v, 285.  
 Amos, Sheldon, obit., xi, 708.  
 Amphiarus, temple of, xi, 34.  
 Amphill, O. R., obit., ix, 614.  
 Amr-el-Makasef, revolt, viii, 299.  
 Amsden, C. H., nominated, xiii, 594.  
 Amsterdam fair, viii, 824; riots in, xi, 607. Exhibition. See Fine Arts.  
 Amsterdam, N. Y., xii, 119.  
 Amu-darja river, the, xii, 307.  
 Amusements, General Assembly on, v, 630.  
 Amylene, xii, 678.  
 Anaconda, illustration, i, 78.  
 Anæsthetic, a new local, ix, 271.  
 Anæsthetics, xiii, 752.  
 Analytic chemistry, viii, 117.  
 Anam, ix, 337; x, 24; map, i, 109; royal treasures in, x, 30; military campaign in, x, 24, 30; massacre of Christians in, x, 31; new king, x, 31; protectorate over, xi, 378; xii, 298. See Tonquin.  
 Anarchists, x, 418; xi, 12; executions of, in Austria, ix, 67; French, ix, 344; x, 379; Niederwald, plot of, ix, 358; expelled from Switzerland, 754; x, 746; trials in Austria, xii, 52; in Illinois, xii, 377; act to punish, xii, 374; xvii, 287; in Belgium, xvii, 61; trial of, xiv, 77; in France, xviii, 328; pardoned in Illinois, xviii, 398.  
 Ancient history, earliest date established in, ix, 18.  
 Andaman Islands, xvi, 344; xvii, 327.  
 Anderledy, A., obit., xvii, 384.  
 Anderson, A. A., explorer, iv, 404.  
 Anderson, Ind., xv, 118.  
 Anderson, John A., obit., xvii, 531.  
 Anderson, Joseph R., obit., xvii, 532.  
 Anderson, Larz, obit., iii, 631.  
 Anderson, Louise, obit., ii, 574.  
 Anderson, Luther W., obit., xii, 568.  
 Anderson, M. B., obit. and port., xv, 631.  
 Anderson, R. H., obit., iv, 692.  
 Anderson, Sir John, obit., xi, 703.  
 Andersonville prison, i, 164-192.  
 Andes, the, explorations in, vi, 339; ix, 540-543; new pass over, viii, 123, 384.  
 Andkhol, x, 2, 8.  
 Andlaw, Comte d', xii, 294.  
 Andlaw, F. X. von, obit., i, 627.  
 Andorra, ix, 345.  
 Andouin, Victor, ix, 273; x, 304.  
 Andover Cases, the, xi, 206; xii, 146.  
 Andrae, C. C., obit., xviii, 576.  
 Andral, Gabriel, sketch, i, 22; investigations by, vii, 60.  
 Andrassy, Count, policy of, i, 387, 388, 710, 760; ii, 55, 57, 381; iii, 43, 44; resignation of, iv, 67; and Bismarck, iv, 67; sketch and portrait, xv, 7.  
 Andrassy, Countess, obit., i, 628.  
 Andrews, A. F., nominated, xiii, 241.  
 Andrews, invention by, vi, 258.  
 Andrews, Stephen Pearl, obit., xi, 662.  
 Andromeda, new star in, x, 53.  
 Anethan, Baron, obit., xv, 672.  
 Angela, Mother, obit., xi, 790.  
 Angelin, N. P., obit., i, 628.  
 Angelis, Cardinal, obit., ii, 592.  
 Angle, James L., obit., xvi, 604.  
 Anglican Churches, statistics, convocations, and societies of, in every volume; resolution in regard to Christian unity, i, 22; iv, 35; to the Athanasian creed, 23, 26; ii, 18; iv, 31; Society of the Holy Cross, ii, 21; missions in Ceylon, ii, 24; iii, 13; communication with the P. E. Church in the United States, ii, 27; con-



- trovery concerning cemeteries, i, 25; iii, 13; new rubric, iv, 31; mistakes in history, 31; case of Rev. S. F. Green, vi, 13; vii, 14; viii, 7; marriage regulations, x, 20; free seats in churches, 23; Congress of, x, 23; church reform, xi, 20, 21; xii, 13; xiii, 12; xiv, 9; xv, 10; xvi, 8; xvii, 5; xviii, 7.
- Anglican ritualistic controversy, i, 25; ii, 21; iii, 15; iv, 32, 34; vi, 13; vii, 14; viii, 6; ix, 11; xii, 11.
- Anglo-Saxon coins, dug up in Rome, ix, 27.
- Anglo-Turkish convention, failure of, xii, 241.
- Angra Pequena, ix, 110, 362; x, 137, 395.
- Aniline salts, new, iv, 132.
- Animal chemistry, vii, 94; viii, 119.
- Animal industry bureau, ix, 185.
- Animal plants and plant animals, iv, 36.
- Animals, societies for prevention of cruelty to, iv, 601.
- Anisic acid, x, 298.
- Annam. See Anam.
- Annapolis, Md., xvii, 101.
- Ann Arbor, Mich., xvii, 102.
- Annenkoff, Gen., xiii, 7.
- Annexations, intervention in cases of, vii, 626; Hawaii, xviii, 381.
- Annibale, Cardinal Giuseppi, xvii, 584.
- Anniston, xiii, 158.
- Ansdell, R., obit., x, 657.
- Anselme, Dom, obit., xvii, 584.
- Anson, A. H. A., obit., ii, 592.
- Ansted, D. T., obit., v, 597.
- Antelopes, x, 387.
- Anthon, G. C., obit., ii, 574.
- Anthony, Allard, ii, 575.
- Anthony, H. B., obit., ix, 601.
- Anthony, James, obit., i, 611.
- Anthony, J. G., obit., ii, 575.
- Anthony, S. B., x, 725.
- Anthracene, ix, 124; x, 157.
- Anthropology, vi, 19.
- Antietam, battle of, x, 560.
- Antifebrin, xi, 289.
- Anti-ferment, an, ii, 97.
- Anti-foreign movement in China, xviii, 149.
- Antilles, Danish and Dutch, xvi, 865; xvii, 793, 794.
- Anti-Mason party, the, v, 697.
- Anti-Monopoly League, vi, 652.
- Antimony-mines in Mexico, v, 18; in Portugal, xii, 485; reduction of ore, xii, 485.
- Antinori expedition, iii, 362.
- Antiochus Theos, ix, 18.
- Antipodes island, xii, 312.
- Anti-Poverty Society, xiii, 20.
- Antipyrine, ix, 271; x, 298.
- Antisemitic movement, xvii, 316.
- Antiseptics, vii, 95, 315; viii, 116, 747; ix, 747; x, 300; xiii, 752.
- Anti-Slavery, Congress, xv, 13, 332; xvii, 168; posts at Tanganyika, xviii, 188.
- Anti-Socialist law, xiii, 370; the movement, 758.
- Antonelli, Cardinal, sketch, i, 27.
- Antonelli, Count, explorations, viii, 386; xii, 304.
- Antoninus of Piacenza, x, 37.
- Antonucchi, A. B., obit., iv, 697.
- Antwerp, harbor improvement, iv, 345; vii, 280; exposition, x, 91, 366.
- Anzengruber, L., sketch, xiv, 654.
- Apaches, the. See Indians.
- Apatite, xiv, 15.
- Apex section, xiii, 556.
- Apfaltern, Iwan, obit., i, 628.
- Apolloni, Achilles, obit., xviii, 576.
- Apollonicon, musical instrument, history and description of, x, 614.
- Appalachian Mountain Club, the, ix, 538.
- Apparatus, chemical, xiii, 148.
- Appleton, D. S., obit., xv, 632.
- Appleton, George S., sketch, iii, 16.
- Appleton, John A., sketch, vi, 20.
- Appleton, John A., obit., xvi, 604.
- Appleton, T. G., obit., ix, 601.
- Appleton, Wis., xvii, 103.
- Appomattox, surrender at, x, 430.
- Apponyi, R., Count, obit., i, 628.
- Apportionment of Representatives, bill in Congress, vi, 184; vii, 142; in New York, iv, 671; xvi, 220. See also Re-districting.
- Appropriations, congressional, xiv, 231.
- Apuzzo, F., obit., v, 597.
- Aqua, King, x, 121.
- Aquatic life, physiology of, ix, 661.
- Aqueduct of Samos, xi, 34; at Venice, x, 332; new Croton, ix, 314; x, 332; xii, 555; illustrations, 556, 557, 559, 560; Washington, ix, 316.
- Aquilonda, Lake, v, 295.
- Aquinas, Leo XIII on, iv, 773.
- Arab revolt, xiv, 830; xvii, 170.
- Arabi Ahmed Pasha (Arabi Bey), vi, 236; vii, 241; sketch and portrait, vii, 21.
- Arabia, insurrections in, xvi, 828; xvii, 743.
- Arabia, rebellion in, ix, 764; pacification of, xviii, 726.
- Arabic Lexicon. See Lane, i, 442.
- Arago, Etienne, obit., xvii, 584.
- Arana, M. S., x, 100.
- Araucania, vii, 99.
- Arbitration, international, xiii, 234; between Costa Rica and Nicaragua, 613.
- Arbitration, obligation of merchants to abide by, after agreement, vi, 21; of United States on disputed boundaries, vi, 777, 778; of claims between United States and Mexico, viii, 469; boards of, in France, ix, 344.
- Arbor-day, xii, 765; xiii, 509.
- Arbuthnot, W., obit., i, 628.
- Arch, memorial, xvi, 593.
- Archæology, i, 28; vi, 21; ix, 14; x, 32; xi, 22; xii, 14; excavations and discoveries in Greece, i, 28; vi, 23; ix, 23, 24; x, 36; xi, 32; xii, 21; illustration, xi, 33; in Cyprus, i, 31; xii, 17; in Egypt, vi, 22; ix, 19; x, 32; xi, 27; xii, 18; illustrations, x, 32, 34; xi, 28, 30; xii, 20; in Assyria and Babylonia, vi, 22; ix, 18; xi, 25; xii, 16; in America, ix, 14, 16; x, 32, 34; xi, 22, 23; xii, 14; illustrations, ix, 17, 18; in Rome, ix, 26; xi, 34; xii, 23; in Palestine and Syria, ix, 27; x, 37; xi, 27; xii, 24; on the site of Troy, ix, 24; at Assos, ix, 25; in England, ix, 22; xi, 35; in Ca-
- rinthia, ix, 23; in Afghanistan, x, 38; xi, 35; in Persia, xi, 26; in Spain and France, xii, 23; on Easter Island, ix, 275; xiii, 21; xiv, 17; xvi, 12; xvii, 11.
- Archbishop, powers of, xiii, 14.
- Areher, Frederick James, obit., xi, 708.
- Archibald, Sir A. G., obit., xvii, 584.
- Archibald, Sir T. D., obit., i, 628.
- Architecture, Egyptian specimens of, x, 32.
- Arc-lamps, ix, 304.
- Arconati-Visconti, obit., i, 628.
- Areco-Valley, Count, obit., xvi, 663.
- Arctic discovery, xiv, 355.
- Arctic exploration, maps of Arctic North America, i, 325, and ix, 29; islands discovered, iii, 354; vii, 331, 334; circumpolar stations, viii, 382; Greely Expedition, viii, 420; ix, 33; Greely relief, 38; investigation, 38; ix, 348; x, 398; farthest north, ix, 31. And see Geographical Progress.
- Ardmillan, Lord, obit., i, 628.
- Area of United States, vi, 850.
- Arekaine, xi, 290.
- Aretina, Guido, ix, 549.
- Artak Mountains, iv, 408.
- Argentine, Kan., xvii, 104.
- Argentine Republic, government, statistics, etc., in every volume; maps, i, 37; vi, 26; American products in, viii, 14; gauchos, illustration, iii, 21; treaty of limits with Chili, vi, 25; new steamers, xi, 27; coal and oil in, xii, 28; financial depression, i, 35; ii, 30; iii, 18, 19; v, 20; internal improvements, i, 36; iii, 20; immigration to, iii, 18, 22; iv, 22; ix, 38; xi, 28; view of Buenos Ayres, ii, 31; of bank of, vii, 25; revolts in, iii, 17; Patagonian question, iv, 38; x, 41; financial crisis, x, 39; small trade with United States, x, 40; education, 41; explorations in, xi, 39; drainage of swamp lands, 37; international exhibition in, x, 41; xiii, 34; xiv, 39; xv, 16; xvi, 23; xvii, 9; xviii, 15; boundary, 16.
- Argles, Marsham, obit., xvii, 584.
- Argyll, Duke of, sketch, v, 23.
- Argyrodite, xi, 139, 140.
- Aristotle's treatise, *fac simile* of, xvi, 21.
- Arizona, government, statistics, etc., i, 38; viii, 16; ix, 40; xi, 40; x, 42; xi, 39; Indian question in, viii, 17; Indian relics in, ix, 17; uncertainty of land-grants in, ix, 41; Mormons in, ix, 41; x, 43; railroad surveys in, ix, 41; Indian hostilities in, xi, 40; xii, 28; lumber in, 29; xiii, 37; xiv, 31; xv, 20; xvi, 26; xvii, 16; xviii, 19.
- Ark of Noah, inclosure called, ix, 28.
- Arkansas, government, statistics, etc., in every volume; pronunciation of the name, v, 24; State debt, i, 4; iii, 24; iv, 41; vi, 32; view of capitol, ii, 37; Hot Springs case, iii, 24; iv, 45; v, 25; conflict between Federal and State courts, iii, 25; Indian af-

- fairs, iii, 28; iv, 48; bribery investigation, iv, 38; Teller committee investigation, iv, 40; homestead acts, iv, 44; claim against United States Government, v, 25; education in, vi, 31; intimidation in, vi, 31; railroad aid bonds, vii, 28; viii, 19; agricultural wheel, xi, 42; bonds repudiated, ix, 42; Woodruff defalcation, xvii, 18.  
 Arkansas City, Kan., xvi, 147.  
 Arkansas River, xvii, 18.  
 Arlberg Tunnel, viii, 310; x, 381.  
 Armenia, misgovernment of, v, 337; scheme for government, v, 689; question of, vii, 803; viii, 773; map, iii, 789; x, 720; agitation, xiii, 769; political trials, xviii, 726.  
 Armenian Churches, the, viii, 153; ix, 280.  
 Armies, discipline bill in Great Britain, iv, 452; reorganization in Denmark, iv, 313; new laws in France, ii, 301; v, 278; strength of, in France, iii, 348; bill in Germany, v, 317; new law in Netherlands, vi, 627; the Persian, vi, 733; Spanish, vii, 750; the Swiss, vi, 829. See Rifles, Military.  
 Arminite, xi, 139.  
 Arminius, statue of. See Bandel, i, 61.  
 Armitage, Edward, x, 364; xii, 277.  
 Armitage, Sir E., obit., i, 628.  
 Arms, William, sketch, xiv, 617.  
 Armstrong, D. H., obit., xviii, 538.  
 Armstrong, H. B., obit., ix, 601.  
 Armstrong, Henry B., x, 148.  
 Armstrong, Henry E., x, 46.  
 Armstrong, John J., obit., xi, 663.  
 Armstrong, S. C., obit., xviii, 538.  
 Armstrong gun, the, vii, 581.  
 Army, United States, i, 41; ii, 33; iii, 28; iv, 46; v, 26; vi, 35; vii, 31; appropriations, iii, 136, 196-213, 802; iv, 226, 234, 251-274; veto, 265, 272; v, 167-172; use of, as a *posse comitatus*, iii, 30, 196-213; retirement of officers, vii, 149; grades of office in the, xii, 205.  
 Arnason, John, sketch, xiii, 659.  
 Arnaud, F., obit., iii, 649.  
 Arndt, H., obit., i, 628.  
 Arndts von Arnesberg, K. L., obit., iii, 649.  
 Arnim, Count Harry von, trial of, i, 348; sketch, vi, 36.  
 Arnold, Aaron, obit., i, 612.  
 Arnold, experiments by, x, 156.  
 Arnold, I. N., obit., ix, 602.  
 Arnold, Matthew, sketch and portrait, xiii, 41.  
 Arnold, T. J., obit., ii, 592.  
 Arnot, John, Jr., obit., 663.  
 Arousohn, experiments by, x, 690, 691.  
 Aroostook region, xviii, 472.  
 Arrivabene, Count, obit., vi, 690.  
 Arrol, Messrs., work by, x, 328.  
 Arrom, Cecilia de. See Caballero, i, 82.  
 Arrow-poison, x, 299.  
 Arsenic, solvent for, i, 98; tests for, i, 100; vi, 95; in the body, i, 101; v, 92; viii, 119; separation from antimony, iii, 90; from copper, viii, 113; as coloring-matter, iv, 2, 4; in wall-paper, vi, 99; poisoning by, v, 91; vi, 751; poisoning from bismuth, vii, 90; xiii, 144.  
 Art exhibitions and sales. See Fine Arts.  
 Artesian wells, ii, 280; deepest in the world, ii, 281; in Georgia, vii, 348; patents, viii, 446; xii, 259; cap for, illustration, 259; xiv, 248, 456; xvii, 255, 763.  
 Arthur, C. A., sketch and portrait, vi, 36; inaugural and proclamation, vi, 847; messages, see Congress and Public Documents; obit., xi, 42.  
 Arthur, T. S., obit., x, 645.  
 Arthur Kill Bridge, xiii, 293.  
 Arthur Land, ix, 31, 35.  
 Arts, chemistry of the, xiii, 143.  
 Arxane, King, proclaimed, ii, 53; v, 40.  
 Ascension Island, x, 139.  
 Ascherson, explorations, i, 331.  
 Ash, Abraham J., obit., xii, 568.  
 Ashantee, war declared by, vi, 4.  
 Ashburner, C. A., sketch, xiv, 617.  
 Ashburner, W., obit., xii, 568.  
 Ashcroft, E. H., obit., xviii, 538.  
 Ashcroft, J. H., explorations, v, 290.  
 Ashe, Thomas S., obit., xii, 569.  
 Ashland, Wis., xv, 118.  
 Ashtabula disaster, report, ii, 617.  
 Asia, general review of events, in first five volumes; Central, explorations in, i, 323; ii, 325; iii, 359, 360; iv, 399; v, 289; vii, 335; ix, 348; x, 395; xi, 306; xii, 376; surveys in, xii, 309; new route to, viii, 385; routes to Central, and trade with, viii, 707; Russia in, see Russian Advances in Asia. See also under the names of the various countries; Central, railway in, xiii, 7.  
 Asia Minor, reforms proposed for, v, 689; famine in, xii, 774.  
 Asiminine, xi, 290.  
 Asmara, captured, xiv, 2.  
 Aspinwall, xi, 44.  
 Aspinwall, Lloyd, obit., xi, 663.  
 Aspinwall, T., obit., i, 612.  
 Assab, taken by Italy, v, 9.  
 Assassinations, political, and attempts at, in Abyssinia, v, 69; in Austria, vii, 54; in Colombia, iv, 149; in England, vii, 369; in Germany, iii, 381; in India, iv, 494; in Ireland, vii, 368; viii, 414; in Italy, iii, 458; in Japan, iii, 462; in Peru, iii, 687; in Russia, iii, 744, 745; iv, 682-684, 776; v, 662, 663, 665; vi, 12, 796, 799; in Spain, iii, 774; iv, 822; v, 673; in Turkey, v, 690; in United States, iii, 501, 502; in Kashgaria, i, 41.  
 Assing, L., obit., v, 597.  
 Assiniboia, Territory of, viii, 81; ix, 270.  
 Associations for the Advancement of Science, ix, 44; x, 44; xi, 46; xii, 31; xiii, 42; xiv, 36; xv, 24; xvi, 33; xvii, 20; xviii, 24.  
 Assolant, Alfred, obit., xi, 708.  
 Assos, excavations at, ix, 25.  
 Assur-nasir-pal, King of Assyria, ix, 18.  
 Assyrian and Babylonian Researches, recent, vii, 262; ix, 18; documents, xii, 17. See Archaeology.  
 Asteroids, whole number of, ix, 51; discovered, see Planets, Minor, under Astronomical Progress, in every volume.  
 Asthma, new drug for, ix, 272; x, 299.  
 Astor, Charlotte A., obit., xii, 569.  
 Astor, J. J., obit., xv, 632.  
 Astor, William, obit., xvii, 532.  
 Astoria, Ore., xvi, 147.  
 Astringents, strength of, i, 95.  
 Astronomical cipher code, x, 55.  
 Astronomical Journals, vii, 41.  
 Astronomical Phenomena and Progress, in every volume.  
 Astronomical Prizes. See under Astronomy.  
 Astronomy, progress of, in 1892, xvii, 34.  
 Astronomy, system of communicating discoveries in, ix, 55.  
 Astrophotographic Congress, xii, 37.  
 Asylum, right of, in Switzerland, vi, 829; in Spain, vii, 751.  
 Atcheen, revolt in. See Acheen.  
 Atchinoff, N., at Sagallo, xiv, 23.  
 Atchison, David R., obit., xi, 664.  
 Atchison, Kan., xv, 118.  
 Athabasca, Territory of, viii, 81.  
 Atheists, admission of, to Parliament, v, 334. See also Oaths.  
 Athens, map of, and ports, i, 367; plan and view of the Acropolis, 370; ancient, i, 368; excavations, x, 36; xiv, 20.  
 Atkinson, E., suggestion of, for cotton exhibition, vi, 260.  
 Atkinson, Sir H. A., obit., xvii, 534.  
 Atlanta, Ga., xi, 159; exposition at (see Exposition), vi, 260; to be State capital, iii, 370; capture of, x, 428; State House, xiv, 365, 366; recent growth of, xviii, 339.  
 Atlantic City, xii, 119.  
 Atlantic, hydrography of the, xiii, 58.  
 Atlas dynamite, x, 343.  
 Atlas Mountains, the, vi, 327.  
 Atomic Theory, vi, 40; address on the growth of, vi, 91; ix, 118, 119.  
 Atomic Weights, v, 86; vi, 92; vii, 89; viii, 117; ix, 126; x, 154; xii, 100, 110, 145; xiii, 146; xiv, 131; xv, 105; xvi, 115; xvii, 83; xviii, 137.  
 Attorney-General of Indiana, investigation as to fees of, iv, 499.  
 Atwater, L. H., obit., viii, 536.  
 Atwater, W. O., investigations by, vi, 671; x, 695, 696.  
 Atwood, David, sketch, xiv, 617.  
 Aube, Admiral, obit., xvi, 663.  
 Aube, H. L. T., obit., xv, 672.  
 Aubin, experiments by, viii, 120.  
 Auburn, xi, 159.  
 Auchieta, residence of, in Central Africa, iv, 405.  
 Auchmuty, R. T., obit., xviii, 538.  
 Auckland, New Zealand, illustration, ii, 49.  
 Audebert, explorations, viii, 387.  
 Audenried, J. C., obit., v, 538.  
 Audience question in China, xviii, 150.



- Audiphone, the, iv, 54.  
 Audouard, O., obit., xv, 672.  
 Auerbach, B., obit., vii, 644.  
 Auersperg, Count, sketch, i, 51, 59.  
 Auersperg, Prince, obit., xv, 672.  
 Augier, Emile, sketch, xiv, 655.  
 Augsburg, illustration, i, 346.  
 August, Prince, x, 687.  
 Augusta, Empress, obit., xv, 673.  
 Augu-ta, Ga., xi, 160; xviii, 340.  
 Aurelle de Paladines, Gen., obit., ii, 592.  
 Auriga, new star in, xviii, 44.  
 Aurists, new drug used by, ix, 271.  
 Aurora Borealis, vii, 34; viii, 28; an artificial, viii, 383.  
 Aurora Ring, the, 382.  
 Ausschütz, experiments by, x, 157.  
 Austin, Texas, new Capitol at, vii, 794; xv, 119; dam at, xviii, 715.  
 Australasia, explorations in, i, 329; xiii, 51; xv, 45; xvi, 57; xvii, 41.  
 Australasian Colonies, movement to consolidate, i, 53; vi, 43; viii, 30; ix, 56; x, 57; xi, 59; xviii, 51; postal union, ix, 56; defenses, *ibid.*; annexation schemes, viii, 31; x, 59; silver discoveries, ix, 59; Federal Council, x, 57; importation of convicts, ix, 57, 58, 342; xii, 46. See also Australia and Polynesia.  
 Australia, scheme of federation, see Australasian Colonies; gold mining, i, 53; animals of, illustrations, i, 54; ii, 51, 52; bottle-tree, illustration, i, 53; view of Melbourne post-office, iv, 57; of parliament buildings at Sydney, iv, 58; libraries in, ii, 50; prize offered for discovery of coal, ii, 51; Chinese immigration, ii, 51; ministerial changes, ii, 50, 52; iii, 41; exhibition at Sydney, ii, 52; iii, 55; v, 40; at Melbourne, iv, 56; v, 39; constitutional crisis in Victoria, vi, 45; sugar culture in Queensland, vii, 44; land act and mining-laws, ix, 58, 59; drought in, 59; silver ore, 476; annexation of Papua, 639; transportation of French convicts to Papua, 57, 58, 342; defenses, x, 60; xi, 59; xii, 45; contingent in Soudan, x, 60; Russian warfare, x, 61; American postal route, x, 61; railroads in, x, 327; Kimberley gold-fields, xi, 65; bill to prevent importation of convicts, xii, 46; volcanic eruption, xi, 66; xiii, 60; explorations in, xiv, 355; xvii, 303.  
 Australia and Polynesia, statistics, government, etc., in every volume; atrocities in Feejee, i, 53; a Feejean, illustration, ii, 53; view of Auckland, illustration, ii, 49; death of queens, i, 53; ii, 53; Tonga Islands, ii, 53; Samoa or Navigators' Islands, see Samoa; difficulty with Maoris in New Zealand, iv, 57; vi, 47; vii, 45; viii, 37; ix, 60; x, 66; xi, 66; missions and schools, iv, 58, 59; French annexation, v, 40; xi, 60; British, v, 47; xi, 60; German, x, 59; massacre by Christian natives, vi, 47; land system of New Zealand, vii, 46; labor-traffic in the Southern Pacific, x, 62; Germans in South Sea, xi, 60; colonial exhibition, xi, 60; massacre off the coast of New Guinea, xii, 48; annexation schemes, viii, 31; x, 58.  
 Australian system of election, xii, 246.  
 Austria-Hungary, xiii, 67; xiv, 7; xv, 49; xvi, 64; xvii, 46.  
 Austrian Electoral System, vii, 46.  
 Austrian influence, Gladstone on, v, 334.  
 Austro-Hungarian Monarchy, government, statistics, etc., in every volume; Ausgleich between Austria and Hungary, ii, 55, 56, 57; iii, 42; xii, 51; Galicia, ii, 59; the Poles, ii, 59; treaty of San Stefano, iii, 45; of Berlin, iv, 62; important conference, iv, 64; resignation of Count Andrassy and succession of Baron Haymerle, iv, 65; religious toleration, iv, 67; denominational schools, v, 44; conflict of nationalities, v, 44, 45; x, 72; xi, 73; Taafé ministry, ix, 66; reconciliation with Russia, 63; labor troubles, x, 72; xi, 73; change of Cabinet, xi, 72; fires and floods, i, 59; xi, 73; xii, 53; illustrations, i, 55, 58, 59; ii, 56, 57, 58; iii, 43. See Eastern Question.  
 Automatic screw-driver, xvi, 708.  
 Autophone, x, 617.  
 Autran, Joseph, obit., ii, 592.  
 Auzoux, T. L. J., obit., v, 598.  
 Avalanches in Switzerland, vi, 830; in Italy, ix, 416.  
 Avenger, the, ix, 377.  
 Averill, John T., sketch, xiv, 617.  
 Avery, D. D., obit., iv, 692.  
 Avery, Geo. W., obit., xviii, 539.  
 Aversboro, battle of, x, 429.  
 Avesta process, the, x, 580.  
 Awdry, Sir J. W., obit., iii, 649.  
 Axtell, Samuel B., obit., xvi, 604.  
 Axum, relics at, illustrations, ii, 2.  
 Ayer, J. C., obit., iii, 631.  
 Ayers, William Orville, obit., xii, 569.  
 Aylesford, Earl of, obit., x, 657.  
 Aymaras and tomb, illustration, ii, 71.  
 Ayooob Khan, v, 4; vi, 2; defeat and flight, vi, 4.  
 Ayr, bridge of, illustration, i, 356.  
 Ayres, Daniel, obit., xvii, 532.  
 Ayres, R. B., sketch, xiii, 621.  
 Ayrton, electric railway, viii, 678.  
 Azotine, x, 343.  
 Aztec Calendar Stone, the, viii, 536; illustration, ix, 18.  
 Aztecs, relics of the, ix, 17, 18.  
 Babbitt, B. T., sketch, xiv, 617.  
 Babbitt, Elijah, obit., xii, 570.  
 Babcock, G. R., obit., i, 612.  
 Babinet, invention by, v, 51.  
 Babylon, inscriptions of ancient, ix, 18; Wolfe expedition, ix, 19; xi, 25.  
 Babylonia, expedition to, xvii, 14.  
 Babylonian documents, xiii, 30; exploration, xiii, 33.  
 Baecarini, A., obit., xv, 673.  
 Bache, A. D., port., xv, 573.  
 Bache, H. W., obit., iii, 632.  
 Bacilli. See Micro-Organisms.  
 Back, Sir G., sketch, iii, 46.  
 Backus, William Woodbridge, obit., xvii, 532.  
 Bac Le, engagement at, ix, 138; x, 25.  
 Bacnink, capture of, ix, 137.  
 Bacon, George, obit., i, 612.  
 Bacon, John W., sketch, xiii, 621.  
 Bacon, Leonard, sketch, vi, 51.  
 Bacteria, vi, 669; ix, 93, 129, 496; x, 798, 800; xii, 679; relations of, with various gases, vi, 98. See also Germ Theory, Tuberculosis, and Micro-Organisms.  
 Bacteriology, xiii, 752; xviii, 139.  
 Badakshan, state of, x, 2; xi, 5.  
 Baden, Prince Ludwig Wilhelm, sketch, xiii, 659.  
 Baden-Baden, illustration, i, 347.  
 Badger, George, obit., ii, 575.  
 Badges, grand army, illustrations, xii, 329.  
 Badghis, district of, x, 4, 6.  
 Baer, K. E. von, sketch, i, 60, 322.  
 Baffin Land, researches in, x, 398.  
 Bagally, Sir R., sketch, xiii, 660.  
 Bagehot, Walter, obit., ii, 592.  
 Bagataway, game of, x, 518.  
 Bagley, G. R., obit., i, 612.  
 Bagley, James, obit., i, 612.  
 Bagley, J. J., sketch, vi, 52.  
 Bagration-Mouchransky, Prince, obit., i, 628.  
 Bags, paper, xi, 734.  
 Bahadoor, Sir J., obit., ii, 592.  
 Bahama Islands, xiii, 839; xv, 407; xvi, 863; xvii, 793.  
 Bahamas. See West Indies.  
 Bahrain Islands, xv, 404; xvii, 325.  
 Bahtiares, revolt of, vii, 681.  
 Bailey, G. A., obit., i, 575.  
 Bailey, Theodoros, sketch, i, 59.  
 Bailly, A. N., obit., xvii, 585.  
 Bain, Alexander, invention by, x, 615; obit., ii, 592.  
 Baines, Sir E., obit., xv, 673.  
 Baird, Matthew, obit., ii, 575.  
 Baird, Spencer F., sketch and portrait, xii, 54.  
 Baireuth, Bavaria, illustration, i, 573.  
 Baiter, J. G., obit., ii, 593.  
 Baker, Alfred, sketch, xiv, 617.  
 Baker, B., x, 47.  
 Baker, Rev. G., obit., ii, 575.  
 Baker, G. M., obit., xv, 632.  
 Baker, Sir H. W., obit., ii, 593.  
 Baker, N. B., obit., i, 612.  
 Baker, Peter C., sketch, xiv, 617.  
 Baker, Sir Samuel, x, 309.  
 Baker, Thomas, obit., i, 628.  
 Baker Pasha, Valentine, viii, 295-302; ix, 292; destruction of his army, ix, 293; obit., xii, 621.  
 Baker, William Bliss, prize to, x, 361; obit., xi, 664.  
 Baker, W. E., sketch, xiii, 621.  
 Baker, William M., obit., viii, 586.  
 Bakeries, ix, 2.  
 Baking-powders, alum in, iii, 85; xiv, 132.  
 Bakunin, Michael, sketch, i, 60.  
 Balance of power, xiii, 72.  
 Bala Murghab, x, 4, 5, 8.  
 Balard, A. J., sketch, i, 61.  
 Balch, Thomas, obit., ii, 575.  
 Baldasseroni, G., sketch, i, 61.  
 Baldissera, Gen., xiii, 3.  
 Bald-knobbers, xii, 516; xiii, 565; xiv, 567.  
 Baldwin, C. H., sketch, xiii, 622.  
 Baldwin, Henry P., obit., xvii, 532.

- Baldwin, Jesse G., obit., xii, 570.  
 Baldwin, John Abeel, obit., xi, 664.  
 Baldwin, Judge C., obit., i, 612.  
 Baldwin, Prof., obit., xii, 622.  
 Baldwin, Samuel, obit., xii, 570.  
 Balestier, Wolcott, obit., xvi, 604.  
 Balkan provinces, the, ix, 64; religious movement in, 279; x, 107 *et seq.*; 726, 727; Slav sentiment in, 719.  
 Ball, I. W., obit., v, 588.  
 Ball, John, sketch, xiv, 655.  
 Ball, R. S., ix, 45.  
 Ball, Thomas, xi, 347.  
 Ballance, John, obit., xviii, 576.  
 Ballantine, J., obit., ii, 593.  
 Ballantine, William, obit., xii, 622.  
 Ballay, Dr., explorations by, ii, 283, 334; iv, 401.  
 Ballet, the, xiii, 581; xiv, 579.  
 Ballooning, modern, xvi, 71.  
 Balloons, navigable, ix, 72; reconnaissance in a, x, 25; voyage in, by Burnaby, 115.  
 Ballot, law to prescribe form for, iv, 17, 18; antiquity of the, xii, 244; boxes, xii, 245; box forgery, xiv, 674; reform, xiv, 536.  
 Ballou, G. C., obit., i, 612.  
 Balmaeda, J. M., obit., xvi, 663.  
 Balmain, invention by, v, 93.  
 Balsam copaiba, illustration, i, 77.  
 Baltes, Peter Joseph, obit., xi, 66.  
 Baltic provinces, i, 71; Russification in, x, 719; xiii, 727; xiv, 753.  
 Baltimore, xi, 160; illustration, i, 505; anniversary, v, 494.  
 Banangwato, description, iv, 403.  
 Bamboo, xi, 74.  
 Bamian, statues at, xi, 35; illustration, 36.  
 Bananas, culture of, viii, 538; in Louisiana, xviii, 468.  
 Baneroff, George, sketch and portrait, xv, 57.  
 Banded Bandicot, the, illustration, i, 54.  
 Bandeiro, Dr. R., x, 298.  
 Bandel, J. E. von, sketch, i, 61.  
 Bandelier's investigations, ix, 16.  
 Bandon, Earl of, obit., ii, 593.  
 Bangor, Me., xvii, 104.  
 Bangs, G. F., obit., ii, 575.  
 Bangs, Francis N., x, 645.  
 Banian tree, the, illustration, i, 401.  
 Bank associations, national, xi, 264.  
 Bank in Toronto, illustration, xii, 131.  
 Bankruptcy bill, English, viii, 410.  
 Banks, decision on national, i, 506; laws for, in Massachusetts, i, 508; vi, 536; of Tennessee, decision on, ii, 711; failure of the City, of Glasgow, iv, 175; savings, in Rhode Island, iv, 769; fees of receivers in Connecticut, v, 195; sale and taxation of shares of national, vi, 52; United States, vi, 126; vii, 392; taxation of, in Delaware, vi, 205; in Argentine Republic, vii, 25, 26; of States, vii, 392; of Canada, viii, 84; in Colombia, viii, 139; statistics of 1883, viii, 332; circulation in United States, ix, 216; condition of national, ix, 780; taxation, x, 621; co-operative, xi, 528; national, xiii, 785; xv, 840; xvi, 851; xvii, 758; new laws in Australia, xviii, 55; State banks in Illinois, 398; scandals in Italy, 413. And see Financial Review.  
 Banks, Gen. Nathaniel P., x, 426.  
 Banvard, John, obit., xvi, 604.  
 Banville, T. F., obit., xvi, 664.  
 Baptists, statistics, associations, sects of, etc., in every volume.  
 Bara, Soudan, battle at, x, 318.  
 Baragnon, L. N., obit., xvii, 585.  
 Baraguay d'Hilliers, sketch, iii, 53.  
 Baralong territory, troubles in, ix, 115.  
 Barbadoes, riots in, i, 366; xii, 800; xiii, 839; xiv, 403; xvi, 864; xvii, 792.  
 Barbedienne, F., obit., xvii, 585.  
 Barbed-wire fence, vi, 266.  
 Barbey d'Aureville, J. A., sketch, xiv, 655.  
 Barbour, J. M., obit., vi, 678.  
 Barbour, John S., obit., xvii, 532.  
 Barbour, Oliver L., sketch, xiv, 617.  
 Barca, F., obit., viii, 597.  
 Barcelona, riots in, vii, 752; exhibition, xiii, 748.  
 Bard, S., obit., iii, 632.  
 Bardoux, Agénor, sketch, ii, 320.  
 Bardsley, Sir J. L., obit., i, 628.  
 Bardsley case, the, xvi, 716.  
 Barceiro, Don Candido, iii, 677.  
 Barff, Prof., discovery by, vii, 315; invention by, vii, 533.  
 Bargash, Ben Said, sketch, xiii, 660.  
 Barger, Father, obit., ii, 575.  
 Barge, Charles, xi, 347.  
 Barham, R. H. D., obit., xi, 709.  
 Barili, Antonio, sketch, i, 68.  
 Barillas, Gen., x, 466.  
 Barilochi Pass, Andes, viii, 385.  
 Baring, Sir Evelyn, ix, 285, 286, 289, 299; x, 495.  
 Baring, T. C., obit., xvi, 664.  
 Baringo, Lake, ix, 347.  
 Barker, Fordyce, obit., xvi, 604.  
 Barker, G. W., obit., iii, 632.  
 Barker, Prof., observations by, iii, 34.  
 Barksdale H., obit., vi, 678.  
 Barlow, S. B., obit., i, 612.  
 Barlow, S. L. M., sketch, xiv, 618.  
 Barnard, Daniel, obit., xvii, 532.  
 Barnard, D. P., sketch, xiii, 622.  
 Barnard, E. E., discoveries by, vi, 39; vii, 38; ix, 52; x, 51; xi, 57; xii, 45.  
 Barnard, Frederick A. P., sketch and portrait, xiv, 73.  
 Barnard, J. G., sketch, vii, 65.  
 Barnes, A. S., sketch, xiii, 622.  
 Barnes, Demas, sketch, xiii, 622.  
 Barnes, J. K., obit., viii, 586.  
 Barnett, J., obit., xv, 674.  
 Barnewall, R. A., obit., xii, 570.  
 Barni, J. R., obit., iii, 649.  
 Barnum, Henry A., obit., xvii, 533.  
 Barnum, Phineas T., obit., xvi, 605.  
 Barnum, W. H., sketch, xiv, 618.  
 Barometers, water-, v, 51.  
 Baron, V. A., obit., xvii, 585.  
 Baross de Bellus, Gabriel von, obit., xvii, 585.  
 Barre, Vt., xvii, 106.  
 Barrett, Com., obit., v, 588.  
 Barrett, J. W., experiments by, x, 690; xii, 674.  
 Barrett, Lawrence, obit. and portrait, xvi, 605.  
 Barrett, Rev. M., obit., i, 612.  
 Barrett, W. F., experiments by, xii, 480.  
 Barrière, P. de la, ix, 57, 342.  
 Barrière, Théodore, obit., ii, 593.  
 Barrios, J. R., iii, 415; attempt on the life of, ix, 385; union decree of, x, 464, 465; his death, 466.  
 Barron, Samuel, sketch, xiii, 622.  
 Barrot, F., obit., viii, 597.  
 Barrow, Sir G., obit., i, 628.  
 Barrow, Percy Harry Stanley, obit., xi, 709.  
 Barrundia, Martin, i, 89; arrested, xv, 414.  
 Barry, E. M., obit., v, 598.  
 Barry, G. R., obit., i, 612.  
 Barry, P., obit., xv, 632.  
 Barry, W. F., sketch, iv, 73.  
 Barrymore, Georgiana D., obit., xviii, 539.  
 Barth, Baron, death of, ii, 330.  
 Barth, J. B. P., obit., ii, 593.  
 Bartholdi's statue, x, 367, 642; xi, 323, 649.  
 Bartlett, F. W., invention by, i, 91.  
 Bartlett, Joseph J., obit., xviii, 539.  
 Bartlett, J. H., discovery, v, 288.  
 Bartlett, John Russell, obit., xi, 664.  
 Bartlett, Sidney, sketch, xiv, 618.  
 Bartlett, Washington, obit., xii, 570.  
 Bartlett, W. F., obit., i, 612.  
 Bartlett, W. H. C., obit. and portrait, xviii, 539.  
 Bartley, Mrs. Judge, obit., i, 612.  
 Bartol, James Le, obit., xii, 571.  
 Barton, Clara, vii, 718.  
 Barton, William B., obit., xvi, 606.  
 Bartow, Morey H., obit., xii, 571.  
 Bartsch, Karl F., sketch, xiii, 660.  
 Bartelot, Major, xiii, 295 *et seq.*  
 Barus, Carl, experiments of, xii, 479.  
 Bary, E. von, death of, ii, 329.  
 Base, a new, iv, 134; xi, 140.  
 Base-ball, x, 77 *et seq.*  
 Bashford, C., obit., iii, 632.  
 Basque provinces, i, 730.  
 Basques, illustration, i, 730.  
 Bass, Lyman K., sketch, xiv, 618.  
 Bassamas, tribe of the, v, 291.  
 Basset-hound, the, illustration, ix, 258.  
 Bassophone, the, x, 617.  
 Bastian, Adolf, ix, 277.  
 Bastian, H. Charleton, on the germ theory, iii, 390; on the muscular sense, xii, 672.  
 Bastide, J., obit., iv, 698.  
 Bastile celebration, v, 285; illustration, the Bastile, i, 313.  
 Basutoland, xvii, 75.  
 Basutos, the, v, 80; law to disarm, v, 81; vi, 85; revolt of, v, 81; vi, 86; vii, 84; history and separation from Cape Colony, viii, 89; ix, 111; x, 83; effect of their conflict with the Cape government, 84; spread of drunkenness among, 84.  
 Batanga river, x, 393.  
 Batbie, A. P., obit., xii, 622.  
 Bates, Eli, xii, 280.  
 Bates College, illustration, i, 500.  
 Bath, England, illustration, i, 359.  
 Bath, N. Y., xv, 120.  
 Baths among various nations, v, 354; bath-rooms, v, 362; bath-lift, xvi, 706.  
 Bathurst, Earl, obit., iii, 649.  
 Batoche, engagement at, x, 127.  
 Baton Rouge, La., xviii, 152.



- Batoum, xi, 792.  
 Battaglini, F., obit., xvii, 585.  
 Battenberg, Prince, vii, 73.  
 Battershall, J. P., obit., xvi, 607.  
 Battin, Joseph, obit., xviii, 539.  
 Battle Creek, Mich., xv, 120.  
 Battle, W. H., sketch, iv, 74.  
 Battleford, x, 127, 128.  
 Battye, Col. R., killed, xiii, 436.  
 Baudet, Paul, obit., ii, 593.  
 Baudissin, W. H. F. K., obit., iii, 649.  
 Baudot, invention by, vi, 256.  
 Baudouin, Prince, obit., xvi, 664.  
 Baudry, Paul, obit., xi, 709; exhibition of his works, xi, 344.  
 Bauer, Caroline, obit., ii, 593.  
 Bauer, Clara, sketch, i, 68.  
 Bauernfeld, E., obit., xv, 674.  
 Baumann's route, map of, xviii, 336.  
 Baumstark, A., obit., i, 628.  
 Bausch, E., ix, 506, 515, 518.  
 Bavaria, view of Baireuth, i, 573; King Ludwig of, xi, 392; Otto, 392; regent, 392.  
 Baviera, J., Cervera, xi, 374.  
 Baxendell, discoveries, v, 35, 36.  
 Baxter, J. H., obit., xv, 632.  
 Baxter, John, obit., xi, 665.  
 Baxter, S., obit., iii, 632.  
 Baxter, W. E., obit., xv, 674.  
 Bayard, Emile, x, 358, 363; obit., xvi, 664.  
 Bayard, James A., sketch, v, 52.  
 Bayard, Thomas F., sketch and portrait, x, 756.  
 Bayard mutiny, the, x, 173.  
 Bay City, Mich., xvi, 148.  
 Bayer, H. J. P. von, sketch, i, 69.  
 Bayer, Prof., discovery by, vi, 428.  
 Bayfield, Wis., xviii, 153.  
 Bayley, J. R., sketch, ii, 66.  
 Bayne, Herbert A., obit., xi, 709.  
 Baynes, Thomas S., obit., xii, 623.  
 Bayonne, illustration, i, 317.  
 Bazaine, François Achille, sketch and portrait, xiii, 80.  
 Bazalgette, Sir J., obit., xvi, 664.  
 Beach, E. J., obit., ii, 575.  
 Beach, John Sheldon, obit., xii, 571.  
 Beach, Moses Sperry, obit., xvii, 533.  
 Beach, Sir Michael Hicks, Bart., x, 447; sketch, 449; x, 440; xi, 399.  
 Beach, William A., obit., ix, 602.  
 Beach, William Morrow, obit., xii, 571.  
 Beaconsfield. See Disraeli.  
 Beale, Edward F., obit., xviii, 540.  
 Beale, Joseph, sketch, xiv, 618.  
 Beamer and Clarke, experiments by, iv, 132.  
 Bear, voyage of the, ix, 29.  
 Beard, Charles, sketch, xiii, 660.  
 Beard, George M., obit., viii, 586; ix, 554.  
 Beard, Henry, sketch, xiv, 618.  
 Beard, James H., obit., xviii, 540.  
 Beardsley, Eben E., obit., xvi, 607.  
 Beardsley, S. B., obit., xv, 632.  
 Bears, x, 387; xvi, 541.  
 Beasley, Joseph, invention, x, 575.  
 Beaton, Ruth, obit., ii, 575.  
 Beatrice Gulf, iii, 362.  
 Beatrice, Neb., xvi, 149.  
 Beatty, Henry Oscar, obit., xvii, 533.  
 Beatty, Ormond, obit., xv, 633.  
 Beaubien, J. C., obit., ii, 593.  
 Beaume, J., obit., x, 657.  
 Beaumont's air-engine, vi, 513; perforator, vii, 281; viii, 31.  
 Beaunis, experiments by, viii, 635.  
 Beauregard, A. T., obit., vi, 679.  
 Beauregard, P. G. T., x, 424; obit. and portrait, xviii, 540.  
 Beaver, James A., sketch, vii, 677.  
 Bebel, ix, 360; xi, 389.  
 Bed, musical, x, 613.  
 Beccari, O., explorations of, i, 330; iv, 408.  
 Bechamp, investigations, viii, 636.  
 Becher, Albrecht, obit., xvii, 533.  
 Bechterew, experiments, viii, 634.  
 Bechuanaland, ix, 111, 112, 113; xi, 134; war in, viii, 92; x, 85; the Rhodes settlement, x, 86; Warren expedition, x, 87; trial of Niekirk, x, 87; conflict of authority, x, 88; xiv, 106; xv, 95; xvi, 103; xvii, 76. See also Cape Colony.  
 Beck, J. B., obit., xv, 633.  
 Beck, J. T. von, obit., iii, 650.  
 Beck, William E., obit., xvii, 533.  
 Becker, G. F., x, 404; xi, 588.  
 Becker, H., obit., x, 657.  
 Becker, K. F., obit., ii, 593.  
 Beckmann, J. H., obit., iii, 650.  
 Beckwith, C., obit., xv, 633.  
 Beckwith, J. W., obit., xv, 633.  
 Beckwith, T., obit., iii, 632.  
 Beckyx, Father P. J., obit., xi, 790; xii, 623.  
 Bédard, Jules, obit., xii, 623.  
 Becquerel, A. C., sketch, iii, 53, 650.  
 Becquerel, A. E., observations by, xii, 110.  
 Bedell, G. T., obit., xvii, 533.  
 Bedford, G. S., obit., xviii, 540.  
 Bedford, H. M., obit., v, 588.  
 Beds, folding, xiii, 81.  
 Bee, vision of the honey, xii, 672.  
 Beech, Major, xiii, 2.  
 Beecher, Catherine E., sketch, iii, 53.  
 Beecher, Henry Ward, sketch and portrait, xii, 60.  
 Beecher, W. H., sketch, xiv, 618.  
 Beecherite, vi, 98.  
 Beekman, J. W., obit., ii, 575.  
 Beer, M., observations of, xi, 585.  
 Beer, tax on, vii, 65.  
 Beers, Dr. George W., x, 519.  
 Beers, Henry Newell, obit., xii, 571.  
 Beers, William H., obit., xviii, 540.  
 Beethoven, xi, 479.  
 Beet-sugar, i, 94; new product, iv, 75; in Delaware, iv, 311; in Maine, iv, 578; in Maryland, iv, 590; xviii, 597.  
 Beggars, xiii, 134.  
 Behic, A., obit., xvi, 664.  
 Behm, E., obit., ix, 614.  
 Behnke, Emil, obit., xvii, 535.  
 Behring Sea, British schooners seized in, xii, 285.  
 Behring Strait, current, vi, 325.  
 Belcastel, J. B., obit., xv, 674.  
 Belcher, Nathan, obit., xvi, 607.  
 Belcher, Sir E., obit., ii, 593.  
 Belden, David, sketch, xiii, 622.  
 Belfast, riots in, xi, 403.  
 Belgian free churches, iii, 57.  
 Belgium, statistics, elections, etc., in every volume; struggle between Catholics and Liberals, i, 7; ii, 68; on the question of secular education, iv, 77; v, 53, 56; ix, 78; xi, 84; electoral law, i, 71; changes of cabinet, iii, 56; ix, 79; church funds, vi, 58; viii, 57; controversy between moderate clericals and Ultramontanes, vi, 59; international congresses in, i, 72; ii, 69; v, 55; x, 91; expositions, v, 55; x, 91; labor-riots, xi, 81; xii, 66; cattle duties, xii, 66; free churches of, iii, 57; connection with the Congo State, x, 91; revision of constitution, xvii, 58.  
 Belgrade, illustration, i, 756.  
 Belize, Honduras, view of, xvi, 347.  
 Belknap, William W., impeachment of, i, 42, 203, 686; obit., xv, 633.  
 Bell, A. Graham, inventions and experiments by, i, 740; vi, 239, 257, 787; ix, 45, 307, 308; litigation concerning telephone patent, xii, 649.  
 Bell, Charles, ix, 476.  
 Bell, Charles H., obit., xviii, 541.  
 Bell, C. N., xi, 23.  
 Bell Cox case, the, xv, 12.  
 Bell, G. L., invention by, i, 522.  
 Bell, King, x, 121.  
 Bell, Sir G., obit., ii, 594.  
 Bell, T., obit., v, 598.  
 Bellegarde, Augustus von, obit., xi, 709; funeral of, xi, 311.  
 Bellen, F. H. T., sketch, xiii, 623.  
 Belli, invention by, iii, 545.  
 Bellova Railroad, seized, xiii, 116.  
 Belly, L. A. A., obit., ii, 594.  
 Belmont, A., obit., xv, 633.  
 Belmont, battle at, x, 423.  
 Beloochistan, rebellion in, i, 73; ii, 69; map, i, 7; British occupation of Quetta, ii, 70.  
 Belot, A., obit., xv, 674.  
 Belshaw, J., invention, viii, 466.  
 Beluchistan, xv, 435.  
 Benach, Princess, ix, 460.  
 Benares, bridge at, xiii, 299.  
 Benedek, L. von, obit., vi, 690.  
 Benedict, E. C., sketch, v, 56.  
 Benedict, Mrs. J. T., obit., ii, 575.  
 Benedict, Sir Julius, sketch and portrait, x, 92.  
 Benedict, St., anniversary, v, 658.  
 Benedictine monks, xiii, 288.  
 Bengal, x, 495.  
 Bengal Tenancy Act, x, 445, 528.  
 Benham, H. W., obit., ix, 602.  
 Beni river, exploration of, vi, 332.  
 Beni Zemour, rebellion of, xiii, 574.  
 Benie, Rear-Admiral, obit., i, 629.  
 Benjamin, Judah P., obit., ix, 602.  
 Benjamin, Samuel Nicoll, obit., xi, 665.  
 Benker and Lasne, experiments by, viii, 115.  
 Bennet, Orlando, obit., v, 588.  
 Bennett, C. W., obit., xvi, 607.  
 Bennett, Dr. Hughes, x, 742.  
 Bennett, J. G., expedition, vi, 322.  
 Bennett, Nathaniel, obit., xi, 665.  
 Bennett school law, the, xiv, 827; xv, 855, 856.  
 Bennett, Sir J. R., obit., xvi, 664.  
 Bennigsen, retirement of, viii, 395.  
 Bennington centennial, ii, 757; celebration, xvi, 858.  
 Bennington, Vt., xvii, 106.  
 Benomar, Count, x, 143.  
 Benson, E. W., sketch, portrait, viii, 57.

- Benson, S. P., obit., i, 612.  
 Bent, Theodore, xi, 34; xii, 22.  
 Bentinck, H. J. W., obit., iii, 650.  
 Benton Harbor, Mich., xvi, 149.  
 Benton, Jacob, obit., xvii, 534.  
 Benton, J. D., obit., xv, 633.  
 Benton, J. G., obit., vi, 679.  
 Benue river, exploration of, v, 290; ix, 348; x, 393.  
 Benzoic acid, v, 89.  
 Benzoyl, discovery of, ix, 809.  
 Bequests and gifts, xviii, 350.  
 Berardi, Cardinal, sketch, iii, 57.  
 Beraud, Jean, x, 358.  
 Berber, fall of, ix, 297; taken by Gordon, 301.  
 Berber tribes, revolt of, xiii, 576.  
 Berbera, province of, attempt to take, ix, 296.  
 Berchere, N., obit., xvi, 664.  
 Berdan, Hiram, obit., xviii, 541.  
 Berdellé, J. B., obit., i, 629.  
 Berden, H., invention, ii, 626.  
 Beresford, M., obit., i, 629.  
 Beresford, Lord, in Egypt, and portrait, vii, 248; x, 314, 315.  
 Beresford-Hope, A. J. B., obit., xii, 623.  
 Beressowski, xi, 377.  
 Berg, C., obit., xvi, 665.  
 Berg, M., x, 291, 292, 293; trial of, xi, 235; xii, 222.  
 Bergaigne, Abel, sketch, xiii, 660.  
 Bergh, Henry, sketch, xiii, 623.  
 Berghash, Seyyed Mahommed, obit., xi, 709.  
 Berglund, experiments, viii, 113.  
 Bergmann, Carl, obit., i, 613, 629.  
 Bering Sea Tribunal of Arbitration, with map, xviii, 79; sealing in, 683.  
 Bering's island, xi, 375.  
 Berlier, invention by, vii, 741.  
 Berlin, Treaty of, iii, 292; Gladstone on, iii, 402; dissatisfaction in Greece, iii, 409; in Hungary, iii, 425; in Italy, iii, 458; in territory ceded to Montenegro, iii, 586; in Roumania, iii, 739; territory gained by Russia, iii, 741; dissatisfaction in Russia, iii, 744; in the Turkish provinces, iii, 795, 796; in Bulgaria, ix, 733; discussion in Austria, iv, 62; indistinctness as to Montenegro, iv, 648; measures to enforce, v, 543, 687, 688; as to Greek boundaries, vi, 374; relations of Germany and Russia after, vii, 353; difficulty in carrying out, viii, 550; refusal of England to recognize, x, 753; conference, ix, 170; x, 190.  
 Bermuda, xiii, 839; xv, 407; xvi, 346; xvii, 327; and see West Indies.  
 Bermudez, Edward Edmond, obit., xvii, 534.  
 Bernaert ministry, the, ix, 80.  
 Bernard affair, the, viii, 57, 694.  
 Bernard, Claude, sketch, iii, 57.  
 Bernhardt, Theodor, obit., xii, 624.  
 Bernhardt, Sarah, sketch, v, 57.  
 Bernstein, A., lamp of, viii, 303; ix, 305.  
 Beroud, Louis, x, 367.  
 Berri-berri, disease in Achcen, xi, 603.  
 Berrien, John M., obit., viii, 586.  
 Berry, James R., obit., xvi, 607.  
 Berry, J. H., sketch, vii, 30.  
 Berry, John M., iii, 567.  
 Berry, R. M., expedition, vi, 323.  
 Bert, Paul, appointment, vii, 324; attack on the church, 324, 325; ix, 662; x, 380; obit., xi, 709.  
 Berthaut, Gen., obit., vi, 691.  
 Berthelot, P. E., experiments by, i, 92; iii, 93, 725; x, 151, 154, 343; xii, 101.  
 Berths, swinging, xvi, 709.  
 Bertin, L. A., obit., ii, 594.  
 Bertini, H., obit., i, 629.  
 Bertrand, E., ix, 506, 515.  
 Bertrand, Felix, sketch, i, 74.  
 Beryl, analysis of, x, 156.  
 Beryllium, atomic weight, vii, 89.  
 Berzelius, ix, 808.  
 Besnard, Paul A., x, 363; xii, 275.  
 Bessarabia, retrocession of, to Russia, iii, 739, 741, 742; viii, 697.  
 Bessels, Emil, sketch, xiii, 623.  
 Bessemer steel process, ii, 403; iii, 128; vii, 530; in United States, vii, 581; applied to copper, viii, 522.  
 Beta, Heinrich, obit., i, 629.  
 Beta Lyra, spectrum of, x, 53.  
 Bethells, Christopher, ix, 113.  
 Bethmann-Hollweg, obit., ii, 594.  
 Bethesda, Pool of, xiii, 31.  
 Betting, xiii, 87.  
 Betts, Charles W., obit., xii, 571.  
 Betts, W., obit., ix, 603.  
 Beust, Friedrich F., obit., xi, 84.  
 Bevan, Theodore F., explorations by, xii, 311.  
 Bevier troubles, xiii, 566.  
 Bézique, xiii, 89.  
 Bezold, W. von, xi, 539.  
 Bhamo, district of, x, 115.  
 Bhotan, insurrection, x, 491, 499.  
 Bianchi, death of, x, 394.  
 Bible Christians, ii, 510; xi, 502; xiii, 546; xiv, 566; xv, 546.  
 Bible societies, xii, 67; xiii, 92; xiv, 78.  
 Bible, the, Japanese translation, iii, 463; into Oriental languages, iii, 586; heretical views on inspiration of, iii, 698; Brahman opinion of, iv, 91; case of Robertson Smith, vi, 760, 769; of W. L. MacFarlane, vi, 769; Colenso on the Pentateuch, viii, 135; places of, identified, ix, 27; revision of the English version, x, 92; previous translations, x, 92, 93; list of translators, x, 94.  
 Bibliophile Jacob, ix, 617.  
 Bibra, Baron E. von, obit., iii, 650.  
 Bichloride of mercury and urea, x, 298.  
 Bichi, Prof., x, 158.  
 Bicker, Walter, obit., xi, 665.  
 Bickerseth, R., obit., ix, 614.  
 Bicknell, G. A., obit., xvi, 607.  
 Bicycles, ix, 80; illustrations, x, 80-84.  
 Biddle, W. M., sketch, xiv, 618.  
 Biddlecomb, Sir G., obit., iii, 650.  
 Bidwell, Shelford, x, 539.  
 Bidwell, W. H., obit., vi, 679.  
 Bierly, W. R., nominated, xiii, 263.  
 Big Bear, Chief, x, 129.  
 Bigelow, Allen G., obit., xvi, 607.  
 Bigelow, Erastus B., invention, viii, 94.  
 Bigelow, G. E., nominated, xiii, 587.  
 Bigelow, G. T., sketch, iii, 58.  
 Bigelow, Hobart B., obit., xvi, 607.  
 Bigelow, Jacob, sketch, iv, 78.  
 Bigelow, Henry Jacob, obit., xv, 634.  
 Biggar, J. G., obit., xv, 674.  
 Biggs, Judge A., sketch, iii, 58.  
 Bigler, William, obit., v, 589.  
 Bignell, F. H., ix, 349.  
 Bigourdan, M., xii, 45.  
 Billings, E. C., obit., xviii, 541.  
 Billings, F., obit., xv, 634.  
 Billings, Josh, x, 654.  
 Billot, M., x, 27.  
 Bimbia, ix, 365.  
 Bimetallic system, see Currency, ii, 235; vi, 60, 287; Latin Union, viii, 419; x, 275.  
 Bindi, Archbishop, obit., i, 629.  
 Bindseil, H. E., obit., i, 629.  
 Bingham, G. B., obit., xviii, 541.  
 Bingham, Samuel, obit., i, 613.  
 Binghamton, xi, 162; asylum, v, 572.  
 Binnie, William, obit., xi, 710.  
 Binocular vision in telescopes, xvi, 713.  
 Binz and Schulz, theory of arsenical poisoning, v, 91.  
 Biological laboratories, x, 46; work of Dr. Carpenter, x, 144, 145.  
 Biondelli, Bernardino, obit., xi, 710.  
 Birch, De Burgh, xii, 678.  
 Birch, C. B., xi, 345; obit., xviii, 576.  
 Bird organs, x, 613.  
 Bird, W. A., obit., iii, 632.  
 Bird's Nest, edible, xii, 676.  
 Birds, songs of, xi, 85; vocal apparatus of, illustrations, xi, 90.  
 Birdwood, Sir George, xiii, 7.  
 Birge, Henry W., sketch, xiii, 623.  
 Birmingham, England, illustration, i, 362; xiii, 159.  
 Birmingham, Mr., observations, iii, 38.  
 Biscacho, the, ix, 790.  
 Bishop, Anna, obit., ix, 603.  
 Bishop of Lincoln, trial of, xiv, 11; case of, xvi, 10.  
 Bishop, Richard M., obit., xviii, 541.  
 Bishop, Victor, obit., i, 613.  
 Bishop, W. I., sketch, xiv, 619.  
 Bishopric of Grahamstown, vii, 21.  
 Bishoprics, in England, iii, 403.  
 Bishops, colonial jurisdiction of, ii, 24; consecration of, ii, 27; liability of church property for debts of, vi, 793; viii, 673; right of nominating, viii, 695.  
 Bishop's Ring, x, 582; xi, 546.  
 Bismarck, Prince, contest with Liberals, i, 344; resignation offered by, ii, 350; v, 320; and Socialists, iii, 380; negotiations with Papal Nuncio, iii, 382; end of alliance with Liberals, iv, 436, 740; and the German Parliament, vi, 338; defeats of, vi, 344; state socialism of, viii, 393; influence, viii, 397; reconciliation of Russia and Austria, ix, 64; the state council and, ix, 356; not a letter-carrier, ix, 359; his party, ix, 360; his concessions to the Pope, ix, 390; the Lasker affair, see Lasker, E.; his theory of effective jurisdiction, x, 143; x, 120 *et seq.*; xi, 388, 389, 390; xvii, 316; retirement of, xv, 379; xvi



327. See also Germany in each volume.
- Bismarck Archipelago, x, 681.
- Bissagos Islands, rebellion in, xvi, 752.
- Bissell, W. H. A., obit., xviii, 541.
- Bissell, Wilson S., sketch and portrait, xviii, 736.
- Bit Karziyabku, city of, ix, 18.
- Bitter, K. H., sketch, iv, 740.
- Bixby, J. M., obit., i, 613.
- Bizzardi, Cardinal, obit., ii, 594.
- Bizzozero, experiments, viii, 633.
- Bjerknes, experiments, vi, 404.
- Bjorkmann, invention by, x, 345.
- Björnson, B., in politics, vi, 827; on the King's veto, vii, 772.
- Blaauw Krantz bridge, x, 329; illustration, x, 330.
- Black, Henry M., obit., xviii, 541.
- Black, Jeremiah S., sketch, viii, 58.
- Black Death, the, iv, 730; xiii, 311.
- Black Flags, viii, 767; ix, 137; x, 24, 27, 30; massacre by, x, 31.
- Black Forest, musical inventions of the, x, 612, 613.
- Black Friday, x, 435.
- Black Hills mines, ii, 245; ix, 240; xi, 280.
- Blackburn, Luke Pryor, iv, 541; obit., xii, 572.
- Black-mailing, act against, iii, 619.
- Black mountain expedition, xiii, 436; xvi, 377.
- Blackwood, J., obit., iv, 698.
- Bladder, operations on the, ix, 748.
- Blaine, Emmons, obit., xvii, 534.
- Blaine, James G., sketches, iv, 78, and ix, 86; steel portrait, vi, 738; official papers, see Peru, Chili, etc., and Panama Canal; oration on Garfield, vii, 127; sketch and portrait, xiv, 801; xviii, 86; birthplace, 86; residence, 93; memorial, 471.
- Blaine, Walker, obit., xv, 634.
- Blair, Barnard, obit., v, 589.
- Blair educational bill, the, xiii, 234.
- Blair, Francis P., sketch, i, 74.
- Blair Montgomery, obit., viii, 587.
- Blair, Mrs., obit., ii, 575.
- Blair, S. S., obit., xv, 634.
- Blake, E., sketch, viii, 59.
- Blake, Eli Whitney, obit., xi, 665.
- Blake, James, experiments by, vi, 99; vii, 89; ix, 659; xii, 102.
- Blake, Samuel H., obit., xii, 572.
- Blake W. P., ix, 475.
- Blakesley, J. W., obit., x, 657.
- Blanc, C., obit., vii, 645.
- Blanc, Louis, sketch, vii, 67.
- Blanchard, E. L., sketch, xiv, 655.
- Blanchard, J. W., obit., ii, 575.
- Blanchard, Jonathan, obit., xvii, 534.
- Blanchard, Wyatt, obit., ii, 575.
- Blanchett, J. G., obit., xv, 675.
- Blanford, Henry, xii, 490.
- Blanford, W. T., ix, 46; xi, 543.
- Blankingship, James A., obit., xviii, 541.
- Blanqui, A., sketch, vi, 65.
- Blas and Miest, experiments by, viii, 524.
- Blasenko, Dr., experiments by, x, 689; xii, 672.
- Blashfield, E. H., ix, 245.
- Blasphemy, trial for, viii, 418.
- Blasting powders, x, 343.
- Blatchford, Lord, sketch, xiv, 655.
- Blatchford, S., vii, 807; obit., xviii, 541.
- Blatta, fossil, illustration, ix, 368.
- Blavatsky, Helena P., obit., xvi, 665.
- Bleaching, agent in, viii, 115; improved process for, x, 159.
- Bledsoe, Dr. A. T., obit., ii, 575.
- Bleibtreu, Georg, obit., xvii, 585.
- Bleichroeder, Gerson, obit., xviii, 576.
- Blenheim Palace sale of pictures, xi, 345.
- Bleuler and Lehmann, experiments by, vi, 400.
- Blind, education of. See Howe, i, 384.
- Blinn, Christian, sketch, xiv, 619.
- Bliss, D. Willard, sketch, xiv, 619.
- Bliss, Edwin Elisha, obit., xvii, 534.
- Bliss, Isaac G., sketch, xiv, 619.
- Bliss, P. C., obit., x, 646.
- Bliss, Philemon, sketch, xiv, 619.
- Blitz, Signor, obit., ii, 575.
- Blizzard, illustrated, xiii, 602.
- Bloch, M., ix, 657.
- Block, Lieut., survey of Greenland, xii, 316.
- Blodgett, F., obit., ii, 576.
- Bloemhof, district of, ix, 111.
- Blood, pressure of the, vi, 748; mechanism of arrest of hæmorrhage, viii, 60; discoveries concerning, viii, 632; ix, 655; circulation of, xi, 757; temperature of, xii, 673; specific gravity of, xii, 673; color of, xii, 673.
- Bloodhound, the, ix, 259.
- Bloomington, Ill., xv, 120.
- Bloss, George, M. D., obit., i, 613.
- Blount, Commissioner, xviii, 382.
- Bloxam, Charles L., xii, 109.
- Blue Licks, anniversary, vii, 453.
- Blue Mountain peak, xii, 314.
- Blue Nile, the revolt on, viii, 299.
- Bluetner, J., improvements of the piano by, i, 517.
- Blum, Robert, ix, 245.
- Blumenburg, Maj. L., obit., i, 613.
- Blunt, Asa P., sketch, xiv, 619.
- Blunt, Charles E., obit., xvii, 534.
- Blunt, G. W., obit., iii, 632.
- Blunt, J. H., obit., ix, 614.
- Blunt, Wilfred, xii, 342.
- Blunt's study of Islam, vi, 440.
- Bluntschli, J. G., sketch, vi, 65.
- Boardman, G. S., obit., ii, 576.
- Boardman, H. A., obit., v, 589.
- Boas, F., x, 393.
- Boats, house, xiii, 416 *et seq.*; collapsable, 93; submarine, 798; folding, xvi, 703.
- Bobbett, Albert, sketch, xiii, 623.
- Bob White, the, x, 389.
- Boea Tigris, illustration, i, 110.
- Boehfontaine, experiments by, viii, 634.
- Boeholtz, Countess, death, v, 659.
- Boeklish, Dr., xii, 679.
- Bocock, Thomas S., obit., xvi, 608.
- Bodenstedt, F. M., von, obit., xvii, 585.
- Bodicbon, B. L. S., obit., xvi, 665.
- Bodisco, W., obit., iii, 632.
- Bodley, Rachel L., sketch, xiii, 624.
- Bodwell, Joseph R., obit., xii, 572.
- Boehm, Sir E., obit., xv, 675.
- Boercese, B., obit., viii, 597.
- Boers, war with the, vi, 87, 88; viii, 89, 92; ix, 112, 113; x, 86; disputed grant to, x, 136.
- Boer trek, the, xvi, 107.
- Bogart, W. H., sketch, xiii, 624.
- Boggs, C. S., sketch, xiii, 624.
- Boggs, Frank M., prize to, x, 367.
- Bogoslov Peak, view of, xviii, 83.
- Bogotá, xi, 192; illustration, i, 115.
- Bogy, L. V., sketch, ii, 71.
- Bog-cho, chief, xii, 81.
- Bohemia, conflict of nationalities in, v, 45; language war in, ix, 67; peasants of, illustration, i, 58; xiv, 61; disorders in, xviii, 64.
- Bohemian Ausgleich, xv, 53.
- Böhm, Dr., x, 393, 394.
- Böhmmer, experiments by, viii, 112.
- Bohn, Henry G., obit., ix, 614.
- Bohnstedt, L., obit., x, 657.
- Boisbaudran, L. de, metal discovered by, i, 524; experiments by, iii, 89; vi, 41; ix, 119; x, 578; xii, 101, 109, 110.
- Boisé City, Idaho, xvi, 149.
- Boisgobey, F., obit., xvi, 665.
- Bojanowski, Victor von, obit., xvii, 586.
- Boker, G. H., obit. and portrait, xv, 634.
- Bokhara, x, 98; Russia in, x, 98; disturbances in, xi, 6.
- Bolan Pass, the, secured to Great Britain, i, 74; occupation of Quetta, ii, 70; illustration, ii, 70.
- Bolekow, H. W. F., obit., iii, 650.
- Boldine, x, 298.
- Bolingshoff, Catherine, obit., xii, 572.
- Bolivar, Simon, statue of, x, 361.
- Bolivia, in every volume but i; silver in, x, 99, einbona, 99; cotton-tree, 100; new city and highway, 100; map, ii, 73; rebellion, ii, 72; war with Chili, iv, 82; vi, 738; Indian troubles in, xii, 69; new route to the sea, 69; gold and nitrate of soda in, 69; boundary disputes, ii, 74; iv, 29, 82; treaties, xii, 68; exploration in, xiv, 355; treaty with Chili, xviii, 96.
- Boll, Jacob, obit., v, 589.
- Bolles, J. A., obit., iii, 632.
- Bolles, Timothy Dix, obit., xviii, 534.
- Bolobo, king of, ix, 167; house in, illustration, 169.
- Bolton, H. C., investigations by, v, 93; ix, 45.
- Bolton, Sarah T., obit., xviii, 542.
- Bombay, improvements in, ix, 346; convention in, xi, 438; illustration, i, 403; views in, xiv, 426, 427.
- Bombay and Burmah Trading Company, x, 115.
- Bomberger, J. H. A., obit., xv, 635.
- Bomb outrages in Spain, xviii, 697.
- Bomford, James V., obit., xvii, 534.
- Bona, Algiers, illustration, ii, 15.
- Bona, Marquis, obit., i, 629.
- Bonaparte, Anthony, obit., ii, 594.
- Bonaparte, Constance, obit., i, 629.
- Bonaparte, Elizabeth P., sketch, iv, 86.
- Bonaparte, Eugène Louis, the Prince Imperial, sketch, iv, 88

- excitement concerning, iv, 127; proposal for statue in Westminster Abbey, iv, 89; v, 342.
- Bonaparte family, the, iv, 85.
- Bonaparte, J., manifesto, viii, 365.
- Bonaparte, James N., obit., xviii, 542.
- Bonaparte, Pierre, obit., vi, 691.
- Bonaparte, Prince Lucien, xvi, 665.
- Bonapartists, leader of, iv, 394.
- Bond, Hugh L., obit., xviii, 542.
- Bond, Richard C., obit., v, 589.
- Bonds, United States and State, see Indebtedness and Finances of United States, vii, 392; State legislation on, see Obligation of Contracts, vii, 648; and stocks, variations of, iii, 120; municipal, ii, 526, 636; iv, 545, 643, 720; railroad subsidy, v, 540; the levee, in Arkansas, iii, 23; repudiated, iv, 659; of Colombia, iii, 104; of Peru, iii, 687; of Chili, iv, 140, 141; of Argentine Republic, v, 21; of Brazil, v, 63; of Mexico, v, 571; issue of United States, xviii, 212. See also under titles of States and countries for bonded indebtedness.
- Bone-shaker, the, ix, 83.
- Bonetty, A., obit., iv, 774.
- Bonham, M. L., obit., xv, 635.
- Bonheur, Rosa, xi, 345, 347.
- Bonn Conference, i, 22, 23.
- Bonnat, Leon, x, 362.
- Bonnechosc, Cardinal de, obit., viii, 697.
- Bonnefoy-Sibour, A., obit., i, 629.
- Bonner, Sherwood, see McDowell, ix, 609.
- Bonney, T. J., xi, 48.
- Bonomi, Joseph, obit., iii, 650.
- Bontroux, experiments by, vii, 92.
- Book-holder, xvi, 708.
- Book of the Dead, xiii, 31.
- Book protector, xvi, 708.
- Books. See Literature.
- Bookwalter, J. W., picture collection of, xi, 347.
- Booneville, B. L. E., obit., iii, 632.
- Booth, Edwin Thomas, sketch and portrait, xviii, 96.
- Booth, H. G., excursion of, iv, 417.
- Booth, James, obit., iii, 651.
- Booth, J. C., experiments by, viii, 522; ix, 475; sketch, xiii, 624.
- Booth, J. W., obit., i, 613.
- Booth, Mary L., sketch, xiv, 619.
- Booth, Newton, obit., xvii, 534.
- Booth, Sir R. G., obit., i, 629.
- Booth, W. C., obit., i, 613.
- Boracic acid, antiseptic properties of, i, 96; vii, 315; theory of, ix, 809.
- Borate of quinine, x, 299.
- Borax beds, xvi, 862.
- Bordeaux clocks, the, iv, 344.
- Borel, Gen., sketch, ii, 320.
- Borelly, discoveries by, ii, 44, 46; iv, 51; vii, 21.
- Borgess, C. H., obit., xv, 635.
- Borghese, Prince, travels, vi, 326.
- Bornis-Desbordes Expedition, vii, 335.
- Borie, Adolph E., obit., v, 590.
- Borijer, Léon, obit., xi, 711.
- Borlinetto, invention of, x, 346.
- Borneo, vi, 329; North Borneo Co., *ibid.*; discussed in Spain, vi, 819; North, vii, 68; xiii, 97; British, xiv, 398.
- Börnstein, Richard, experiments by, xi, 539.
- Boro-glyceride, viii, 95.
- Borro, Luigi, obit., xi, 710.
- Borrow, George, obit., vi, 691.
- Bort, Teisserene de, on weather prediction, xi, 546; xii, 490.
- Bosco, Baron del, obit., vi, 691.
- Boshway, xii, 81.
- Bosio, A. S., sketch, i, 74.
- Bosnia, i, 756; maps, i, 751, 754; article on, in Berlin Treaty, iii, 257; v, 46; land tenure the cause of troubles in, ix, 64; xiv, 64.
- Bosnians, illustration, i, 757.
- Boss, Emil, ix, 543, 545.
- Boss, Lewis, observations by, viii, 24; prize to, vii, 42; xi, 50.
- Boston, xi, 160; anniversary of, v, 501; foreign exhibition, viii, 825; art club exhibition, xi, 347; view of, i, 510; state house, i, 513.
- Bostwick, Arthur E., experiments by, xi, 539.
- Bosworth, Joseph, sketch, i, 75.
- Botanical club, xviii, 31.
- Botanical museum, Brazil, xi, 98.
- Botanists, eminent, ix, 90-96.
- Botany, ix, 90; fossil, 96.
- Boteler, Alexander R., obit., xvii, 535.
- Botkin, J. D., nominated, xiii, 461.
- Botkin, Theodosius, impeached, xvi, 403.
- Botocudo Indians, illustration, i, 78.
- Botta, Anne C. L., obit. and portrait, xvi, 608.
- Bottesini, G., sketch, xiv, 655.
- Böttger, invention, viii, 641.
- Böttger, K. V., obit., iii, 651.
- Bottle-tree of Australia, illustration, i, 53.
- Bouchard, John, invention by, x, 734.
- Boucher, x, 364.
- Boucicault, Dion, x, 92; sketch and portrait, xv, 72.
- Boudinot, E. C., obit., xv, 635.
- Boughton, George H., x, 365; xi, 34.
- Bouguereau, x, 362, 363, 367; xii, 275.
- Bouillon, Belgium, illustration, i, 71.
- Boulanger, Gen., xi, 356; steel-plate portrait, 352; xii, 291; demonstration in favor of, xii, 292; election of, xiv, 333; measures against him, 335; flight and trial, 337; obit., xvi, 665.
- Boulangism, xiii, 347.
- Boullon, Probert and Soward, electric lamp of, viii, 303.
- Boult, S., obit., i, 629.
- Boundaries, disputed, between Russia and Great Britain in Asia, x, 2, 4, 6, *et seq.*; xi, 376; Turkey and Greece, v, 688; vi, 359; war threatened, vi, 374; new line, vi, 377, 840; vii, 371; of Montenegro, xii, 774; Montenegro and Turkey, v, 542, 687, 688; viii, 549; Roumania and Bulgaria, v, 660; Roumania and Austria-Hungary, xii, 720; Bulgaria and Serbia, xii, 736; Switzerland and Baden, v, 677; of Canadian provinces, v, 113; vii, 216; ix, 264-266; United States and British America, i, 382; Mexico and Guatemala, iii, 415; iv, 462; vi, 379; official documents, vi, 570; settled, vii, 375; Honduras and Salvador, xii, 360; Costa Rica and Colombia, v, 113; vi, 112; Colombia, Brazil, and Bolivia, ii, 74; Colombia and Venezuela, viii, 139; Bolivia and Chili, iv, 29, 82; Bolivian treaties, xii, 68; Brazilian, ix, 96; Chili and Argentine Republic, ii, 28; iii, 12, 20, 22; iv, 137; settled, vi, 25; Chili and Peru, viii, 121; Peru and Ecuador, xii, 661; of Guiana, viii, 66; arbitration of United States, vi, 777, 778; between New York and Connecticut, v, 195; New York and New Jersey, viii, 564; xii, 543; Delaware and New Jersey, iii, 236; Maryland and Virginia, i, 502; vii, 507; Georgia and Alabama, ii, 12; of Texas, vii, 794; European nations in Africa, xii, 303, 304; Tennessee and Virginia, xviii, 711. See also Africa and Afghanistan.
- Boundary of Netherlands, xiii, 87.
- Bounties, xiii, 472.
- Bourbeau, L. O., obit., ii, 594.
- Bourhourze, M., ix, 477.
- Bourchardat, Apollinaire, obit., xi, 710.
- Bourée, Nicolas P., obit., xi, 710.
- Bourgeoise, C. A., obit., xi, 711.
- Bourget, I., obit., x, 657.
- Bourn amendment, the, xiii, 715.
- Boussingault, J. B. J. Dieudonné, obit., xii, 624.
- Boutarie, E. P., obit., iii, 651.
- Boutell, Rev. C., obit., ii, 594.
- Bouton, Nathaniel, sketch, iii, 59.
- Bouverie, E. P., sketch, xiv, 656.
- Bouvier, Alexis, obit., xvii, 586.
- Bove, Lieut., expedition, vi, 333; xii, 624.
- Bovee, Marvin H., sketch, xiii, 624.
- Bovy, F. A., obit., ii, 594.
- Bowditch, Henry Ingersoll, obit., xvii, 535.
- Bowditch, H. P., experiments, vi, 751; xi, 46; xii, 671.
- Bowditch, J. I., sketch, xiv, 620.
- Bowen, F., obit., xv, 635.
- Bowen, James, obit., xi, 666.
- Bowen, J. E., obit., xv, 635.
- Bowen, Levi F., sketch, xiv, 620.
- Bower, invention by, vii, 533; ix, 473.
- Bowers, G. V., obit., iii, 632.
- Bowler, Mrs. A. K., obit., 613.
- Bowles, Sir George, sketch, i, 75.
- Bowles, Samuel, sketch, iii, 59.
- Bowling Green, xiii, 159.
- Bowman, Francis C., obit., ix, 603.
- Bown, George, invention by, iv, 134.
- Boxing, xiii, 93.
- Boxwood, Cape, x, 135.
- Boyce, Rev. James, obit., i, 613.
- Boyce, James P., sketch, xiii, 625.
- Boycott, xv, 73.
- Boycotting conspiracy in Illinois, xii, 375.
- Boyd, Sir H. H., sketch, i, 75.
- Boyd, Percy, obit., i, 629.
- Boyd, R., obit., xv, 635.
- Boyer, Léon, obit., xi, 711.
- Boyle, Charles Barry, obit., xvii, 535.



- Boynton, Edward C., obit., xviii, 542.
- Boynton, J. F., obit., xv, 636.
- Braamcamp, A. J., obit., x, 657.
- Brabourne, Baron, obit., xviii, 576.
- Brace, B. F., sketch, xiii, 625.
- Brace, C. L., obit. and portrait, xv, 636.
- Brachvogel, A. E., obit., iii, 651.
- Brackenbury, H., obit., xv, 675.
- Brackett, C. F., xi, 46.
- Bradego, M. G. B., x, 331.
- Bradford, J. Rose, xii, 678.
- Bradford, Penn., xii, 119.
- Bradford, William, obit., xvii, 535.
- Bradlaugh, Charles, case of, in Parliament, v, 334; vi, 365; vii, 365; viii, 409; ix, 372; x, 453; xi, 399; obit. and portrait, xvi, 666.
- Bradley, Chief-Justice, opinions by, x, 272.
- Bradley, Edward, sketch, xiv, 656.
- Bradley, Joseph P., obit., xvii, 536.
- Bradshaw, Dr., residence of, in Africa, iv, 407.
- Brady, Alexander, obit., iv, 692.
- Brady, John R., obit., xvi, 608.
- Brady, Mrs. R., obit., ii, 576.
- Bragaldi, Marquis Mario, obit., xviii, 542.
- Bragdon, Charles D., obit., i, 613.
- Bragg, Braxton, sketch, i, 75.
- Bragg, Walter L., obit., xvi, 608.
- Brahe, Tycho, statue of, i, 230.
- Brahmanism, reform of. See Brahmo Somaj.
- Brahmans, conspiracies of, vi, 423.
- Brahmo Somaj, the, sketch, iv, 89; v, 389; vi, 65.
- Brain, chemistry of the, i, 89; localization in the function of, vi, 748; surgery of, ix, 742, 749. See also Cerebral Localization, viii, 98, and nervous system, the, xiii, 753.
- Brainerd, Cape, ix, 35.
- Brainerd, Minn., xvii, 106.
- Brake, electric, vi, 255.
- Brame, J. L. J., obit., iii, 651.
- Bramtot, Alfred H., x, 362.
- Bramwell, F. J., address, xiii, 45.
- Bramwell, Lord, obit., xvii, 586.
- Brand, Sir H. B. W., obit., xvii, 586.
- Brand, Sir J. H., obit., xiii, 660.
- Brandt, drill invented by, vi, 820.
- Brashear, John A., xi, 46, 55.
- Brassais, St. Marc, obit., iii, 651.
- Brassey, Lady Annie, obit. and portrait, xii, 70.
- Bratiano, Demeter, obit., xvii, 586.
- Bratiano, J., obit., xvi, 667.
- Bratiano, M., attempted assassination of, xii, 719.
- Brattleboro, Vt., xvii, 107.
- Braun, Alexander, obit., ii, 594.
- Braunau, Bohemia, illustration, i, 55.
- Bravard, J. P., obit., i, 629.
- Brayton, G. A., obit., v, 590.
- Brazier, Prof., x, 161.
- Brazil, statistics, government, etc., in every volume; slavery in, i, 76; vi, 73; viii, 67; ix, 97; x, 102; xi, 97; immigration to, i, 77; ii, 74; viii, 68; ix, 97; boundary questions, ii, 74; ix, 96; foreign debt, ii, 77; coffee production, iii, 62; vi, 70; famine in, iii, 64; electoral reform bill, v, 65; vi, 71; cotton manufacture, vii, 72; valuable woods, viii, 72; diamond-mines, viii, 72; explorations, ix, 350; x, 104; xii, 74; valuable new plants, xii, 73; growth of industries, xii, 73; naturalization bill, viii, 68; Empress of, sketch, xiv, 671; changed to a republic, xiv, 82; revolt in, xviii, 101.
- Brazilein, crystalline, vii, 88.
- Brazilian ox, illustration, iii, 63.
- Brazza, S. de, explorations by, ii, 333; iv, 401; vi, 328; vii, 336; viii, 385; ix, 165, 168; x, 392; xi, 372.
- Bread, alum in, iii, 86.
- Breadstuffs, commerce in, iv, 165.
- Breakwater at Ceará, xii, 260.
- Breckinridge, S. M., obit., xvi, 608.
- Breed, William P., sketch, xiv, 620.
- Breese, S., obit., iii, 632.
- Bregenz, illustration, i, 59.
- Bremen, incorporation of, xiii, 372.
- Breniontier, M., experiments by, x, 333.
- Brennan, John M., obit., xvii, 536.
- Brennan, Margaret, obit., xii, 573.
- Brenner, Carl, sketch xiii, 625.
- Brent, Henry J., obit., v, 590.
- Brentano, August, obit., xi, 666.
- Brentano, Lorenzo, obit., xvi, 608.
- Bresnik, capture of, x, 729.
- Brestel, R., obit., vi, 691.
- Brethren Church, xiv, 69.
- Brethren in Christ, xii, 770.
- Breton, J., x, 367; xi, 344, 347; xii, 280.
- Brevoort, J. C., obit., xii, 573.
- Brewer, David J., sketch, xiv, 805; portrait, xv, 820.
- Brewer, Francis B., obit., xvii, 536.
- Brewer, J. S., obit., iv, 698.
- Brewster, B. H., portrait, vii, 612; sketch, xiii, 625.
- Brewster, Sir David, xi, 565, 569, 570.
- Brewster, Henry, obit., xii, 573.
- Bribery, charges of, iv, 718; law in New Jersey, v, 561; trial for, v, 621; case of Sessions, vi, 643.
- Brice, Benjamin W., obit., xvii, 536.
- Briece, O. and A., experiments by, xii, 107.
- Brickman, Arthur O., obit., xi, 666.
- Brickwork, xiii, 106.
- Bridge at Memphis, xvii, 249.
- Bridge construction, x, 328.
- Bridge ferry, at Bilbao, xviii, 279.
- Bridge, Horatio, obit., xviii, 542.
- Bridgeport, xi, 161.
- Bridges, new, i, 256, 257; over the Kentucky, ii, 273; over the Ohio, ii, 273; v, 244; in California, ii, 273; over the Tay, ii, 274; x, 328; xii, 253; disaster at the Tay, v, 344; report on, v, 244; over the Severn, ii, 275; iii, 283; iv, 340; over the Erewash, ii, 275; at Buda-Pesth, ii, 275; over the Douro, ii, 276; iii, 283; East River, iii, 280; vi, 245; vii, 582; viii, 311; upper East River, vii, 282; over the Missouri, iii, 282; v, 242; over the Volga, iv, 342; in America, iv, 342; over the Nile, iv, 342; Forth, vii, 283; viii, 315; ix, 312; x, 328; Kinzua valley, vii, 283; Niagara Cantilever, viii, 313; Garabit viaduct, viii, 316; renewal of Niagara, vi, 245; Blaaw-Krantz, x, 329; railroad in United States, v, 242; use of steel for, iv, 342; at Oporto, illustration, xi, 313; and viaduct in Russia, illustration, 315; in Mexico, illustration, 316; at Verona, x, 330; at Poughkeepsie, xii, 252; illustration, xii, 253; at Taranto, illustration, xii, 254; stiffened suspension, with diagrams, xii, 254; at Oak Park, xii, 255; at St. Louis, xii, 229. See Engineering.
- Bridgeton, N. J., xvii, 107.
- Bridge tower, moving a, xvii, 250.
- Bridgman, Frederick, x, 363.
- Bridgman, L. D., sketch, xiv, 620.
- Brierley, J. T., x, 154.
- Brig, prehistoric boat discovered at, xi, 35.
- Brigandage in Italy, i, 422; in Thessaly and Epirus, v, 690; in Egypt, ix, 286; xiii, 115; xiv, 98; xvi, 827.
- Briggs, Charles F., sketch, i, 79.
- Briggs, Mrs. H. H., obit., i, 613.
- Briggs, Jeremiah, obit., i, 613.
- Brigham, David, sketch, xiii, 625.
- Brigham, M. A., sketch, xiv, 620.
- Bright, J., sketch and portrait, xiv, 656.
- Bright, John, sketch, v, 65; ix, 375.
- Brightly, F. C., sketch, xiii, 625.
- Brighton, illustration, iii, 400.
- Brignoli, P., obit., ix, 603.
- Brin, M. M., experiments by, x, 159.
- Brinckmann, J. B., sketch, xiv, 658.
- Brinkerhoff, J., obit., v, 590.
- Brinley, Francis, sketch, xiv, 621.
- Brinsmade, H. N., obit., iv, 692.
- Brinton, Daniel G., xii, 14; address, xiii, 44.
- Brinz, Aloiz von, obit., xii, 624.
- Brion, G., obit., ii, 595.
- Brisbane, W. H., obit., iii, 633.
- Brisbin, James S., obit., xvii, 536.
- Brisson, Henri, x, 27, 375; sketch, 376.
- Bristol, dock at, iii, 287.
- Bristow, E., obit., i, 630.
- British America, explorations in, xiv, 357; xvii, 299.
- British colonies, table of areas, etc., x, 460.
- British Columbia, viii, 72; ix, 270; boundaries, ix, 264, 265; x, 104; xi, 98; Chinese question in, x, 104; xvii, 68; xviii, 107.
- British East Africa, xviii, 270.
- British Honduras, ix, 803.
- British ministry, change of, x, 446.
- British politics, in India, v, 383.
- British South Africa Company, xviii, 122.
- Britton, Winehester, obit., xi, 666.
- Broadway street railroad franchise, x, 641.
- Broadwood, H. F., obit., xviii, 576.
- Broca, Paul, sketch, v, 66.
- Brockett, L. P., obit., xviii, 543.
- Brockhaus, H., obit., ii, 595.
- Brocklesby, John, sketch, xiv, 621.
- Brockton, xi, 161.
- Brockville, xv, 121.
- Brockway, Z. R., xii, 703.
- Brodie, Sir B. C., obit., v, 598.

- Brodie, J. H., ix, 478.  
 Broglie, Duc de, message of, ii, 311; sketch of, ii, 319; x, 375.  
 Bromfield's iron process, vii, 529.  
 Bromide of ethyl, v, 94.  
 Bromine, discovery of, see Balard, i, 61; manufacture of, v, 89.  
 Bromley, V. W., obit., ii, 595.  
 Brongniart, A. J., sketch, i, 80; ix, 278.  
 Bronsart, Gen., obit., xvi, 667.  
 Bronson, S. A., obit., xv, 636.  
 Bronzes and brasses, new methods, vi, 542; investigation of strength of, ix, 477; silicious bronze, x, 578.  
 Bronzino, sale of picture by, x, 366.  
 Brooklyn, xi, 162; Atlantic dock at, illustration, i, 606; theater burned, i, 605.  
 Brooks, C. T., obit., viii, 587.  
 Brooks, D., invention, iv, 347.  
 Brooks, David, obit., xvi, 609.  
 Brooks, Elisha, obit., i, 613.  
 Brooks, E. P., obit., iii, 633.  
 Brooks, Erastus, obit., xi, 667.  
 Brooks high-license law, xiv, 688.  
 Brooks, Horatio G., obit., xii, 573.  
 Brooks, Joseph, obit., ii, 576.  
 Brooks, Lewis, obit., ii, 576.  
 Brooks, Phillips, sketch and port., xviii, 111.  
 Brooks, W. R., observations by, vii, 35; discoveries, viii, 24; ix, 51; x, 51; xi, 57; xii, 45.  
 Broome, Sir F. N., ix, 60; x, 60, 65.  
 Brophey, George, obit., v, 590.  
 Brougham, John, sketch, v, 66.  
 Brown, Barrington, ix, 539, 540.  
 Brown, B. Gratz, obit., x, 646.  
 Brown, Dyer D. S., obit., xii, 573.  
 Brown, D. S., obit., ii, 576.  
 Brown, Ford Madox, obit., xviii, 576.  
 Brown, George L., sketch, xiv, 621.  
 Brown, H. A., obit., iii, 633.  
 Brown, Henry Billings, sketch and port., xv, 819.  
 Brown, H. S., obit., i, 614.  
 Brown, J. G. L., obit., iii, 633.  
 Brown, J. M., obit., xv, 637.  
 Brown, John, monument to, ii, 417.  
 Brown, John, obit., ix, 603.  
 Brown, John C., sketch, xiv, 621.  
 Brown, John H. H., sketch, xiii, 625.  
 Brown, Joseph B., obit., xvi, 609.  
 Brown, Joseph E., sketch, v, 311.  
 Brown, Oscar F., sketch, xiv, 621.  
 Brown, S. G., obit., x, 646.  
 Brown, Simeon, obit., xviii, 543.  
 Brown, Sir Thomas Gore, obit., xii, 625.  
 Brown, William, obit., i, 630.  
 Brown, W. F., obit., vi, 679.  
 Browne, George W., obit., xv, 636.  
 Browne, Thomas H. B., obit., xvii, 537.  
 Browne, Thomas M., obit., xvi, 609.  
 Browning, O. H., sketch, vi, 73.  
 Browning, Robert, sketch and port., xiv, 86.  
 Brownlow, W. G., sketch, ii, 79.  
 Brownson, O. A., sketch, i, 81.  
 Bruce, David, obit., xvii, 537.  
 Bruce, J. C., obit., xvii, 536.  
 Brücke, investigations by, ix, 657; illustration of his magnifier, ix, 500; xii, 674.  
 Brückner, E., xii, 491.  
 Bruges, bells of, x, 611; belfry of, illustration, i, 72.  
 Brüggemann, K. H., obit., xii, 625.  
 Brugière picric powder, x, 346.  
 Brugsch, E., researches of, vii, 261; x, 35, 36.  
 Brühl, M., obit., ii, 595.  
 Brunel, xvi, 344; xvii, 326.  
 Brunet, J. M., sketch, ii, 320.  
 Brünninghausen, C., obit., i, 614.  
 Brunswick, Ga., xiv, 141; xviii, 340.  
 Brunswick succession, ix, 359; death of the duke, ix, 624; x, 418; regent, x, 418.  
 Brunton, T. L., ix, 655, 660.  
 Brush, Christine Chaplin, obit., xvii, 537.  
 Brush, C. F., electric light, vi, 258; experiments, vii, 266; storage-battery, vii, 273; street-lamp, illustration, ix, 307.  
 Brussels, exhibition, xi, 346; illustration, ii, 69.  
 Bryant, W. C., sketch and portrait, iii, 64.  
 Bryson, Andrew, obit., xvii, 537.  
 Bubastis, great temple of, xii, 19; illustration, xii, 20; monuments at, xii, 28; work at, xiv, 27.  
 Bûbûn sacked, ix, 558; x, 150.  
 Buecluch, Duke of, obit., ix, 615.  
 Buchan, Alexander, xi, 542.  
 Buchan, Mr., x, 120.  
 Buchanan, J. N., xii, 104.  
 Buchanan, Mr., xi, 540.  
 Buchanan, R. C., obit., iii, 633.  
 Bucharest, illustration, i, 759.  
 Bucher, A. L., obit., xvii, 536.  
 Buchholtz, Reinhold, sketch, i, 81.  
 Buchtel, John R., obit., xvii, 537.  
 Buck, Dr. G., sketch, ii, 79.  
 Buck, Hiram, obit., xvii, 538.  
 Buckingham, Duke of, sketch, xiv, 658.  
 Buckingham, Lieut., observations by, ix, 554.  
 Buckingham, William A., statue of, sketch, ix, 231; x, 361.  
 Buckland, Cyrus, obit., xvi, 609.  
 Buckland, F. T., obit., v, 598.  
 Buckland, Ralph P., obit., xvii, 538.  
 Buckminster, W. J., obit., iii, 633.  
 Bucknell College Observatory, xii, 40.  
 Bucknell, W., obit., xv, 637.  
 Buckner, Gen. Simon B., x, 423.  
 Buda, Hungary, view of, i, 387.  
 Budberg, Baron, obit., vi, 691.  
 Budd, Dr. C. A., obit., ii, 576.  
 Budd, C. H., obit., v, 590.  
 Budde, Dr., viii, 528.  
 Buddhism, in Japan, i, 428; xiii, 109.  
 Buddicom, William Barber, obit., xii, 625.  
 Buddington, S. O., sketch, xiii, 625.  
 Budington, W. I., iv, 94.  
 Budrtzki, R. O. von, obit., i, 630.  
 Buel, Samuel, obit., xvii, 538.  
 Buell, Gen. Don Carlos, x, 424.  
 Buenos Ayres, financial crisis in, i, 35; project for a port, iii, 20; view of the city of, ii, 31; of the bank of, vii, 25.  
 Buerger, E. M., obit., xv, 637.  
 Buffalo, or bison, extermination of the, xii, 74.  
 Buffalo, N. Y., xi, 162; view of, i, 601.  
 Buffum, James N., obit., xii, 574.  
 Buford, Thomas, iv, 541.  
 Bugbee, S. C., obit., ii, 576.  
 Building and Loan Associations, xiii, 245.  
 Building and Loan Companies, viii, 85.  
 Bulas, tribe of the, v, 291.  
 Bulgaria, iii, 65; map, ii, 722; in the Berlin Treaty, iii, 256; first Parliament, iv, 95; election of prince, iv, 97; disturbances, iv, 98; national debt, v, 67; Constitution annulled, vi, 73; vii, 73; viii, 74; ix, 101; x, 105; conflict with Servia, ix, 102, 733; revolution, x, 107; Servian action, x, 109; Greek, x, 109; Turkish, x, 110; of the great powers, x, 111; union with East Roumelia, ix, 103; conference to settle, x, 752-755; victory of England, x, 754; xi, 100; Alexander dethroned, xi, 103; restored, xi, 104; abdication, xi, 104; the regency, xi, 106; treaty of friendship with Servia, xi, 108; the Russians in, xi, 391; election of Ferdinand, xii, 80; new Cabinet, xii, 80; xiii, 111; xiv, 95; xv, 80; xvi, 96; xvii, 69; xviii, 114; revision of the Constitution, xviii, 116.  
 Bulgarian costumes, illustration, i, 757.  
 Bulgars, D., obit., iii, 651.  
 Buli Dupis, tribe of, vi, 330.  
 Bulkley, J. W., sketch, xiii, 626.  
 Bull, dephosphorization process, viii, 521.  
 Bull, Richard H., obit., xvii, 538.  
 Bullard, Asa, sketch, xiii, 626.  
 Bull-fights, motion for schools for readers in Spain, v, 871; xii, 504.  
 Bulloch, W. H., ix, 502, 503, 505, 513.  
 Bullock, R. B., ex-Governor of Georgia, trials of, iii, 372.  
 Bullock, W. F., sketch, xiv, 621.  
 Bull Run, battle of, x, 652.  
 Bull-terrier, the, ix, 260.  
 Bülow, Herr von, x, 419.  
 Buloz, F., obit., ii, 595.  
 Bulwer, Sir Henry, x, 137.  
 Bunee, O. B., obit. and port., xv, 637.  
 Bunda, Gen., iv, 727.  
 Bundy, Jonas M., obit., xvi, 609.  
 Bungay, G. W., obit., xvii, 538.  
 Bunge, Dr. A., ix, 348; xii, 316.  
 Bunker, D. M., prize to, x, 367.  
 Bunker, Robert, obit., xvii, 538.  
 Bunsen, Baroness, obit., i, 630.  
 Bunsen, Robert W., xii, 412.  
 Bunzl, Julius, obit., xii, 574.  
 Buoy, v, 451; signal, viii, 721, 722.  
 Burch, J. C., sketch, vi, 76.  
 Burchard, S. D., obit., xvi, 609.  
 Burdach, E., obit., i, 630.  
 Burdon-Sanderson, J. S., ix, 660 x, 150; port., xviii, 31.  
 Bureau, Achille, sketch, xiii, 626.  
 Burgers, T. F., obit., vi, 691.  
 Burgess, Edward, obit., xvi, 609.  
 Burgess, Henry, obit., xi, 711.  
 Burgess, Walter S., obit., xvii, 538.  
 Bûrgin, invention of, vi, 253.  
 Burial, regulations for, in Great Britain, i, 360; of the unbaptized, i, 23; of dissenters in parish



- church-yards, ii, 17, 66; iii, 13; v, 16, 17; discussed in Parliament, v, 341; law of, xiii, 116.
- Burke, Denis F., obit., xviii, 543.
- Burke, E. A., his defalcation, xiv, 518.
- Burke, Sir J. B., obit., xvii, 586.
- Burke, T. H., obit., vii, 645. See Phoenix Park Murders.
- Burke, T. M., obit., viii, 597.
- Burleigh, C. C., obit., iii, 633.
- Burleigh, E. C., nominated, xiii, 510.
- Burleigh, J. H., obit., ii, 576.
- Burleigh, Lord, x, 722.
- Burlingame, A., ambassador from China, iii, 810; treaty, vii, 387.
- Burlington, Iowa, xiv, 450; xvii, 108.
- Burlington, Vt., xvii, 108.
- Burmah, iv, 98; v, 68; xi, 110; map, iv, 99; xi, 111; Chinese influence in, iv, 143; British in, vii, 416; x, 112; state barge, illustration, x, 113; conflict with Great Britain, x, 114; a Burmese colonel, illustration, x, 114; relations with France, x, 114, 115; annexation by Great Britain, x, 115; conflict with China, x, 115; xii, 81; warfare in, xii, 81, 83; English rule established, xii, 82; petroleum in, xii, 84; rubymines, xii, 84; xiii, 437; xiv, 429; xv, 436; xvi, 377.
- Burnaby, Frederick G., ix, 304; sketch and portrait, x, 115.
- Burne-Jones, Edward, x, 360; xi, 345; xii, 277, 278.
- Burnes, Alexander, xi, 2.
- Burnes, James N., sketch, xiv, 621.
- Burnett, Sir J. H., obit., i, 630.
- Burnett, W. B., obit., ix, 603.
- Burnham, S. W., discoveries and experiments by, iii, 38; v, 36, vii, 36; viii, 26.
- Burnham, T. O. H. P., obit., xvi, 610.
- Burnhem, G. W., obit., x, 646.
- Burns, Rev. J., obit., i, 630.
- Burns, Robert, his cottage, i, 357.
- Burns, Sir G., obit., xv, 675.
- Burns, William Wallace, obit., xvii, 538.
- Burnside, Ambrose E., sketch, vi, 76; statue of, xii, 280.
- Burnside, John, sketch, vi, 77.
- Burnside Will Case, vii, 486.
- Burr, D. J., obit., i, 614.
- Burrell, Sir Percy, sketch, i, 82.
- Burril, observations by, vi, 669.
- Burritt, Elihu, sketch, iv, 102.
- Burroughs, John Curtis, obit., xvii, 588.
- Burroughs, William, obit., i, 614.
- Burrows, Sir J. C., obit., i, 630.
- Bursian, C., obit., viii, 598.
- Burstal, Edward, obit., xi, 711.
- Burt, W. A., x, 401.
- Burtis, Divine, obit., xii, 574.
- Burton, Capt., theory of, iii, 361.
- Burton, Harry, x, 454.
- Burton, J. R., obit., i, 630.
- Burton, Nathaniel J., obit., xii, 574.
- Burton, Sir R. F., sketch and port., xv, 86.
- Burwell, Theodosius, obit., xvi, 610.
- Buschmann, J. K. E., obit., v, 598.
- Bushmen, illustration, ii, 86.
- Bushnell, Horace, sketch, i, 82.
- Busk, George, obit., xi, 711.
- Buss, F. J. von, obit., iii, 651.
- Bustard, Australian, illustration, ii, 51.
- Butcher, Samuel, sketch, i, 82.
- Butler, Benjamin F., obit. and port., xviii, 543.
- Butler, C. M., obit., xv, 638.
- Butler, Gen. B. F., x, 427, 428.
- Butler, Mrs. B. F., obit., i, 614.
- Butler, B. I., obit., vi, 679.
- Butler, David, nominated, xiii, 587; obit., xvi, 610.
- Butler, George B., obit., xi, 667.
- Butler, T. L., obit., v, 590.
- Butler, W. O., sketch, v, 70.
- Bütner, Dr., xi, 373.
- Butt, Isaac, sketch, iv, 103.
- Butt, Sir C. P., obit., xvii, 587.
- Butte City, Mon., copper works at, x, 577; xvi, 150.
- Butter, analysis of, xiii, 144.
- Butter in Iowa, xviii, 408.
- Buttinger, W., sketch, xiii, 623.
- Buttre, John C., obit., xviii, 544.
- Buxime, xi, 290.
- Buxton, D. W., xii, 674, 679.
- Byss-Ballot, xi, 539; iv, 798.
- Bynner, Edwin L., obit., xviii, 544.
- Byron, Henry J., obit., ix, 615.
- Caballero, Fernan, sketch, i, 82; ii, 595.
- Cabanel, Alexandre, x, 362; xii, 275; sketch, xiv, 658.
- Cabat, N. L., obit., xviii, 577.
- Cabell, James L., sketch, xiv, 621.
- Cable-railways, xi, 122; illustrations, 122-125.
- Cables, Atlantic, viii, 338; International Protection of Submarine, viii, 76; ix, 339. See Cordage.
- Cable, submarine, xiii, 574; traction, xiv, 295.
- Cabrera, Count, sketch, i, 82.
- Cabul, map, iv, 13; view of, ii, 5.
- Caceres, Gen., ix, 649; x, 686, 687.
- Cadmium, atomic weight of, vi, 93.
- Cæsius, isolation, of, vii, 97.
- Caffarel, Gen., xii, 294.
- Caffre War, the, ii, 85; iii, 7, 81; iv, 128, 129.
- Caffres, the. See Basutos, Bechuanaland, etc.
- Cahensly agitation, the, xvi, 774.
- Caillaux, Eugène, ii, 319.
- Caillet de Poncy, experiments by, vi, 751.
- Cailletet, M. Le, liquefaction of gases by, ii, 89; ix, 434; x, 152; illustration, ii, 89.
- Caine, J. T., nominated, xiii, 832.
- Caird, Sir J., obit., xvii, 587.
- Cairn, Richard Harvey, obit., xii, 575.
- Cairns, Hugh MacCalmont, Earl, land act of, x, 457; obit., x, 657.
- Cairns, Robert, obit., i, 614.
- Cairo, Ill., xviii, 153.
- Cairo, street in, illustration, i, 246.
- Cairolì, Benedetto, sketch, xiv, 658.
- Calanan, M. E., obit., xv, 638.
- Calcutta exhibition, ix, 407; view of buildings and monument in, i, 404.
- Caldecott, Randolph, obit., xi, 711.
- Calderon, Centenary, vi, 819.
- Calderon, G., vi, 738. See Peru, Chili, and the United States, vi, 738.
- Calderon, Philip H., x, 364; xi, 345.
- Caldwell, C. H. B., obit., ii, 576.
- Caldwell, S. L., sketch, xiv, 622.
- Calendar, the Gregorian, vii, 371.
- Calendar-stone, Aztec sacrificial ix, 17, 18; illustration, ix, 18.
- Caley, Dr., operation by, x, 742.
- Calf-feeder, xvi, 708.
- Calgary, xiii, 160.
- Calhoun, John C., statue of, xii, 280.
- Calhoun, S. H., obit., i, 614.
- Calico-printing, xii, 109.
- California, government, statistics, etc., in every volume; map of Yosemite Valley, iii, 80; views in, ii, 81, 82; iii, 71, 72; railroad questions, i, 85; iv, 112, 117; vii, 78; taxation, i, 86, 87; vi, 80, 84; labor questions, iii, 69, 73; iv, 109; v, 77; irrigation, iii, 72; ix, 104; x, 118; contested land-titles, v, 77; new constitution, v, 77; petroleum and asphaltum, xii, 88; wines and fruits, iii, 80; iv, 119; vi, 79; x, 117; xi, 128; disposal of debris, iii, 72; v, 73; vi, 78; vii, 75; ix, 105; cod-fishing, x, 118; project to divide into two states, xii, 88; population, xvi, 98; midwinter exposition, xviii, 120. Chinese in. See Chinese in United States, the.
- California, Lower, xiii, 547.
- Callaway, H., obit., xv, 675.
- Calthrop, Claude, obit., xviii, 577.
- Calverley, Charles S., obit., ix, 615.
- Calvert, G. H., sketch, xiv, 622.
- Calvin, John, proposed monument to, ix, 667.
- Calvinistic Methodist Church, xiii, 705.
- Cam, Diego, ix, 168; xii, 306.
- Cambier, explorations, iii, 361.
- Cambodia, ix, 339; x, 118; insurrection in, x, 118.
- Cambridge, xi, 163.
- Cambridge, Duchess of, sketch, xiv, 659.
- Cambyes, x, 607.
- Camden, xi, 163.
- Cameron, plan for exploration, ii, 329.
- Cameron, Charles S., obit., xvi, 610.
- Cameron, D., observations, vii, 39.
- Cameron, J. Donald, sketch, i, 88.
- Cameron, Sir D. A., sketch, xiii, 660.
- Cameron, Simon, sketch and port., xiv, 622.
- Cameroons, ix, 364, 365; x, 119; xi, 129; complications with England, x, 119; revolt against the German government, x, 121; mountain districts, x, 122; Mahin district, x, 123; compromise with England, x, 123, 395.
- Cammarota, F., obit., i, 630.
- Cammoens, tercentenary of, v, 628.
- Camp, Frederick E., obit., xvi, 610.
- Camp, Hiram, obit., xviii, 544.
- Campagna, view of the, i, 419; reclamation of, viii, 454.
- Campbell, A., obit., xv, 638.
- Campbell, Sir A., obit., xvii, 587.
- Campbell, Bartley, sketch, xiii, 626.
- Campbell, Douglas, obit., xviii, 544.

- Campbell, Sir George, xi, 48; obit., xvii, 587.
- Campbell, J. A., obit., v, 591.
- Campbell, J. A., sketch, xiv, 622.
- Campbell, Jabez P., obit., xvi, 610.
- Campbell, James, obit., xviii, 544.
- Campbell, J. F., x, 588.
- Campbell, J. M., sketch, xiii, 626.
- Campbell, John Lyle, obit., xi, 667.
- Campbell, J. V., obit., xv, 689.
- Campbell, Judge, x, 325.
- Campbell, Margaret W., iv, 598.
- Campbell, T. C., obit., ii, 576.
- Campbell, Tunis G., obit., xvi, 611.
- Campbell, W. H., obit., xv, 639.
- Campeon, Gen., xi, 25, 375, 376.
- Campero, Gen., ix, 88.
- Camphausen, W., obit., x, 658.
- Campos, Martinez, ix, 741.
- Camps for boys, xiii, 120.
- Cana in Galilee, stone from, x, 37.
- Canada, Dominion of, xiii, 375; xiv, 275; xv, 257; xvi, 258; xvii, 239; xviii, 262. See Dominion.
- Canada, Clem, obit., v, 591.
- Canadians, attempt to repatriate, ix, 676.
- Canals, interoceanic, i, 117, 253; iii, 105; iv, 340; v, 200; vi, 662; vii, 279; viii, 581; ix, 592; see also Interoceanic Canal, iv, 503; of New York State, xviii, 522; and Panama Canal, vi, 714; xii, 138; Panama, xviii, 173; obligations of United States, v, 379; Suez, i, 244, 247, 355; ii, 263, 270; iii, 268; enlargement, viii, 307; xii, 240; proposed, to the Sahara, i, 254; Chinese Grand, iii, 291; Ob to Yenesai, iii, 358; Krah, vi, 244; projected in Germany, Austria, and Holland, vi, 244; v, 249; the North Sea, i, 253, 254, 583; x, 417; xi, 383; Corinth, vi, 243; viii, 308; xviii, 70; proposed Zuyder Zee, i, 254; in Switzerland, iii, 291; Black Sea to Caspian, i, 253; Volga-Don, xi, 378; proposed Mississippi, v, 379, 719; vi, 410; vii, 381; proposed Florida, iv, 377; vii, 312; viii, 309; proposed Cape Cod, v, 247; xii, 459; proposed Hudson and East River, iii, 291; v, 250; from Lake Huron to Lake Ontario, iv, 240; proposed from Baltimore to Atlantic Ocean, iii, 239, 521; iv, 589; Columbia, ii, 627; in Canada, v, 219; Welland, vii, 215; Lachine, iv, 321; Chignecto, vi, 244; Erie, new mode for propelling boats on, iv, 345; New York Assembly on, iii, 616; abolition of tolls, vi, 651; St. Petersburg ship, x, 716; Isthmus, xi, 653; Nicaragua, xii, 563; Chesapeake and Ohio, xii, 456; Nicaragua, with map, xiii, 614; Illinois and Michigan, xv, 428.
- Canalization of rivers, xiv, 293.
- Canal tolls, xvii, 194.
- Canandaigua, xv, 121.
- Canaris, C., obit., ii, 595.
- Canby, Gen., x, 431.
- Canceled machines, xii, 689.
- Cancer, alleged cures for, x, 298, 299.
- Candahar, battle near, v, 7, evacuated by the British and taken by Ayroob, vi, 3; map, v, 7; proposal to cede, to Turkey, x, 12; illustration, iii, 5.
- Candia, insurrection in, i, 2.
- Cannabino, x, 299.
- Canned provisions, ix, 2; their wholesomeness, 106.
- Canning, Josiah D., obit., xvii, 539.
- Canning, Sir S. See Stratford de Redcliffe.
- Cannon, Anthony, obit., xvi, 611.
- Canoes, ix, 107; Papuan double, ix, 116; Feejee, ix, 117; illustrations, ix, 116 *et seq.*
- Cañon City, Col., xviii, 154.
- Can-opener, xvi, 705.
- Canovas, retirement of, vi, 818; ix, 741; x, 140, 143.
- Cantagoul, F. F. J., obit., xii, 625.
- Canterbury, J. H. T. M. S., Viscount, obit., ii, 595; Archbishop of, viii, 6, 57; Convocation of. See under Anglican Churches in every volume.
- Canterbury Cathedral, illustration, iii, 401.
- Canterbury Convocation, xiii, 15.
- Cantilever bridge, viii, 313.
- Canton, view of, i, 111; riots in, viii, 128; xiii, 160.
- Cantwell, E. P. C., obit., xvi, 611.
- Cantwell, J. C., x, 400.
- Canvas, decoration with, ix, 245.
- Capalti, Cardinal, obit., ii, 596.
- Cape Colony, and South Africa, in every volume except i; map, iv, 122; view in, ii, 85; natives, illustration, 86; diamond-fields, ix, 110; x, 135; question of federation, iv, 128; Whale Bay annexed, v, 79; wars in, see Caffre War, Basutos, Bechuanaland, Boers, Transvaal, and Zulus, xiii, 122; xiv, 102; xv, 92; xvi, 101; xvii, 74; xviii, 120. See Cape of Good Hope.
- Cape Horn, view of, iii, 12.
- Cape of Good Hope, x, 134; xi, 133; observatory at, ix, 47, 53; diamonds at, x, 135; forests, x, 135; forests, x, 135; xii, 91; annexation of Zululand and disfranchisement of natives, xii, 92. See Cape Colony.
- Cape Robert Lincoln, ix, 34.
- Cape Sabine, an island, ix, 36.
- Cape Town, view of, ii, 85.
- Capello, B., explorations by, iv, 405; v, 293.
- Capello, Hermenegildo, x, 394.
- Capen, Francis L., sketch, xiv, 623.
- Capen, Nahum, obit., xi, 667.
- Caperton, A. T., sketch, i, 28.
- Capital cases, appeal in, xiv, 229.
- Capital punishment, abolition of, i, 420; crime before and after, in the Netherlands, vi, 627; commission on mode of, xii, 548.
- Capitol at Washington, illustration, i, 784.
- Cappa, Carlo A., obit., xviii, 544.
- Capponi, Marquis, sketch, i, 88.
- Capriles, Señor, x, 140, 141.
- Capron, S. M., obit., iii, 634.
- Carboazotine, x, 143.
- Carbolic acid, test for, iii, 92; poisoning by, viii, 752.
- Carbon, water on alloys containing, iii, 91; in iron, vi, 97; saturation capacity of, ix, 424; study of compounds of, x, 148, 149.
- Carbon bisulphuret, new compounds, iii, 84.
- Carbon disulphide, v, 88.
- Carbon sulphobromide, vii, 88.
- Carbonate mines, xvii, 772.
- Carbonate of potash, new process, x, 154.
- Carbonate of soda, process for extracting, xii, 108.
- Carbondale, Pa., xviii, 155.
- Carbonic acid, in the air, viii, 120.
- Carbonic oxide, experiments on, xii, 108.
- Car-building, xiii, 128.
- Cardinals, creation of, i, 703; iv, 773; vii, 724; the first American, x, 563.
- Cardozo, L. F., sentence and pardon of, iv, 820.
- Cardozo, T. W., impeachment, i, 561.
- Cardwell, Edward, obit., xi, 712.
- Carey, A. D., xii, 310.
- Carey, H. C., obit., iv, 129.
- Carey, J. M., renominated, xiii, 849.
- Carey, murder of, viii, 416.
- Carillon chimes, x, 611.
- Carinthia, archæologic discovery in, ix, 23.
- Carl Anton, Prince, obit., x, 658.
- Carl, King of Wurtemberg, obit., xvi, 667.
- Carl, Prince, obit., viii, 598.
- Carle, James, obit., xvii, 539.
- Carlen, E. F., obit., xvii, 587.
- Carles, W. R., x, 397.
- Carlie, John S., obit., iii, 634.
- Carlin, John, obit., xvi, 611.
- Carlisle, James M., obit., ii, 576.
- Carlisle, John Griffin, Speaker, sketch and port., viii, 93; sketch and port., xviii, 734.
- Carlisle, Pa., xviii, 155.
- Carlisle War, the, x, 656.
- Carlisle, War, close of the, i, 261, 728; party, v, 673.
- Carl, David, sketch, xiii, 626.
- Carlyle, Thomas, letter on the Eastern question, ii, 365; sketch, vi, 89.
- Carmichael, Dr., experiments by, ix, 728, 729.
- Carnarvon, Earl of, x, 419, 455; portrait, x, 451; sketch, 449; obit., xv, 675.
- Carné, Count de, sketch, i, 88.
- Carnegie, Andrew, quoted, xi, 367.
- Carnelly, T., discoveries by, vi, 405; ix, 119; xii, 100, 111.
- Carney, Thomas, sketch, xiii, 626.
- Carnochan, John M., obit., xii, 575.
- Carnot, Lazare H., sketch, xiii, 660.
- Carnot, Marie François Sadi, v, 281; sketch and portrait, xii, 93, 289, 297.
- Caro, Elme Marie, obit., xii, 625.
- Caroline, Duchess, obit., i, 630.
- Caroline Islands, x, 138; map, x, 139; gateway on Strong's Island, illustration, x, 141; the King's house, illustration, x, 143; discovery of, x, 138; Spanish claim to, x, 140; German flag planted, x, 141; diplomatic correspondence, x, 142; ruins in, x, 140; mediation by the Pope, x, 144; rebellion, xii, 741.
- Caroline, Queen, obit., vi, 691.
- Caron, A. P., knighted, x, 129.



- Caron, R. E., obit., i, 630.  
 Carpender, E. W., obit., ii, 576.  
 Carpenter, Henry, obit., xii, 575.  
 Carpenter, Lant, x, 144.  
 Carpenter, Mary, obit., ii, 596.  
 Carpenter, M. H., sketch, vi, 91.  
 Carpenter, Philo, obit., xi, 668.  
 Carpenter, W. B., sketch, x, 144; portrait, 145.  
 Carpets, viii, 94; wools, 96.  
 Carr, Comyns, x, 347.  
 Carr, E. L., nominated, xiii, 594.  
 Carré, M., invention by, iii, 270.  
 Carrière, J., obit., xviii, 577.  
 Carriers, common, xviii, 221.  
 Carriers, mechanical, illustrated, xii, 94.  
 Carrington, Col., engagement with Basutos, v, 81, 82.  
 Carroll, J. W. H., obit., xvi, 611.  
 Carroll, Samuel S., obit., xviii, 544.  
 Carruthers, R., obit., iii, 652.  
 Carruthers, William, xi, 48.  
 Carskadon, T. R., nominated, xiii, 842.  
 Carson City, Nev., xvi, 151.  
 Carter, B., on eye-sight, vi, 272.  
 Carter, H. A. P., obit., xvi, 667.  
 Carter, Sir J., obit., iii, 652.  
 Carter, Oscar C. S., x, 158.  
 Carter, Robert, sketch, xiv, 623.  
 Carter, Samuel P., obit., xvi, 611.  
 Carter, T. H., nominated, xiii, 569.  
 Carteret, Antoine, sketch, xiv, 659.  
 Carthage, Mo., xv, 121.  
 Cartter, David Kellogg, obit., xii, 575.  
 Carvalho, H. de, xi, 371.  
 Cary, J. C., obit., ix, 604.  
 Casa Grande, xiv, 17.  
 Casamajor, P., experiments by, vi, 352; viii, 12.  
 Casamicciola destroyed, viii, 285.  
 Casanova, Antonio, xi, 343.  
 Casanova, Ricardo, Archbishop, expulsion of, from Guatemala, xii, 347.  
 Casati, Capt., x, 394.  
 Case, Augusta L., obit., xviii, 545.  
 Caselli, invention by, vi, 256.  
 Casey, T. L., ix, 798.  
 Cash's experiments, vi, 750, 753.  
 Cashgar, illustration, i, 776. See Kashgaria.  
 Cashmore, Maharajah of, obit., x, 658; xiv, 428.  
 Casilear, John W., obit., xviii, 545.  
 Casperi, K. P., obit., xvii, 587.  
 Cass, George W., sketch, xiii, 626.  
 Cassagnac, Paul de, trial for violation of press laws, ii, 305.  
 Casserly, Eugene, obit., viii, 587.  
 Cassidy, G. W., obit., xvii, 539.  
 Cassidy, Lewis C., sketch, xiv, 623.  
 Castelar, Emilio, ix, 742, 743.  
 Castella, Gen., obit., x, 658.  
 Castellani, A., obit., viii, 598.  
 Castelnau, A., obit., ii, 596.  
 Castillo, Lieut. del, xii, 315.  
 Cast-iron, sea-water on, vi, 97.  
 Castle government, ix, 376.  
 Castle, Orlando L., obit., xvii, 539.  
 Castles on the Bosphorus, illustration, i, 762.  
 Castner, Hamilton Y., xi, 536.  
 Castro, Manuel, obit., xvi, 612.  
 Caswell, A., D. D., obit., ii, 577.  
 Catacazy, M., xiii, 269.  
 Catacombs of Paris, illustration, i, 316; of Thebes, illustration, iii, 267.  
 Catalogues of stars, xiii, 56.  
 Catalyst, function of a, x, 148.  
 Catamaran, ix, 115; x, 793.  
 Catania, cyclone in, ix, 416.  
 Cataracts, in Africa, ii, 331.  
 Caterini, P., Cardinal, obit., vi, 692.  
 Cathartic acid, x, 299.  
 Cathcart, C. W., sketch, xiii, 627.  
 Cathedral, a floating, viii, 67.  
 Catholicism. See Roman Catholic Church.  
 Catholicos, election of a, ix, 280, 763.  
 Catholic summer school, xviii, 674.  
 Catskill Mountains, height of, ix, 538.  
 Cattegat and Skager-Rack, annual loss of life in, x, 417.  
 Cattle-plague, vii, 486; ix, 706.  
 Cattle diseases, xiii, 586.  
 Cattle guards, xvi, 707.  
 Cattle, improved breeds, xiv, 112; inspection, xvi, 227.  
 Cattle-raising in Arizona, xviii, 20.  
 Caucasus, exploration in the, xii, 313.  
 Cauchy, E., obit., ii, 586.  
 Cauer, Carl, obit., x, 658.  
 Cavagnari, L., iv, 10, 11, 13, 491.  
 Cave-drawings, xiv, 117.  
 Cave-dwellings, Buddhist, x, 38; Mexican, ix, 17; African, ix, 347.  
 Cavendish, F. C., obit., vii, 645. See Phoenix Park Murders.  
 Caventou, J. B., obit., ii, 596.  
 Caves in Austria, discovery of, xii, 313.  
 Caves of the troglodytes, xiii, 33.  
 Cavour, Count, on the Roman question, vii, 627.  
 Cazauran, A. R., sketch, xiv, 623.  
 Cazot, T. J. J., sketch, iv, 386.  
 Ceará Breakwater, xii, 260; illustrations, 260.  
 Cecil, Lord Robert. See Salisbury.  
 Cecil, Lord, sketch, xiv, 659.  
 Cedar Creek, battle of, x, 428.  
 Cedar Rapids, xv, 122.  
 Celernius Vitalis, inscription by, ix, 22.  
 Celibacy, priestly, abolished by Old Catholics, iii, 669.  
 Cellier, A., obit., xvi, 668.  
 Celluloid, iii, 459.  
 Cellulose, production of, i, 97.  
 Celtic earthworks, xiii, 24.  
 Cemeteries, bill in Chili to secularize, viii, 122; early Christian, at Alexandria, xii, 21. See Burials.  
 Censorship of the press, ix, 708.  
 Census of the United States, v, 83; vi, 848; with maps, showing density of population, and of foreign and colored population, vii, 815; of 1890, xiv, 214, 806; xv, 821; xvi, 840; xvii, 759. And see the articles on the States in vol. xv.  
 Centaurs, peculiar representations of, ix, 25.  
 Centennial Exposition: centennial celebrations, xiii, 670. See Exhibition, Centennial.  
 Central America, i, 89; v, 85; hidden tribes in, v, 298; proposed union, viii, 97; union decree, x, 464; xii, 348; union movement, xiii, 255; xiv, 610.  
 Central America, loss of the, xi, 44.  
 Cephissus, discoveries at, xiii, 26.  
 Ceramic wares, v, 91.  
 Cereals, United States, production, vii, 85; commerce in, vii, 112.  
 Cerebral hemispheres, lesions of, ix, 661.  
 Cerebral localization, vii, 688; viii, 98.  
 Cerebrum, effects of extirpation of, in rabbits, ix, 653.  
 Cerigo, temple at, xiii, 27.  
 Cernagora, viii, 549.  
 Cerruti, Signor, xi, 192, 455.  
 Cervical ganglion, function of, xii, 671.  
 Cesnola, Count di, explorations of, i, 28, 31.  
 Cctewayo, King, iv, 121; restoration of, vii, 85; portrait, *ibid.*; defeat, viii, 91; ix, 114; x, 136; obit., ix, 615.  
 Ceylon, xv, 404; xvi, 343; xvii, 325.  
 Cézaune, E., obit., i, 630.  
 Chacornac, Mr., xi, 56.  
 Chadbourn, Paul A., sketch, with portrait, viii, 102.  
 Chadhelism, x, 316.  
 Chadwick, Sir E., obit., xv, 676.  
 Chaffanjon, M., xii, 314.  
 Chaffee, Jerome B., obit., xi, 668.  
 Chain, elastic, xvi, 705.  
 Chaix d'Est Ange, G. L. V. A. C., sketch, i, 89.  
 Chaka, first king of the Zulus, iv, 352.  
 Chalchualpa, engagement at, x, 466.  
 Chaldean cylinder, xiv, 23.  
 Chaletenango, capture of, x, 467.  
 Challen, J., obit., iii, 634.  
 Chalmers, explorations, v, 135.  
 Chalybeate springs, x, 579.  
 Cham (A. de Noé), obit., iv, 698.  
 Chamber of Commerce, Cincinnati, view of, xiv, 674.  
 Chamberlain, D. H., claim as Governor of South Carolina, i, 725.  
 Chamberlain, Joseph, sketch, v, 85; xi, 399, 400, 401.  
 Chamberlain, J. A. D., observations by, vi, 401.  
 Chamberlain, J. P., obit., iii, 634.  
 Chamberlain, Sir N., iii, 4.  
 Chamberlain, N. B., obit., iii, 634.  
 Chamberlin, Edwin M., obit., xvii, 539.  
 Chamberlin, T. C., x, 404.  
 Chambers, M., obit., v, 591.  
 Chambers, William, sketch, viii, 103.  
 Chambers, W. H., obit., vi, 679.  
 Chambord, Count de, speech of, ii, 205; celebration, iv, 394; sketch, with portrait, viii, 103.  
 Chamois, illustration, i, 739.  
 Chamond, C., invention, i, 519.  
 Champerico, growth of, viii, 427.  
 Champfleury, sketch, xiv, 659.  
 Champion Hill, battle of, x, 425.  
 Chance, experiments by, viii, 115.  
 Chancellorsville, battle of, xi, 416.  
 Chandler, J. R., obit., v, 591.  
 Chandler, P. W., sketch, xiv, 623.  
 Chandler, Ralph, sketch, xiv, 623.  
 Chandler, S. C., Jr., observations by, iii, 37, 38; vii, 38; ix, 54; x, 55; xii, 35.  
 Chandler, William E., portrait, vii, 809.  
 Chandler, Zachariah, sketch, iv, 129.  
 Changarnier, Gen., obit., ii, 596.

- Channing, W. H., obit., ix, 604.  
 Chanute, O., xi, 46.  
 Chanzy, A. E. A., sketch, with portrait, viii, 107.  
 Chapin, Aaron Lucius, obit., xvii, 539.  
 Chapin, Dorcas, obit., xi, 668.  
 Chapin, Edwin H., sketch, v, 85.  
 Chapin, H., obit., iii, 634.  
 Chapin, John H., obit., xvii, 539.  
 Chaple y del Corral, J. F., obit., xi, 712.  
 Chaplin, Jeremiah, obit., xi, 668.  
 Chapman, Frederick, obit., xvi, 612.  
 Chapman, Henry, obit., xvi, 612.  
 Chapman, J. G., sketch, xiv, 624.  
 Chapman, O. W., obit., xv, 639.  
 Chapu, H. M. A., obit., xvi, 668.  
 Char Aimak, or Four Tribes, x, 8.  
 Charcot, J. M., obit., xviii, 577.  
 Chareton, J. J. V. de, obit., iii, 652.  
 Charities, report on, in Massachusetts, ii, 486; in New York, iv, 672; organization, x, 145; xiii, 134; in Japan, xviii, 417; street beggars, x, 148.  
 Charkhi, Gen., xiii, 6.  
 Charles I, Prince of Roumania, iii, 739; sketch, ii, 87.  
 Charles II, of Parma, obit., viii, 598.  
 Charles of Hesse, obit., ii, 596.  
 Charleston, S. C., view of, i, 723; x, 737; xi, 163; earthquake in, xi, 300; xiv, 142.  
 Charlottesville, xv, 122.  
 Charlottetown, xiv, 143.  
 Charnay, D., explorations by, v, 298; vii, 337.  
 Charpentier, L. E., obit., xv, 676.  
 Charrier, Henri, xi, 343.  
 Chase, Benjamin, sketch, xiv, 624.  
 Chase, Harry, prize to, x, 367.  
 Chase, N., obit., xv, 639.  
 Chase, Pliny Earle, obit., xi, 668; observations by, iii, 39.  
 Chase, Thomas, obit., xvii, 539.  
 Chasles, M., obit., v, 599.  
 Châteauvillain, affair at, xi, 358.  
 Chatham, new docks at, illustration, i, 364.  
 Chatrian, A., obit., xv, 676.  
 Chattanooga, battle of, x, 426; xiii, 160.  
 Chatterton, S. S., obit., i, 614.  
 Chaul Mong, King of Anam, x, 32.  
 Chavannes, Puvis de, ix, 245; x, 358; xi, 275, 279, 343.  
 Chaveau, P. J. O., obit., xv, 676.  
 Chavée, H. J., obit., ii, 597.  
 Chazal, Baron E., obit., xvii, 588.  
 Cheatham, B. F., obit., xi, 668.  
 Cheese-poisoning, xii, 106.  
 Cheever, B. W., sketch, xiii, 626.  
 Cheever, G. B., obit., xv, 639.  
 Cheflin, C. V., i, 322.  
 Cheik Said, bought by Germany, ix, 365.  
 Chelius, M. J., sketch, i, 89.  
 Chelmsford, Baron, obit., iii, 652.  
 Chelsea, xi, 163.  
 Chemical processes, new, vi, 94; viii, 11; x, 152; xii, 106; analysis of foods, viii, 34; nomenclature and philosophy, viii, 110; ix, 118; x, 148; xi, 141; new substances, ix, 425, 808-809; x, 153; xii, 104.  
 Chemistry, industrial, analytic, synthetic, vegetable, etc., development and prospects, in every volume.  
 Chemists, association of official, ix, 130; eminent, xi, 136-148.  
 Chenery, T., obit., ix, 615.  
 Cheney, Margaret S., experiments by, ii, 502.  
 Cheney, Person C., i, 588, 589.  
 Cheney, Ward, obit., i, 614.  
 Chenu, J. C., obit., iv, 698.  
 Cherau, capture of, x, 429.  
 Chernoff, M. D., ix, 473.  
 Cherokee outlet, xv, 697.  
 Chesapeake and Delaware Canal, xvii, 225.  
 Chesapeake and Ohio Canal, xiii, 516; xiv, 532; xvi, 494.  
 Chesbrough, Ellis Sylvester, obit., xi, 669.  
 Chesney, Col. Charles C., obit., i, 630.  
 Chester, Albert T., obit., xvii, 540.  
 Chester, T. Morris, obit., xvii, 540.  
 Chesterhope, Roman building in, ix, 22.  
 Chetwood, George R., obit., xii, 575.  
 Chevalier, M., sketch, iv, 137.  
 Chevreul, Michel Eugène, sketch and port., xiv, 134.  
 Cheyenne, xiii, 161; State House at, illustration, 848.  
 Chicago, xi, 163; xviii, 398; Anarchist riots in, xi, 12; before the fire, illustration, i, 392; xiv, 419.  
 Chicago "Times," the, ix, 612.  
 Chickamauga, xviii, 425.  
 Chickering, Charles F., obit., xvi, 612.  
 Chicopee, Mass., xii, 120.  
 Chidlaw, B. W., obit., xvii, 540.  
 Chigi, Cardinal, death of, x, 713.  
 Chihuahua cathedral, xvi, 523.  
 Chilcott, G. M., sketch, vii, 109; obit., xvi, 612.  
 Child, Lydia M., sketch, v, 96.  
 Child, T., obit., xvii, 588.  
 Childers, H. C. E., sketch, v, 97; x, 446.  
 Childers, R. C., obit., i, 630.  
 Children, labor of, i, 510; iii, 524; iv, 659; vi, 575; ix, 571.  
 Childs, C. C., obit., xv, 640.  
 Chili, statistics, government, etc., in every volume; map, iv, 139; guano in, i, 104; mining industries, iii, 95; view in, ii, 99; navigation law, iii, 95; conflict between church and state, iii, 96; Patagonian dispute with Argentine Republic, iii, 96; iv, 139; commercial relations with U. S., vi, 103; Peruvian bonds, vi, 104; the Araucanians, vii, 99; new pass over the Andes, discovered, viii, 123; new provinces in, ix, 130; xii, 315; government of, 131; great guano consignment, x, 164; nitrate-of-soda production, x, 164; claims against, x, 164; attempt on the President's life, x, 165; civil-marriage law in, x, 164; condors in, x, 165; contract with Peru, xii, 114; boundary treaty with Argentine Republic, xviii, 16; treaty with Bolivia, xviii, 96.  
 Chilean Claims Commission, xviii, 144.  
 Chilean War, the, iv, 727; v, 98, 625; vi, 734, 737, 738; vii, 681; inquiry as to U. S. action, vii, 698; viii, 158; terms of treaty, viii, 121; peace, viii, 64; ix, 649; President Arthur on, viii, 64; the guano contracts, viii, 628; x, 164; American trade commission, x, 164.  
 Chillicothe, Ohio, xvii, 109.  
 Chimborazo, ascent of, ix, 541; view of, i, 241.  
 Chimes, mechanical, x, 611.  
 Chimney, high, repairing a, xv, 286.  
 China, in every volume; map of Cochin-China, i, 109; maps, i, 109; great wall of, illustration, ii, 103; ix, 141; Margary murder, i, 107; views in, illustrations, i, 110, 111; ii, 100, 101, 103; iii, 98, 100; iv, 146; ix, 139, 142; dispute with Germany, i, 109; trouble with Portugal, i, 109; v, 103; treaty with Portugal, xii, 117; with Kashgaria, i, 109; iii, 96; see Kashgaria; rebellion, i, 110; iv, 145; attacks on Christians, i, 110; iii, 101; xi, 155; new policy toward them, xii, 117; new ports opened to commerce, i, 110; ii, 102; first line of railroad in, i, 3; ii, 102; famine, ii, 100; iii, 98; religious war in, ii, 101; attempt to convert Mohammedans, iv, 146; troubles with Russia, iii, 97; iv, 144; v, 101; vi, 107; ix, 714; negotiations with, xii, 118; opium trade, iii, 109; vi, 109; x, 174; first steam cotton-mill, iv, 143; diamonds in, iv, 143; insurrection, iii, 101; iv, 143, 144; restoration of Kulja, iv, 144; v, 101; vi, 107; diplomatic service, iv, 46; statistics of missions in, iv, 147; x, 169; trouble with Spain, v, 103; relations with other powers, v, 104; treaties with United States, v, 105; death of the regent, vi, 107; riots in Canton, viii, 128; floods, viii, 128; political crisis, ix, 137; British occupation of Port Hamilton, xi, 155; xii, 118; war with France, ix, 137; x, 170; see also Tonquin; treaties with France, xi, 154; xii, 117; representation at the Vatican, xi, 154; gold-mines, x, 169; newspapers, x, 169; suzerainty over Indian states, xii, 383; anti-foreign movement in, xviii, 149.  
 China Merchants' Steam Navigation Company, vii, 101.  
 Chincha islands, ill., i, 662.  
 Chinese, the, in United States: in California, i, 84; ii, 80; iii, 71, 74, 76; iv, 107; v, 71, 73, 78; viii, 78; ix, 195; xi, 126; riot against, in Colorado, v, 120; in Nevada, iv, 657; in Oregon, iii, 676; iv, 712; in Wyoming Territory, x, 787; in Washington Territory, xi, 836; embassy of, iii, 810; immigration to United States, vii, 387; ix, 195; transit across, vii, 391; Frelinghuysen's letter, vii, 192; alleged letter of Garfield, v, 576; letter of G. F. Seward, i, 231; citizenship question, ix, 427, 762; x, 787; President's message on, xi, 254; ex-



- cluded from Ecuador, xiv, 281; expulsion act of the United States, xviii, 739.
- Chinese, the, troubles with Russia, Portugal, and Spain, v, 101; threatened war with Russia, vi, 107; ix, 714; anti-European riots, viii, 128; superstition of, vii, 101; in Brazil, vii, 70; Cuba, iv, 822; in Australia, ii, 51; v, 37; in British Columbia, x, 104; in Tonquin, x, 24; excluded from Costa Rica, xii, 211; from Colombia, xii, 140.
- Chinese exclusion, xvii, 192; xviii, 244.
- Chinese flower-boat, illustration, i, 110.
- Chinese fort, illustration, ix, 139.
- Chinese indemnity fund, x, 241.
- Chinese labor and immigration, xii, 62, 119, 156, 226, 838.
- Chin expedition, the, xiv, 430.
- Chiniquy, Father, ix, 676.
- Chipman, John L., obit., xviii, 545.
- Chippewa Falls, Wis., xvi, 151.
- Chisholm, Judge, murder of, by a mob, ii, 528.
- Chisholm, Mrs. C., obit., ii, 597.
- Chisholm, W. S., obit., xv, 640.
- Chittenden, R. H., investigations by, v, 92; vi, 95; vii, 90, 690; viii, 119, 635; ix, 694; xii, 675.
- Chittenden, S. B., sketch, xiv, 624.
- Chlorates, improvement in manufacture of, vii, 95.
- Chlorine, in water, i, 99.
- Chloroform, xii, 106.
- Chlorohydric acid, i, 100.
- Chlorophyl, physiological function of, vi, 110; ix, 128; x, 153.
- Chlorotribromide, xii, 769.
- Cholera, in Asia, i, 44; spread by pilgrims, iv, 494; in Egypt, viii, 298; ix, 143; in France, ix, 345; in Corea, xi, 271; in Japan, xi, 458; germs of, ix, 143, 497; epidemics of, x, 796; inoculation for, 797; in Chili, xii, 114; study of causes and treatment, xi, 156; xiii, 151, 357; in 1892, xvii, 95. See also Epidemic Diseases, vii, 286; viii, 317; Zymotic Diseases, x, 796, *et seq.*, and Micro-organisms.
- Cholesterin, xii, 108.
- Choline, x, 299.
- Cholula, mound of, ill., ix, 17.
- Chopin, xi, 481.
- Choppin, S. P., sketch, v, 106.
- Cho-Sen. See Corea.
- Choubly, Mr., experiments by, xi, 534.
- Chouteau, B., sketch, xiii, 626.
- Chretien, C. P., obit., xviii, 577.
- Christian Churches, xii, 118; xv, 116.
- Christian Connection, i, 113; ii, 103; iii, 101; vii, 102; xi, 158; xv, 116.
- Christian IX of Denmark, iv, 311.
- Christian IX Land, x, 398.
- Christian Union, i, 113; iii, 102.
- Christian, William Henry, obit., xii, 575.
- Christianity, I. P., obit., xv, 640.
- Christian Endeavor, xv, 116; xvi, 145; xvii, 100; xviii, 150.
- Christiani, experiments by, ix, 653.
- Christianity, growth of, viii, 128; introduction of, commemorated, xiii, 728; Society for Promoting, 709.
- Christians, massacre of, in Tonquin, x, 31; persecution in China, i, 110; iii, 101; xi, 156.
- Christianstad, illustration, i, 737.
- Christides, obit., ii, 597.
- Christie, Daniel M., obit., ii, 577.
- Christie, Samuel T., obit., i, 630.
- Christie, W. H. M., observations by, vii, 33; viii, 26.
- Christina Maria, dowager-Queen of Spain, iii, 102.
- Christman, J. A., sketch, xiii, 627.
- Christophe, Ernest, obit., xvii, 588.
- Chromium compounds, iii, 85.
- Chronology, prehistoric, xii, 14.
- Chrysophan, xi, 290.
- Chrystal, G., x, 46.
- Chubb, T., obit., xv, 640.
- Chufas, iii, 472.
- Chun, Prince, x, 28; obit., xvi, 668.
- Chung Kwoh. See China.
- Chunder Sen, iv, 90, 91; vi, 65.
- Church, Albert E., obit., iii, 634.
- Church Army, the, ix, 11.
- Church, Pharellus, obit., xi, 672.
- Church, R. W., obit., xv, 676.
- Church, Sanford E., death of, v, 569.
- Church Congress, xiii, 19; xiv, 14; xv, 12; xvi, 12.
- Church Union, xi, 17; English, xvi, 13.
- Church and State, relations of, ix, 13, 22; in Chili, ix, 135; x, 164; in Russia, ix, 278; in Ecuador, ix, 281; in France, x, 712; in Italy, xi, 455; xii, 399. See Disestablishment, and Anglican Churches.
- Church defense institution, xiv, 13; xviii, 13.
- Church History, American Society of, xvii, 100.
- Church of God, iii, 50; xiii, 77; xiv, 69.
- Church of Jesus, the, Mexican Protestant Episcopal, iv, 611.
- Church of Scotland, xviii, 656.
- Church, property confiscated, xiii, 831.
- Churches: burials act, see Burial; liability of property, see Bishops; church and state, ii, 21, 22; iii, 14, 96; vi, 15; vii, 13, 18; heresy trials, i, 672; ii, 648; iii, 693, 698, 700; v, 634; vi, 767, 769; Protestant Episcopal appellate court proposed, vi, 773; patronage question, vii, 19; question of union, i, 22; iii, 14; vii, 537; viii, 658; of fellowship, i, 496; vi, 521; viii, 654; proposed revision of creeds, iii, 133, 134; v, 133; vi, 135; viii, 657, 660; of the Prayer-Book, viii, 671, 672; Anglican, on confession, iii, 15; Reformed, on secret societies, viii, 682; United Presbyterian, on instrumental music, vi, 766, 769, 770; viii, 656, 660; on dancing, i, 668; iv, 734; Lutheran, on predestination, vi, 521; ritualism in Anglican, see Ritualism; use of "Rev." by dissenters, see Keet; doctrinal qualifi-
- cations for theological professorships, vii, 122; relation of Roman Catholic to European governments, see Papacy; monastery in Scotland, i, 706; decrees against religious orders, v, 628, 658; insult to Catholics in France, vii, 324; disturbances in Marseilles, iii, 349; building-fund commission, xii, 706; work in Mexico, xii, 706; documents affecting the Reformed, xii, 709; Unitarian, xii, 774; free and open, xviii, 13. See also Church and State, Disestablishment, and Germany.
- Churches in Scotland, union of, xviii, 196.
- Churches, Reformed, xviii, 665.
- Churchill, Henry A., obit., xi, 712.
- Churchill, Lord Randolph, ix, 375, portrait, x, 453; sketch, 449.
- Churchill, T. J., v, 26.
- Cialdini, Enrico, obit., xvii, 588.
- Ciamician, experiments, v, 95.
- Cibot, F. B. M. E., obit., ii, 597.
- Cider, experiments on, x, 159.
- Cigar law, tenement-house, ix, 431.
- Cilley, Joseph, obit., xii, 576.
- Cimon, wall of, x, 36.
- Cinchona-Bark, cultivation of, viii, 427; in Bolivia, xi, 91; in Colombia, vii, 105; in Ecuador, viii, 289; xii, 69, 140; discovery and name of, vii, 105; xiii, 97; xiv, 80. See also Peruvian Bark.
- Cincinnati, xi, 164; fountain at, see Kraling, i, 442; riots in, ix, 630; election, x, 204; illustrations, i, 647, 648.
- Cinematics, experiments in, i, 515.
- Ciparin, Timoteo, obit., xii, 625.
- Cipher code-system, for telegraphing astronomical discoveries, x, 55.
- Cipher telegrams, the, iii, 717.
- Cipriani, xi, 454.
- Circulation of animals, action of inorganic substances on, vi, 99; in the brain, vii, 691; contraction of the ventricle, *ibid.*; circulatory system, the, ix, 654; x, 692; xii, 673; of the blood, xiii, 691; xiv, 704; xv, 721; xviii, 627; of money in the United States, xvi, 850.
- Circumnutation, v, 107.
- Cissey, E. L. C. de, obit., vii, 645.
- Cisterns, v, 367.
- Cities, American, recent growth of, xi, 159, *et seq.*; xii, 118, *et seq.*; xiii, 158; xiv, 141; xv, 118; xvi, 145; xvii, 101; xviii, 151; statistics of, see article United States Census.
- Cities, population, i, 239; ii, 260.
- Citric acid on minerals, v, 93.
- Civilization, archaic, xiii, 25.
- Civil-rights act, vii, 459; provisions of, vii, 695; cases, vii, 102; opinions on, viii, 129.
- Civil service, instruction in languages for, ii, 368; President Hayes on, ii, 665; v, 641.
- Civil-service reform, President Arthur on, vi, 785; viii, 164; bill on, in Congress, viii, 165; text of, viii, 183; provisions of, on political assessments, vii, 695;

- see Reform, etc., viii, 682; in New York, viii, 566; ix, 690; x, 639, 759; law, xi, 474, 826; Commission, United States, xiii, 380, 772; in China, xiv, 138.
- Cladel, Leon, obit., xvii, 588.
- Claësson, experiments, viii, 112.
- Claffin, A., obit., xv, 640.
- Claffin, Horace B., obit., x, 646.
- Clague, pictures of, iv, 532.
- Clairin, George, x, 362; xii, 275.
- Clam, Count R., obit., xvi, 668.
- Clam Gallas, Count E., obit., xvi, 668.
- Clanegeran, M., x, 376.
- Clam-Martinitz, Count Heinrich, obit., xii, 626.
- Clanricarde, Harriet, Marchioness of, obit., i, 631.
- Clanricarde, Lord, xii, 339.
- Clapp, Asa W. H., obit., xvi, 612.
- Clapp-Griffiths steel process, x, 574.
- Clapp, William W., obit., xvi, 612.
- Clarendon, Earl of, x, 2.
- Clarinet Player, x, 613.
- Clark, cotton-cleaner of, vi, 265.
- Clark, Alexander, obit., xvi, 612.
- Clark, Alvan, sketch and portrait, xii, 137.
- Clark, Alvan, Jr., ix, 53; x, 52, 54.
- Clark, Sir Andrew, obit., xviii, 577.
- Clark, Charles B., obit., xvi, 613.
- Clark, Daniel, obit., xvi, 613.
- Clark, J. W., invention by, x, 583.
- Clark, Myron Holley, obit., xvii, 540.
- Clark, Patriek, obit., xii, 576.
- Clark, Rufus W., obit., xi, 670.
- Clark, Sarah, obit., vi, 680.
- Clark, Silas M., obit., xvi, 613.
- Clark, Simon T., obit., xvi, 613.
- Clark, Thomas, obit., i, 631.
- Clark, Walter, ix, 653.
- Clark, William Audley, obit., xii, 576.
- Clark, William S., obit., xi, 670.
- Clarke, C. Cowden, obit., ii, 597.
- Clarke, Col., in Basutoland, x, 84.
- Clarke, Edward H., obit., ii, 577.
- Clarke, F. W., investigations by, vi, 42; vii, 89; x, 149, 404.
- Clarke, J. F., sketch, xiii, 627.
- Clarke, Joseph T., ix, 25.
- Clarke, W. A., nominated, xiii, 569.
- Clarke, William T., obit., viii, 587.
- Clarkson, R. H., obit., ix, 604.
- Clarksville, xi, 165.
- Claude, sale of works of, x, 361.
- Cloughton, T. L., obit., xvii, 588.
- Clausen, H. N., obit., ii, 597.
- Clay, Clement C., sketch, vii, 102.
- Clay, Henry, his public policy, x, 433.
- Clay and Randolph case, vii, 198.
- Clayden, A. W., xi, 542.
- Claypole, observations by, v, 36.
- Clayton-Bulwer Treaty, vii, 813; viii, 278. See Panama Canal, vi, 714.
- Clayton, John M., sketch, xiv, 624; assassination of, xiv, 36; xv, 23.
- Clearing-houses. See Finances and Financial Review.
- Clemendot, M., ix, 472.
- Clemencau, M., ix, 344; x, 375.
- Clements, invention, iv, 638.
- Clemmer, Mary, obit., ix, 604.
- Cleopatra's Needle, iii, 283; vi, 659.
- Clerical laws in Prussia, v, 639.
- Clésinger, J. B. A., obit., viii, 598.
- Clesse, Antoine, sketch, xiv, 659.
- Cléve, discovery by, iv, 137; experiments, viii, 117; x, 156.
- Cleveland, xiv, 143.
- Cleveland, Ohio, xi, 165.
- Cleveland, Chauncey Fitch, obit., xii, 576.
- Cleveland, E. H., obit., iii, 634.
- Cleveland, Grover, sketch and portrait, vii, 611; ix, 145; steel portrait, ix, front; letters of acceptance, vii, 610; ix, 148; letter on the silver question, x, 755; messages, xi, 211, and xii, 153. See Congress and United States.
- Cleveland, J. F., obit., i, 614.
- Cleveland, Moses, statue of, xii, 280.
- Clifford, Sir A., obit., ii, 597.
- Clifford, J. H., sketch, i, 114.
- Clifford, Nathan, sketch, vi, 111.
- Climate, influence of forests on, xi, 544.
- Climatic changes, xv, 539.
- Clinch, C. P., obit., v, 591.
- Clinchant, Gen., obit., vi, 692.
- Clinton, A., obit., iii, 634.
- Clinton, Iowa, xvii, 110.
- Clinton, J. J., sketch, vi, 112.
- Clinton, Mo., xv, 123.
- Cloez, Prof., experiments, iii, 91.
- Closson, M., process for obtaining magnesia, vi, 94.
- Clothes-line prop, xvi, 705.
- Clothing materials, improved preparation of, v, 89.
- Clôtne, the, vii, 203, 364; Gladstone's resolutions, vii, 206; in France, vii, 208.
- Clouds, genesis of, see Fogs and Clouds, v, 275; height of, x, 583; observations on, xi, 542; nomenclature and iridescence of, xii, 489; auroral, xii, 490; distribution, motion, and height of, xii, 490; xiii, 532; xiv, 546; xv, 534; xvii, 449.
- Cloué, Vice-Admiral, v, 281.
- Clough, Anne J., obit., xvii, 588.
- Clubs, prominent, of England, France, and America, ix, 150.
- Coal, ii, 103; spontaneous combustion of, i, 93; in China, iii, 101; monopoly, iii, 619; commerce in, iv, 173; mining with canstic lime, vii, 104; bituminous, in United States, vii, 103; in Canada, xviii, 266; in Missouri, xviii, 498; in Colorado, ix, 159; Alabama, ix, 7; in Mexico, ix, 493; in Washington Territory, x, 780; in Asia, xi, 374; discovered in Colombia, xii, 140; palace, xv, 140. See articles on the coal-producing States.
- Coal-gas, injury to books by, v, 87.
- Coal-strike, xviii, 328.
- Coal-tar colors, x, 158.
- Coan, Titus, obit., viii, 588; ix, 275, 389.
- Coango River, exploration, v, 294.
- Coanza River, exploration, v, 294.
- Coast survey, xvi, 831.
- Coates, Benjamin, obit., xii, 577.
- Coates, Reynall, obit., xi, 671.
- Cobalt, magnetic, i, 250; bronze, ix, 478.
- Cobb, Carlos, obit., ii, 577.
- Cobb, Rufus W., ix, 16.
- Cobb, Stephen A., obit., iii, 634.
- Cobb, Sylvanus, Jr., obit., xii, 577.
- Cobbett, J. M., obit., ii, 597.
- Cobden, Mrs., obit., ii, 597.
- Coburn, J., obit., xv, 640.
- Coca-leaf, xi, 91, 752.
- Cocaine, hydrochlorate of, ix, 271.
- "Cocarde" forgeries, the, xviii, 323.
- Cochery, L. A., sketch, iv, 386.
- Cochin-China, insurrection in, x, 119; the French in, xii, 306; xv, 334.
- Cochita, ruins at, xiv, 18.
- Cockburn, Lord, v, 112.
- Coeke, William Archer, sketch, i, 298.
- Cockshott and Jowett, alloy produced by, viii, 525.
- Cocoa, xii, 231; in Ecuador, viii, 289; xiii, 287.
- Cocaine, ix, 271.
- Cocoa-matting, viii, 97.
- Codeine, experiments with, vii, 87.
- Codrus, temple of, x, 36.
- Coe, Israel, obit., xvi, 613.
- Coelho, J. M. L., obit., xvi, 668.
- Coercion bills, Gladstone's, vii, 204; act passed, xii, 343. See Ireland.
- Cœur d'Alene, desire of Montana to annex, xi, 577.
- Coffee, increasing demand, i, 80; adulteration, i, 96; duty on, in Austria, iii, 42; culture in Brazil, iii, 62; vi, 70; parasite of, iii, 62; rise in, viii, 71; making, illustration, xii, 651; plantation, a large, xiv, 409; plantations, xvii, 330; planting, xiii, 254.
- Coffin, J. H. C., obit. and port., xv, 640.
- Coffin, Levi, obit., ii, 577.
- Coffin, Robert Barry, obit., xi, 671.
- Coffin, Roland F., sketch, xiii, 627.
- Coffin, W. R., xi, 346.
- Cogalniceanu, M., obit., xvi, 668.
- Coggia, discoveries by, ii, 46; iii, 36; iv, 51; v, 34.
- Cogswell, Elliot C., obit., xii, 577.
- Cohen, Judith, x, 606.
- Cohoes, N. Y., xii, 120.
- Coinage, ix, 216, 782; United States, xiii, 786; xiv, 808; free, xvi, 228, 849; xvii, 757. See also Finances of U. S., x, 246.
- Coins, Anglo-Saxon, excavated in Rome, ix, 27.
- Coir, xiii, 247.
- Coit, Thomas W., obit., x, 647.
- Cojutepec, capture of, x, 467.
- Coke, treatment of, viii, 372.
- Colahan, John B., obit., xvii, 540.
- Cola-nuts, x, 299.
- Colbert, Commander, x, 119.
- Colburn, Jeremiah, obit., xvi, 613.
- Colburn, J. E., obit., iii, 634.
- Coleheien, x, 299.
- Colecock, W. F., sketch, xiv, 624.
- Cold, artificial, v, 88; as a chemical agent, v, 93.
- Cold Harbor, battle of, x, 427.
- Cole, Henrietta H., xii, 650.
- Cole, Joseph F., obit., xvii, 540.
- Cole, Vicat, obit., xviii, 577.
- Coleman, L., obit., vii, 635.
- Coleman, W. T., obit., xviii, 545.
- Colenso, J. W., sketch, viii, 135.
- Coleridge, Sir J. T., sketch, i, 114.
- Coles, A., obit. and port., xvi, 613.
- Colet, Louise R., sketch, i, 114.



- Colfax, Schulyer, sketch, x, 175.  
 Colfax, Wash., xvi, 151.  
 Colladon, Daniel, his drill, vi, 820; obit., xviii, 577.  
 College-discipline, iv, 842.  
 Collegiate Reformed Church in New Jersey, 250th anniversary of, iii, 720.  
 Colley, the, ix, 260.  
 Colley, Sir G. P., sketch, v, 80.  
 Colliau, Victor, obit., xviii, 545.  
 Collier, John, picture by, x, 364.  
 Collier, John P., obit., viii, 598.  
 Collier, R. L., obit., xv, 641.  
 Collier, Sir Robert, obit., xi, 712.  
 Collier, T. S., obit., xviii, 545.  
 Collin, Edward, obit., xi, 713.  
 Collin, John F., sketch, xiv, 624.  
 Collin, Raphael, x, 358; xi, 43.  
 Collings, Jesse, xi, 399-401.  
 Collins, Charles S., obit. and port., xiv, 624.  
 Collins, E. K., obit., iii, 634.  
 Collins, Frauees, obit., xi, 713.  
 Collins, Frederick, obit., xvii, 540.  
 Collins, Jennie, obit., xii, 577.  
 Collins, Mortimer, sketch, i, 114.  
 Collins, Rebecca, obit., xvii, 540.  
 Collins, R. H., sketch, xiii, 628.  
 Collins, T. W., sketch, iv, 147.  
 Collins, W. W., obit. and port., xiv, 163.  
 Collisions, marine, viii, 136.  
 Colomb, Gen., obit., xi, 713.  
 Colombia, statistics, government, improvements, etc., in every volume; map, iii, 106; views in, i, 115; ii, 107; revolutionary outbreaks, i, 118; ii, 108; iv, 149; v, 116; ix, 156; x, 179; xi, 192; boundary dispute with Costa Rica, v, 113; xi, 192; steamship lines, vi, 116; railways, vi, 116; vii, 106; ix, 155; x, 179; quinine product, vii, 105; newspapers, ix, 153; alcohol monopoly, xi, 190; description of Bogotá, xi, 192; discovery of coal and phosphates, xii, 140; emerald-mines, x, 179; diseases, xii, 140; English in, xii, 140; Panama Canal, see Panama.  
 Colon-Aspinwall, burned, x, 179.  
 Colonia powder, x, 345.  
 Colonial extension, movement for, of European nations, viii, 31.  
 Colonies, British, viii, 405; table of, ix, 381; x, 460; federation of, ix, 380, 381; x, 57; Portuguese, viii, 650; French and English government of, ii, 14; Bismarck's theory of, x, 143; French, xi, 360.  
 Colonization, xiii, 255; German, 127.  
 Colorado, admitted as a State, i, 118, constitution, i, 118, *et seq.*; mines of, i, 121; iii, 112; iv, 154; v, 119; viii, 143; irrigation, iii, 111; iv, 151; ix, 158; xii, 142; mineral springs, iii, 114; Indians in, iv, 150; v, 116; vi, 117; outbreak of Utes, xii, 143; suffrage question, iv, 152, 153; growth of Leadville, iv, 156, 161; railroad contests, iv, 153, 159; anti-Chinese riot in Denver, v, 120; coal, iron, and petroleum, vi, 118; population, xv, 152. Statistics, government, elections, etc., under Colorado in each volume.  
 Colorado River, navigation of the, xviii, 177.  
 Coloration of animals, xii, 670.  
 Color-blindness, report on, iii, 526.  
 Colored men, convention of, xiv, 533, 791.  
 Color-hearing. See Hearing.  
 Color-sensations, ix, 657.  
 Coloring principle, a new, vi, 97.  
 Colors, for cloth, v, 90; permanence of, ix, 124; of chemical compounds, ix, 119; coal-tar, x, 158; new coloring matters, xi, 189; xii, 105.  
 Colquitt, A. H., Governor of Georgia, charges against, iii, 367-369.  
 Colson and Gauthier, xii, 107.  
 Colt, John, obit., ii, 577.  
 Colton, Joseph H., obit., xviii, 545.  
 Colton, J. S., obit., iii, 635.  
 Columbia, capture of, x, 429.  
 Columbia River, improvements of, v, 614; x, 676; jetties, xvii, 255.  
 Columbia, S. C., xv, 123.  
 Columbia, Pa., xviii, 156.  
 Columbian Exposition, xvi, 836; xvii, 812; fine arts at, xviii, 312; legislation concerning the, xvii, 196.  
 Columbus Celebration, the, in New York city, xviii, 528.  
 Columbus, Christopher, canonization of, solicited, vi, 792; statue of, x, 361; remains of, buried in Genoa, xii, 217; xvii, 128.  
 Columbus, Ga., xiv, 144.  
 Columbus, Ohio, xi, 166.  
 Columbus's First Landfall, xvi, 181.  
 Colvis, Joseph, obit., xvii, 541.  
 Colyer, Vincent, sketch, xiii, 628.  
 Comber, T. J., obit., xii, 626.  
 Combes, Commandant, xi, 374.  
 Combs, L., obit., vi, 680.  
 Comegys, J. P., obit., xviii, 545.  
 Comets, in every volume, under Astronomical Progress and Discovery; origin of, iii, 36; announcements of discovery, vii, 39; ix, 51; x, 50; xi, 50; spectroscopic examination, vii, 38; periodicity, viii, 25; table of the periodic ones, x, 52. See Electricity, i, 248.  
 Comins, Linus B., obit., xvii, 541.  
 Comma-bacillus, the, ix, 143, 497; x, 797, 798.  
 Commerce, International, ii, 109; iv, 161; treaties, vii, 364, 438, 441; viii, 649.  
 Commerce of the United States, in first five volumes and vol. ix, 160; xviii, 179; and finance in 1882, vii, 110; and navigation of, ix, 161; tables of exports and imports, x, 183-189; xi, 195; xii, 143; bill on interstate, vi, 172; ix, 160; x, 181, 206; xii, 173; xiv, 170; xv, 154; xvi, 184; xvii, 158.  
 Commercial Congress, Trans-Mississippi, xvi, 180.  
 Commercial routes, map showing the great, iv, 506, 507.  
 Commercial travelers, decision concerning, xiii, 766.  
 Committees, grand, in Parliament, viii, 409.  
 Common, A., discoveries by, v, 35; vii, 37; x, 49; xi, 51, 52.  
 Common carriers, xviii, 221.  
 Commune, amnesty to, i, 315.  
 Communion, water in, xiii, 14. See Anglican Churches, i, 24.  
 Communism in Russia. See Bakunin, i, 60.  
 Compasses, xiv, 873.  
 Competitive system, the. See Civil-Service Reform.  
 Compressed air, as a motor, i, 478, 516; injuries from, vi, 753; drills, vi, 820.  
 Comstock, G. F., obit., xvii, 541.  
 Comstock mine, the, vi, 83.  
 Comstock, S. M., obit., iii, 635.  
 Conant, Thomas J., obit., xvi, 614.  
 Concord, N. H., xvi, 152.  
 Concord School of Philosophy, xiii, 11.  
 Conder, C. R., explorations of, i, 327; ix, 27; xii, 25.  
 Conder, Lieutenant, researches of, vii, 264.  
 Conder's "Basis of Faith," quoted, xiii, 7.  
 Condon, S., obit., vi, 680.  
 Condors, increase of, in Chili, declared enemies, x, 165.  
 Condurango, x, 299.  
 Conessine, xi, 290.  
 Confederate flags, order for restoration of, xii, 777.  
 Confederate monuments, iii, 372; xi, 8; xii, 9; xiii, 563; xvi, 532; xviii, 752.  
 Confederate pensions, xvi, 303; xvii, 3, 724. See Pensions.  
 Confederate soldiers, amnesty bill, i, 182; artificial limbs provided for, v, 308; claim of Mrs. Page, vi, 145; xiii, 361; home for, xvi, 535; xvii, 724.  
 Confederate States, preservation of the archives of, iii, 571; decision on bank-notes, iii, 734.  
 Confederation, a South-African, project for, i, 8.  
 Conference, International Monetary. See Bimetallic Standard.  
 Conference, International Sanitary, xviii, 349.  
 Congdon, C. T., obit., xvi, 614.  
 Conger Mountains, ix, 34.  
 Congo Arabs, war with the, xviii, 189.  
 Congo Free State, ix, 165; x, 189; xi, 202; xviii, 186; constitution of, x, 191; xiii, 182; xiv, 175; xv, 162; xvi, 193; xvii, 167.  
 Congo River, Stanley's voyage, ii, 332; his map, ii, 333; course and tributaries, iii, 363; iv, 403; explorations, vii, 336; viii, 385; x, 392; claims of Portugal, viii, 651; International Association of (and map), ix, 165; partition of the lower, x, 191; stations in the valley of, x, 192; missionaries on, x, 193; proposed railroad, x, 193.  
 Congo royal guard, ill., ii, 8.  
 Congregationalists, in every volume; fiftieth anniversary of union, vi, 136.  
 Congress of churches, xi, 208.  
 Congress of the Episcopal Church, xviii, 14.  
 Congress, National, in India, xiii, 432.  
 Congress, Sanitary, xii, 663.  
 Congress, United States, in every volume; disciplinary power, vii,

- 194; criminal jurisdiction of, vii, 196; pairing off in, vii, 199; xiii, 188; xiv, 183; xv, 169; xvi, 201; xvii, 176; contested elections in, xiii, 235; adjournment of, xviii, 246.
- Conkling, Frederick A., obit., xvi, 614.
- Conkling, Roscoe, sketch, iv, 295; resignation, vi, 644; sketch and port., xiii, 237.
- Connecticut, legislative proceedings, State officers, elections, etc., in every volume; views in, illustrations, ii, 222, 224, 225, 226; iii, 223; iv, 298; height of principal mountain points in, ii, 227; act on married women's property, ii, 223; iv, 299; breaking away of Stafford dam, ii, 227; judicial department, iii, 215; new capitol, iii, 219; iv, 297; growth of population in fifty years, vi, 198; fish-culture, viii, 255; ix, 232; statue of Gov. Buckingham, ix, 231; constitutional amendment, ix, 232; Rhode Island boundary settled, xi, 269.
- Conner, James M., obit., xii, 578.
- Connolly, Michael, obit., i, 614.
- Connolly, R. B., sketch, v, 198.
- Connor, Patrick E., obit., xvi, 614.
- Conrad, C. M., obit., iii, 635.
- Conrad, Joseph S., obit., xvi, 614.
- Conrad, T. A., obit., ii, 577.
- Conroy, G., obit., iii, 652.
- Conscience, H., obit., viii, 598.
- Consent, age of, x, 452, 453.
- Conservatism, proposed triple alliance in the interest of, v, 47.
- Considérant, V. P., obit., xviii, 577.
- Consolati, Count, obit., i, 631.
- Conspiracies in India, vi, 423.
- Constable, John, xi, 345.
- Constans, J. A. E., v, 281.
- Constant, Benjamin, pictures by, x, 359, 362; xii, 276, 343.
- Constant, Botelho B., obit., xvi, 668.
- Constantine, Algeria, ii, 14.
- Constantine, Nikolaievich, obit., xvii, 589.
- Constantinople, Russian occupation, and British fleet sent to, iii, 793; riot in, iii, 795; patriarchate of, ix, 277, 279; view of, i, 768.
- Constitutional amendments, U. S., proposed, xi, 266.
- Constitutions, national, proposed revision of French, viii, 253; new, in Guatemala, iv, 464; proposed change in Netherlands, viii, 557; proposed amendments to United States, i, 133, 138, 172, 180; vii, 462; 13th and 14th, viii, 130; ix, 226; centennial anniversary, xii, 780.
- Constitutions, State, new, in California, iv, 103; effects of, v, 77; amended, xii, 86; new, in Louisiana, v, 478; convention to frame, in Dakota, viii, 266; amended, Arkansas, iv, 25; viii, 18; Connecticut, vi, 196; ix, 232; Delaware, viii, 272; xii, 221; Georgia, ii, 338; Indiana, ii, 395; iv, 490; v, 393; vi, 425; viii, 444; Iowa, v, 396; vi, 439; vii, 428; viii, 445; Kentucky, vi, 468; ix, 423; Maine, ix, 463; Massachusetts, vi, 535; Michigan, ii, 514; vi, 574; viii, 540; Minnesota, ii, 525; vi, 595; viii, 542; Missouri, ii, 529; viii, 546; Nevada, viii, 557; ix, 563; New Hampshire, viii, 561; New Jersey, iv, 663; v, 562; New York, ii, 568; North Carolina, v, 586; Ohio, iv, 703; Oregon, v, 611; South Carolina, ii, 697; Texas, vi, 836; West Virginia, iv, 846; Wisconsin, vi, 876; California, xii, 86.
- Consols, jurisdiction of, vi, 778.
- Consumption, parasitic theory of, ix, 663.
- Contempt of legislative authority, x, 261.
- Contested elections in the Congress of the United States, xiii, 235.
- Contraband of war, food made, x, 172.
- Contracts, damages for prospective profits on, iv, 676.
- Convallaria Maialis, viii, 256.
- Convention of London, the, ix, 111.
- Conventions, national political. See article United States.
- Converse, E. M., obit., xviii, 546.
- Convict-labor, iv, 819; v, 374; in Alabama, v, 11; vi, 7; vii, 4; ix, 9; xi, 7; in California, v, 76; in Connecticut, v, 196; in Florida, v, 272; in Georgia, vi, 334; vii, 340; in Kentucky, vi, 470; in Massachusetts, v, 495; in New Jersey, v, 593; vi, 636; in New York, viii, 566; ix, 582; x, 636; in North Carolina, v, 583; in South Carolina, vi, 813; vii, 745; in Texas, v, 685; in West Virginia, iv, 845; prohibited in the United States, xii, 207; troubles, xvi, 821; xvii, 725.
- Convicts, colonization of, ix, 342; proposed, in Saghalien, x, 397.
- Convict system in Alabama, xiii, 8.
- Convocation of Canterbury, xiv, 10; xv, 11; xviii, 8; of York, xv, 11; xviii, 10.
- Conway, Elias, obit., xvii, 541.
- Conway, Hugh. See Fergus, F. J.
- Conway, Thomas William, obit., xii, 578.
- Conyngham, Jane, Marchioness of, obit., i, 631.
- Conyngham, T. N., Marquis of, sketch, i, 212.
- Coode, Sir J., obit., xvii, 589.
- Cook, Capt. James, ix, 275, 276.
- Cook, Eliza, xiv, 236.
- Cook, George H., sketch, xiv, 237.
- Cook, Mt., ix, 545.
- Cook, Paul, obit., xi, 713.
- Cook, T., obit., xvii, 589.
- Cooke, H. D., obit., vi, 680.
- Cooke, John Esten, obit., xi, 671.
- Cooke, J. P., experiments by, v, 87; xii, 102.
- Cooke, John R., obit., xvi, 615.
- Cooke, Phineas Baldwin, obit., xii, 578.
- Cooke, Rose Terry, obit., xvii, 541.
- Cooking-schools, xii, 233.
- Cooking-utensil, a new, xvi, 707.
- Cook Islands, xiv, 401.
- Cooley, Dennis N., obit., xvii, 541.
- Coolies, exportation of, to Cuba, v, 103; to Peru, x, 688.
- Coombs, N., obit., iii, 636.
- Cooper, George H., obit., xvi, 615.
- Cooper Institute, i, 212.
- Cooper, James, obit., xi, 672.
- Cooper, Peter, nomination of, i, 781; sketches, i, 212; viii, 256, with steel-plate portrait.
- Cooper, Thomas, obit., xvii, 589.
- Cooper, William W., obit., xi, 713.
- Co-operation, xiii, 241.
- Copan, Monuments of, xi, 24, 25.
- Cope, C. W., obit., xv, 677.
- Cope, Edward D., ix, 45.
- Copeland, Dr. Ralph, x, 53.
- Copenhagen, proposed fortification of, viii, 275.
- Copenhagen, University of, celebration of its 400th anniversary, iv, 314.
- Copenhagen, Wellington's horse, epitaph on, ix, 624.
- Copper, method for welding, i, 523; determination of, ii, 92; from pyrites, ii, 500; hardening, ii, 500; preparation, vii, 532; removal of arsenic, etc., viii, 113; extraction, viii, 521; ix, 477; market, 474; in Africa, ix, 362; xiii, 525; crisis, the, xiv, 340; and tin, xiv, 541; xv, 528; xvi, 510; mines, xiv, 595. See also under Metallurgy.
- Copra, trade in, x, 139.
- Coptic Church, ix, 279.
- Copyright, commission on, iii, 223; laws of, and discussion on, iii, 223-227; treaty, France and Germany, viii, 397; international, xi, 811; xiii, 234; xvi, 215; conference on, x, 746; xii, 755.
- Coquilhat, C., obit., xvi, 668.
- Cora, R. de la, x, 361.
- Corano, madonna of, x, 506.
- Corbit, William P., obit., xvii, 541.
- Coreoran, W. W., sketch, xiii, 628.
- Cordage, xiii, 247.
- Corder, H., observations by, iii, 36; vii, 39.
- Cordova, meteorological stations in, xii, 315.
- Corea, i, 425; v, 413; vii, 175; viii, 257; insurrection in, vii, 176; American treaty, vii, 176; viii, 259, 260, 455; ix, 233, 418; x, 263; map, x, 264; outbreak of 1884, x, 266; guilds, the six magazines and the six warehouses, x, 266; xi, 271; gold in, 272; cholera, 271; xiii, 252; xiv, 238; flag of, xiv, 239; treaty with, xiv, 753; xvi, 238.
- Coreans, in the United States, xi, 271.
- Corfu, Greece, illustration, ii, 370.
- Corinth, Greece, illustration, ii, 370; canal, viii, 308; ix, 312; xv, 281; xviii, 370.
- Corliss, G. H., sketch, xiii, 628.
- Cormon, Fernand, pictures by, x, 358; xii, 275.
- Cornacchia, Capt., xiii, 4.
- Cornaro, Louis, obit., xi, 713.
- Cornell, John Black, obit., xii, 578.
- Cornell, T., obit., xv, 641.
- Cornell University, ill., i, 599.
- Corning, H. K., obit., iii, 635.
- Corning, N. Y., xv, 123.
- Corn Island, annexation of, xiii, 613.
- Cornly, James Madison, obit., xii, 579.
- Corn-silk, drug made from, ix, 272.



- Cornthwaite, R., obit., xv, 677.  
 Cornutine, x, 299.  
 Cornwall, H. B., investigations, v, 95; xii, 107.  
 Corona, observations of the, iii, 34; photographing, x, 47.  
 Coroners, office abolished in Massachusetts, ii, 483.  
 Coronini, Count, sketch, iv, 301.  
 Corot, B. C., xi, 347.  
 Corporations, liability, iv, 21, 720.  
 Corps Législatif, under Louis Napoleon, vii, 208.  
 Corrado, Nestori, obit., xvi, 615.  
 Correlation theory, xii, 672.  
 Correnti, Cesare, sketch, xiii, 660.  
 Corrigan, Archbishop, x, 563; xii, 717.  
 Corrigan, J. H., obit., xv, 641.  
 Corrosive sublimate, use of, in surgery, ix, 747.  
 Corse, John M., obit., xviii, 546.  
 Corsicana, Tex., xvi, 152.  
 Cort, F. de, obit., iii, 652.  
 Corti, Luigi, sketch, xiii, 660.  
 Cortland, N. Y., xv, 124.  
 Corundum, production of, ii, 93.  
 Corvée, abolition of, in Egypt, xii, 243.  
 Corwin, the, cruise of, v, 301; vi, 323, 324.  
 Corwine, A. B., obit., v, 591.  
 Cosmic Dust, viii, 526; ix, 53.  
 Cossacks, illustration, i, 710.  
 Costa, Sir M., obit., ix, 615.  
 Costa Rica, government, statistics, etc., in every volume; map, ii, 228; view of the capital, vii, 177; hostility to Nicaragua, i, 213; ii, 229; v, 200; outbreak in, ii, 229; fruit trade, iii, 228; education, iii, 228, 229; iv, 302; xi, 274; without a constitution, v, 200; finances of, vi, 199; vii, 177; Jesuits in, ix, 235; Protestantism in, x, 268; minerals found in, xi, 274; Chinese excluded, xii, 211; boundary dispute; xiii, 253; xiv, 239; xv, 242; xvi, 24; xvii, 217. See Colombia.  
 Coster, Maurice I., ix, 477, 478.  
 Cotopaxi, Mount, ix, 541; eruption, 281; x, 203; view of, iii, 260.  
 Cottenet, discovery by, iii, 36.  
 Cotterill, discovery, iii, 663.  
 Cottessloe, T. F. F., obit., xv, 677.  
 Cottey law, the, iv, 644.  
 Cotton, i, 213; ii, 229; iii, 229; vi, 200; vii, 178; production and value of, iv, 633; seed-cotton, iv, 638; manufacture, ii, 120; iv, 143, 820; v, 130; vii, 502; commerce, iv, 171; weighing by sizing, iii, 229; Atlanta exposition, vi, 260; statistics, vii, 113; factories in South Carolina, viii, 735; large yield in, xii, 738; in Mexico, xi, 555; cultivation of, in Japan, xii, 402; xv, 278; statistics, xvii, 764; mineral, xvi, 528.  
 Cotton-growers' convention, xvii, 471; in Arkansas, xviii, 24.  
 Cotton, Sir H., obit., xvii, 589.  
 Cotton-seed oil, xvii, 307.  
 Cotton-seed products, xiv, 240.  
 Cotton-tree, flour from the, x, 100.  
 Cotton-worm, see Cotton, vi, 200; illustration, ii, 232.  
 Coudreau, H., xii, 314.  
 Coulson, Dr. William, obit., ii, 598.  
 Coulthurst, W., obit., ii, 598.  
 Coumoundouros, resignation of, vii, 370.  
 Council Bluffs, xiii, 162.  
 Coup d'état, the, in Servia, xviii, 686.  
 Coup d'état, the Queen's, in Hawaii, xviii, 375.  
 Coupon cases, x, 268.  
 Courbet, Admiral, ix, 57, 141, 142, 343; x, 172, 173; obit., x, 659.  
 Courbet, Gustave, sketch, iii, 230.  
 Courcy, Gen. Roussel de, x, 27, 30, 31; obit., xii, 626.  
 "Courier and Enquirer," the, ix, 613.  
 Courtenay's fog-signal, v, 449.  
 Courtney, J. M., v, 449.  
 Courtat, Louis, picture by, x, 363.  
 Court of claims bill, xii, 189.  
 Courts, three rival, in Spain, i, 731.  
 Courts, United States and State, see Criminal Jurisdiction, vii, 179; crowded, v, 649; in Connecticut, iii, 215; v, 196; cost in North Carolina, v, 584; bill on jurisdiction of circuit, and to regulate removal of causes, v, 137-150.  
 Coutance, H. A., experiments, ix, 661.  
 Couza, obit., xv, 677.  
 Covington, Ky., xi, 166.  
 Cow-boys, the, vi, 782.  
 Cowgill, Clayton A., sketch, i, 298.  
 Cowles, E., obit., xv, 641.  
 Cowles, E. H. and A. H., x, 578; xi, 535.  
 Cowles, J. P., obit., xv, 641.  
 Cowley, Earl, obit., ix, 615.  
 Cowper, E. A., obit., xviii, 577.  
 Cox, Bell, case of, xii, 13.  
 Cox, E. T., discovery of mines by, v, 18.  
 Cox, E. W., obit., iv, 698.  
 Cox, Hannah, abolitionist, obit., i, 614.  
 Cox, Hannah, centenarian, obit., vi, 680.  
 Cox, Samuel, obit., xviii, 577.  
 Cox, S. H., obit., v, 591.  
 Coxe, Brinton, obit., xvii, 541.  
 Coxe, Sir J., obit., iii, 652.  
 Cozzens, W. C., obit., i, 614.  
 Crab-farming, xi, 274.  
 Crabs, symbolism of, ix, 600.  
 Craig, James, sketch, xiii, 629.  
 Craig massacre, the, xii, 48.  
 Craig, Sir W. G., obit., iii, 652.  
 Craik, Dinah Maria Mulock, sketch and portrait, xii, 212.  
 Crain, Peter Wood, obit., xvii, 542.  
 Crammer, S. H., nominated, xiii, 263.  
 Crampel, P., obit., xvi, 669.  
 Crampton, C. A., xii, 107.  
 Crampton, John F., xiii, 266.  
 Crampton, Sir John F. T., obit., xi, 713.  
 Crampton, T. R., sketch, xiii, 661.  
 Cranborne, Lord. See Salisbury.  
 Cranbrook, Viscount, portrait, x, 441; sketch, 449.  
 Cranch, C. P., obit., xvii, 542.  
 Crane, Rev. J., obit., ii, 577.  
 Crane, Walter, x, 365.  
 Cranston, H., obit., ii, 577.  
 Crape-stone, ix, 235.  
 Craven, A. W., obit., iv, 692.  
 Craven, John J., obit., xviii, 546.  
 Craven, Thomas T., obit., xii, 579.  
 Crawford case, the, xiv, 425.  
 Crawford County plan for elections, xii, 247.  
 Crawford, David, obit., i, 614.  
 Crawford, Earl of, obit., v, 599.  
 Crawford, S. W., obit., xvii, 542.  
 Crawford, Thomas, xi, 347.  
 Crawford, W., obit., xv, 677.  
 Crawley, R., obit., xviii, 577.  
 Crayon portraits, xv, 729.  
 Creasy, Sir E. S., obit., iii, 652.  
 Creation, Akkadian account of, xvi, 23.  
 Creation tablet, xvii, 14.  
 Crebs, J. M., obit., xv, 641.  
 Creedmoor, international rifle-match at, ii, 234.  
 Creeds. See Churches.  
 Creighton College observatory, xii, 40.  
 Cremation, i, 216; iv, 442; progress of, xiii, 255.  
 Cremer, Camille, sketch, i, 218.  
 Crémieux, Hector, obit., xvii, 590.  
 Crémieux, I. A., sketch, v, 200.  
 Cressbrook collection, xi, 345.  
 Cresson, Dr. J. C., obit., i, 614.  
 Creswell, J. A. J., obit., xvi, 615.  
 Cretan question, the, xiv, 408.  
 Crete, insurrection in, iii, 411; article on, in Berlin Treaty, iii, 257; union with Greece, iii, 793; troubles in, iv, 834; viii, 774; discovery in, x, 37; disturbance in, x, 752; xii, 773; xiv, 798.  
 Crevaux, Dr., explorations by, ii, 330; iii, 365.  
 Crime, punishment of, in North Carolina, i, 611.  
 Crimean war, the, ix, 761.  
 Crimes Act, the, x, 451, 454, 455.  
 Criminal Code Bill, British, viii, 411.  
 Criminal Jurisdiction in the United States, vii, 179; of consuls, case of O'Neill, vii, 442.  
 Crinoline, ix, 388.  
 Crisp, Charles F., sketch and port., xvi, 242.  
 Crispi, Signor, xii, 398, 399; xiii, 4.  
 Criticism, recent works of. See Literature in every volume.  
 Crittenden, G. B., obit., v, 591.  
 Crittenden, T. L., obit., xviii, 546.  
 Crivoscia, insurrection in, vii, 55; viii, 548.  
 Croasdale, W. T., obit., xvi, 615.  
 Croatia, dissatisfaction in, v, 370; viii, 48; ix, 70; insurrection in, about escutcheons, ix, 71; peasants of, illustration, ii, 58; home-rule party in, broken up, xii, 54.  
 Crocker, Charles, sketch, xiii, 629.  
 Crocker, J. S., obit., xv, 641.  
 Crocker, Uriel, obit., xii, 579.  
 Crocker, W. M., description of the Milanows by, vi, 330.  
 Crofters, Scottish, ix, 378, 404, 405; x, 527; xii, 342.  
 Crofters, the, xiii, 392.  
 Crofton, Sir Walter, xii, 701.  
 Crofton system, the, xii, 703.  
 Croix, L. De S., sketch, xiv, 659.  
 Croix, Marie de la, ix, 774.  
 Croll, James, on nebulae, iii, 38; calculations by, vi, 349; obit., xv, 677.  
 Croly, David G., sketch, xiv, 626.  
 Crommelin, W. A., obit., xi, 713.  
 Cronin, E. A., obit., iii, 635.  
 Cronstadt, view of, i, 709.

- Crookes, William, observations, viii, 526; xi, 47; xii, 101, 109.
- Crook, George, sketch and port., xv, 243.
- Crops, vi, 851; viii, 335; ix, 327; xiv, 314; xv, 307; xvii, 269. See *Finances and Financial Review*.
- Crosby, Dr. A. B., obit., ii, 577.
- Crosby, G. A., sketch, xiii, 629.
- Crosby, Howard, obit. and port., xvi, 616.
- Crosby, J. P., obit., i, 614.
- Crosby, William H., obit., xvii, 542.
- Crosman, G. H., obit., vii, 635.
- Cross, Gen. O., obit., i, 614.
- Cross, Sir Richard Assheton, portrait and sketch, x, 449.
- Crossley, John T., sketch, xiv, 659.
- Crosswell, Charles M., i, 552; iii, 562; obit., xi, 672.
- Croton aqueduct, ix, 314; illustration, i, 602; xii, 555; illustrations, 556, 557, 559, 560.
- Crow-Bar Case, the, viii, 101.
- Crowninshield, Benjamin W., obit., xvii, 542.
- Crozier, Capt., x, 138.
- Crozier, L. N. F., x, 125.
- Crudeli, Tommasi, ix, 271, 653.
- Cruikshank, George, obit., iii, 653.
- Cruisers, new. See *United States Navy*.
- Cruik, Dr., discovery by, vii, 37.
- Crutchfield, W., obit., xv, 642.
- Cruto, electric lamp of, viii, 303.
- Cryptogamia, the higher, ix, 94.
- Crystals, quartz, artificially produced, iv, 417.
- Csillag, Rosa, obit., xvii, 590.
- Cuba, viii, 261; demand for United States products, vi, 817; war in, i, 729, 732; ii, 700; iii, 774; iv, 463, 822; v, 672; results of, viii, 262; ix, 236; virtual slavery in, ix, 237; suspension of newspapers in, ix, 237; emancipation, xii, 215; x, 273; xi, 275; xii, 214; xiii, 256; xiv, 244; xv, 244; xvi, 243; xvii, 218; xviii, 252.
- Cubango river, source of, iv, 405.
- Cucinello, M., sketch, xiv, 659.
- Cuckoo Clock, x, 613.
- Cudahy, Michael, invention by, x, 734.
- Coffee, Paul, xii, 417.
- Cullen, Cardinal, sketch, iii, 230.
- Cullis, Charles, obit., xvii, 542.
- Cullom, S. M., sketch, i, 395.
- Cullum, G. W., obit., xvii, 542.
- Culver, E. D., sketch, xiv, 626.
- Cumberland river improvement, xiv, 790.
- Cumin, H. H., sketch, xiv, 626.
- Cumming, Sir A., obit., xviii, 577.
- Cummings, E. E., obit., xi, 672.
- Cummings, J., obit., xv, 642.
- Cummins, G. D., sketch, i, 218.
- Cummins, G. W., experiments by, x, 694.
- Cuneiform literature, ix, 18; antiquity of, xii, 16.
- Cunningham, H., obit., iii, 635.
- Cunningham, James, x, 454.
- Curacao. See *West Indies*.
- Curci, C. M., obit., xvi, 669.
- Curley, James, sketch, xiv, 626.
- Currency, circulation, xiii, 785.
- Currency, paper, of Turkey, iv, 832; law in Canada, v, 211; of Argentine Republic, vi, 29; of Japan, vi, 455.
- Currency, United States, ii, 235; v, 646; vi, 127; discussed in Congress, iii, 138, 175; bill to redeem fractional, i, 202. See also *Finances of the United States* in each volume, and *Indebtedness*, etc., vii, 392; bimetallic, x, 275; charts, x, 276, 278, 279, 281.
- Curry, Daniel, obit., xii, 579.
- Curry, G. L., obit., iii, 635.
- Curtain-rings, xvi, 707.
- Curtains, ix, 247; improved fixtures, illustration, xii, 653.
- Curtis, Benjamin R., obit., xvi, 616.
- Curtis, George William, ix, 691; sketch and port., xvii, 219.
- Curtis, N. M., indicted, vii, 694.
- Curtis, Samuel J., sketch, xiii, 629.
- Curtis, W. E., sketch, v, 201.
- Curtis, William B., obit., xvi, 616.
- Curtius, G., obit., x, 659.
- Curwen, Rev. John, ix, 546.
- Cushing, Caleb, sketch, iv, 303.
- Cushman, Charlotte, sketch, i, 218.
- Cust, Sir E., obit., iii, 653.
- Custance, William, obit., xi, 713.
- Custer, Gen. George A., sketch, i, 219; death of, i, 22, 43.
- Customs conference, xv, 71.
- Cuthbert, J. A., obit., vi, 681.
- Cut-Knife Creek, engagement at, x, 128.
- Cutler, William P., sketch, xiv, 626.
- Cutter, Eunice P., obit., xviii, 546.
- Cutter, G. F., obit., xv, 642.
- Cutter, Stephen, obit., xi, 672.
- Cutting Case, the, xi, 825.
- Cutting, Jonas, obit., i, 615.
- Cutts, Richard M., obit., xi, 673.
- Cuvillier-Fleury, A. A., obit., xii, 626.
- Cuyler, Theodore, obit., i, 615.
- Cuypers, Josef, x, 366.
- Cyanogen compounds, ix, 808.
- Cyclamose, xi, 139.
- Cyclone in India, i, 405; in Minnesota, viii, 543; in Sicily, ix, 416.
- Cyclones, phenomena of, xii, 491.
- Cyclorama, xi, 278.
- Cyprus, iii, 231, 401; vi, 202; articles on, in Berlin Treaty, iii, 259; finances, v, 336; Cesnola's explorations, i, 31; Phœnician inscription from, xii, 17; xiv, 397; xv, 404; xvii, 325; excavations in, xiv, 21; xvi, 342.
- Cyprus Exploration fund, xiii, 27.
- Cyril II, Patriarch of Jerusalem, i, 373; obit., ii, 598.
- Czajkowski, Michael, obit., xi, 714.
- Czar, the, attempts on the life of, iv, 776, 778; v, 662, 665; xii, 723; precautions taken, ix, 712; x, 69; visit of, to the Cossacks, xii, 725. See *Alexander*.
- Czartoryski, Prince, obit., xvi, 669.
- Czechs, the, v, 44, 45; vi, 49, 50; viii, 45; x, 71; language and university, 71; agitation, 72.
- Czernak, J., obit., iii, 653.
- Czernagora, ix, 536.
- Daboll, C. L., fog-signal of, v, 447.
- Daft, Olivia, obit., v, 592.
- Daggett, O. E., obit., v, 592.
- Daguerre, ix, 651.
- Dahl, M., xii, 484.
- Dahlen, Gen. von, vii, 58.
- Dahlgren, C. G., sketch, xiii, 629.
- Dahomans, the king's dance, illustration, ii, 8.
- Dahomey, war with, i, 8; xv, 244; xvii, 220; xviii, 330.
- Dai Nippon. See *Japan*.
- Dakin, T. S., obit., iii, 635.
- Dakota, i, 219; ii, 245; vi, 202; viii, 265; new capital, 266; Constitution, 267; x, 283; census, x, 287; division of, xii, 219; ix, 240; x, 282; xi, 279; xiii, 259; xiv, 245.
- Dalai Lama, the, x, 396.
- D'Albertis, explorations by, iii, 364; iv, 398, 403.
- Dales, John B., obit., xviii, 547.
- Dalhousie College, view of, xiv, 149.
- Dalhousie, Lord, in Burmah, xi, 114.
- Dall, C. H. A., obit., xi, 673.
- Dall, W. H., exploration by, v, 289; vi, 325; x, 404.
- Dallas, Tex., xv, 124.
- Dalles, the, Ore., xvi, 172.
- Dallinger, W. H., ix, 510.
- Dallman, Capt., xi, 382.
- Dally, Abram, obit., xviii, 547.
- Dalmatia, i, 757.
- Dalrimple, Van Cleve, obit., xvii, 543.
- Dalton, Ga., xiv, 144.
- Dalton, J. C., sketch and port., xiv, 249.
- Damala, Jacques, sketch, xiv, 659.
- Damaraland, xiv, 111; xv, 96.
- Damien de Veuster, J., xiv, 250.
- Damien, Father, xii, 350.
- Damour, experiments by, ii, 501.
- Dams, famous, xii, 255.
- Dana, A. H., obit., xii, 580.
- Dana, E. L., sketch, xiv, 626.
- Dana, R. H., the elder, sketch, iv, 304.
- Dana, R. H., the younger, sketch, vii, 182.
- Danakil, tribe of the, ii, 2.
- Danbury, Conn., xvi, 153.
- Danby, A. G., obit., i, 615.
- Dancer, John B., obit., xii, 626.
- Dancing, churches on, i, 668; iv, 734.
- Dancing mania, xiii, 312.
- Dandanga, ix, 170.
- Danenhower, J. W., portrait, xii, 333; obit., xii, 580.
- Danforth, Charles, obit., i, 615.
- Danforth, P. S., obit., xvii, 543.
- Daniel, R. T., obit., ii, 578.
- Dannat, W. F., x, 358.
- Danube, European Commission of the, i, 753; vii, 728; viii, 268; ix, 702; xiii, 719; Kilia question, vii, 729; underground connection with the Aach, iii, 722; the Iron Gate, ii, 691; viii, 309, 696; ix, 702; map of provinces of the, iii, 789.
- Danvers Hospital, ii, 483.
- Danville, Ill., xviii, 156.
- Danville, Va., xv, 125.
- Daoud Pasha, vii, 261.
- Darby, John, obit., ii, 578.
- Dareell, Alfred, obit., xviii, 578.
- Dardanelles, the, illustration, i, 765; question of the, xvi, 784; xvi, 828.
- D'Arenal, Donna Concepcion, xii, 704.
- Dar-es-Salam, port of, x, 796.



- Dargan, E. S., sketch, iv, 304.  
 Darley, Felix O. C., sketch and port., xiii, 629.  
 Darling, Henry, obit., xvi, 616.  
 D'Arlingcourt, invention, vi, 256.  
 D'Arsonval, Dr., xii, 671.  
 Dartmouth College, ill., i, 591.  
 Daru, Count, obit., xv, 677.  
 Darwaz, State of, x, 2.  
 Darwin, Charles, experiments by, v, 106; on earth-worms, vi, 224; sketch of, vii, 183.  
 Darwin, Francis, experiments by, iii, 444; iv, 36; v, 106.  
 Darwin, G. H. and H., observations by, vii, 223; xi, 47.  
 Dash Kepri, x, 9.  
 Daubigny, Charles F., obit., iii, 653.  
 Daubigny, Karl, obit., xi, 714.  
 Daubrée, experiments by, iv, 417.  
 Daucher, L., obit., iii, 635.  
 Davenport, E. L., obit., ii, 246.  
 Davenport, Fannie E., obit., xvi, 616.  
 Davenport, Iowa, xv, 125.  
 Davey, Chalton F., obit., iii, 635.  
 David, Ernest, obit., xi, 714.  
 David, F. C., sketch, i, 220.  
 Davidge, W. P., sketch, xiii, 630.  
 Davidis, Henrietta, obit., i, 731.  
 Davidson, G. S., obit., vi, 681.  
 Davidson, R., obit., i, 615.  
 Davidson, T. G., obit., viii, 588.  
 Davie, W. J., obit., xii, 580.  
 Davies, Charles, sketch, i, 220.  
 Davies, H. E., sketch, vi, 204.  
 Davis, A. J., obit., xvii, 543.  
 Davis, Alexander K., impeachment, i, 560.  
 Davis, Charles H., Admiral, sketch, ii, 246.  
 Davis, Charles H., painter, xi, 346.  
 Davis, David, sketch, ii, 383; obit. and port., xi, 281.  
 Davis, E. H., sketch, xiii, 630.  
 Davis, George T., obit., ii, 578.  
 Davis, G. T. M., sketch, xiii, 630.  
 Davis Island dam, x, 333.  
 Davis, Jefferson, amnesty to, discussed, i, 183-192; Mississippi resolutions on portrait of, v, 528; action of Congress, x, 235; charge by Gen. Sherman against, x, 235; sketch and port., xiv, 259; removal of remains, xviii, 752.  
 Davis, John L., sketch, xiv, 626.  
 Davis, Joseph A., obit., xi, 673.  
 Davis, Joseph J., obit., xvii, 543.  
 Davis, J. W., renominated, xiii, 715.  
 Davis, Sir J., obit., xv, 677.  
 Davis, Mrs. P. W., obit., i, 615.  
 Davis, N. H., obit., xv, 642.  
 Davis, R., obit., xv, 642.  
 Davis, William M., xii, 493.  
 Davison, H. J., obit., xv, 642.  
 Davitt, Michael, viii, 413; xii, 338.  
 Davy, Alfred, invention by, x, 580.  
 Davy, E. W., discovery by, iii, 92.  
 Dawant, Albert Pierre, x, 362.  
 Dawes, Henry L., sketch, vi, 536.  
 Dawkins, W., his address, xiii, 45.  
 Dawson, Arctic voyage, viii, 383.  
 Dawson, B. F., sketch, xiii, 630.  
 Dawson, F. W., sketch, xiv, 626.  
 Dawson, Dr. G. M., xii, 314.  
 Dawson, Henry, obit., iii, 653.  
 Dawson, Dr. J. W., x, 407.  
 Dawson, S. K., sketch, xiv, 627.  
 Dawson, Sir William, xi, 47.  
 Day, B. H., sketch, xiv, 627.  
 Day, Hannibal, obit., xvi, 616.  
 Day, Henry, obit., xviii, 547.  
 Day, Horace H., obit., iii, 635.  
 Day, H. N., obit., xv, 642.  
 Dayan, Charles, obit., ii, 578.  
 Dayton, Ohio, xi, 166; xiv, 144.  
 Daza, Hilarion, sketch, iv, 305.  
 Deaconesses, v, 638; viii, 4.  
 Deaconess institution, xiii, 505.  
 Deady, M. P., obit., xviii, 547.  
 Deak, Francis, sketch, i, 221.  
 Deane, Charles, sketch, xiv, 627.  
 Dearborne, Frederick M., obit., xiii, 580.  
 Deas, Sir David, obit., i, 631.  
 Death penalty, in Ecuador, xii, 232.  
 De Bar, Benedict, obit., ii, 578.  
 Debeb, Abyssinian robber, xi, 455.  
 De Bort. See Bort.  
 De Brazza. See Brazza.  
 Deb Rajah, the, x, 496.  
 Debray, J. H., sketch, xiii, 661.  
 Debreul, J. P., obit., iii, 636.  
 Débris from mines. See Mines.  
 Debts, of United States, of the various States, and of other nations. See Indebtedness of the United States, etc., vii, 392, with maps and diagrams, and United States Finances, in every volume. See also under titles of States and Countries; of Cities, iv, 339.  
 Debus, H., theory of, x, 343.  
 Decaisne, J., obit., vii, 645.  
 Decanter, musical, x, 609.  
 Decatur, Ala., xiii, 162.  
 Decatur, Ill., xvi, 154.  
 Decatur, Stephen, sketch, i, 222.  
 Decazes, Louis Charles, Due de, ii, 320; obit., xi, 714.  
 Decazeville, strike at, xi, 358.  
 Deccan, mining in the, xiv, 427.  
 Deccan Company, the, xii, 383.  
 Dechen, Heinrich, sketch, xiv, 659.  
 Dechy, M., xii, 313.  
 Decipium, vi, 93.  
 Decker, John, obit., xvii, 543.  
 Decorative art in America, ix, 242.  
 Decorations, sale of, in France, xii, 294.  
 Decourcelle, A., obit., xvii, 590.  
 Decristofori, Col., xii, 2, 3.  
 Dederick, cotton-press, vi, 265.  
 Deeds and titles, record of, in Great Britain, x, 457.  
 Deems, C. F., obit., xviii, 547.  
 Deep-Harbor Convention, xiii, 180; xiv, 485.  
 Deep-sea dredgings, x, 145.  
 Deer-hound, the, ix, 310.  
 Deer in the United States, x, 387.  
 Defalcation, Archer, xv, 519.  
 Defenses, system of, in United States, iii, 31; v, 647; of Switzerland, v, 676; vii, 774.  
 Defer collection of pictures, xi, 344.  
 De Forest, Lockwood, ix, 249.  
 Defrees, J. D., obit., vii, 636.  
 Defregger, Franz, x, 367; xii, 279.  
 Degener, E., obit., xv, 643.  
 Degenfeld-Schönburg, Count von, sketch, i, 222.  
 De Kalb, Baron, statue of, xi, 347.  
 De Kock, P. H., obit., xvii, 590.  
 De Koven, James, sketch, iv, 305.  
 Delacroix, Eugène, x, 364; xii, 279.  
 Delafontaine, M., discovery by, iii, 86; experiments, vi, 93.  
 Delafosse, Gabriel, obit., iii, 653.  
 Delafosse, M., x, 26.  
 Delagoa Railroad, xiv, 110; xv 96, 739.  
 De Lamater, C. H., sketch, xiv, 627.  
 Delanc, John T., sketch, iv, 205.  
 Delany, James J., obit., xi, 673.  
 Delany, P. B., ix, 310.  
 De la Kive, theory of, viii, 28.  
 De la Rue, W., sketch, xiv, 659.  
 Delaunay, J. E., obit., xvi, 660.  
 Delaware, statistics, conventions, elections, etc., in each volume; old Swede Church, illustration, ii, 247; apportionment in, iii, 237; project for ship-canal, iii, 239; iv, 310; tramp act, iv, 306; divorce laws, iv, 306, 307; railroad commissioners' bill, iv, 308; limits of Federal and State authority, v, 203; election riot, v, 204; vi, 205; constitutional amendments, ix, 251; State line, xviii, 255.  
 Delbœuf, M. J., ix, 657.  
 De Leon, Edwin, obit., xvi, 617.  
 De Lesseps, v, 16.  
 Delevan, C. H., obit., xvii, 543.  
 Delai, illustration, i, 405.  
 Deligeorgis, obit., iv, 698.  
 De l'Isle, Gen. Brière, x, 24 *et seq.*  
 Delitzsch, Johannes, sketch, i, 225.  
 Delius, Nikolaus, sketch, xiii, 661.  
 Deloncle, F., x, 397.  
 De Long, Charles E., obit., i, 615.  
 De Long, G. W., expedition of, v, 288; vi, 322; vii, 331; sketch, vii, 189; portrait, vii, 331.  
 Delord, Taxile, obit., ii, 598.  
 Delorme, explorations by, vi, 329.  
 Delphi, site of, illustration, ii, 369; contemplated excavations at, xii, 22; temple at, xvi, 17.  
 Delpit, Albert, obit., xviii, 578.  
 De Lunes, C., obit., iii, 636.  
 Delyannis, xi, 409.  
 Demarcy, M., xii, 101.  
 Dembowsky, prize to, iii, 39.  
 Demidoff, Prince, obit., x, 659.  
 De Mille, H. C., obit., xviii, 547.  
 Demmen, Col., x, 625.  
 Denfert-Rochereau, obit., iii, 653.  
 Denison, Andrew W., obit., ii, 578.  
 Denison, Samuel D., obit., v, 592.  
 Denmark, statistics, legislative proceedings, etc., in each volume; views in, illustrations, i, 228; ii, 250; debates on military defenses, i, 227-230; v, 207; army reorganization, iv, 313; indictment of ministers, ii, 249, 250; social Democrats, ii, 250; Santa Cruz insurrection, iii, 242; treaty of Prague, iv, 313; University of Copenhagen celebration, iv, 314; relations with Germany, v, 208; constitutional crisis, vi, 209; vii, 191; viii, 275; ix, 253; x, 290; peculiar political condition, vi, 210; land system, vi, 211; attempt to assassinate the prime minister, x, 293; xi, 285; trial of Herr Berg, xi, 285; colonies, xii, 223; dependencies of, xviii, 258.  
 Dennett, Daniel, obit., xvi, 617.  
 Dennett, observations by, iv, 52.

- Denning, W. F., observations by, iii, 36; vi, 39; viii, 20, 23, 26.
- Dennis, John S., obit., x, 659.
- Dennison, William, obit., vii, 636.
- Denny, Mr., in Corea, xiii, 253.
- Denominations, Religious, number of, viii, 129. See articles on the various denominations, in each volume.
- Do Normanville, W., invention by, ii, 499.
- Densmore, Amos, obit., xviii, 547.
- Dent, Mr., xii, 313.
- Dent, F. T., obit., xvii, 544.
- D'Entreeasteaux Islands, x, 681.
- Denver, xi, 167; capitol building at, xiii, 179.
- Denver, James W., obit., xvii, 544.
- Denza, F. P., observations, v, 36.
- Denzin, K. F. von, obit., i, 631.
- Departments, United States Government, xiii, 375.
- Depauw, observations by, viii, 436.
- De Pauw, Washington C., obit., xii, 581.
- Depeyre, O., obit., xvi, 669.
- Deposit and Trust Companies, x, 293; list of, in U. S., x, 294, 295.
- Depretis, Agostino, v, 406; xi, 453, 454, 455; sketch, xii, 223; retirement of, 397.
- De Puy, H. W., obit., i, 615.
- Derby, E. H. S. S., obit., xviii, 578.
- Derby, J. C., obit., xvii, 544.
- Derby, Lord, x, 58, 59, 419.
- Derby, Mrs. L. F., obit., v, 592.
- Derby, Orville A., ix, 475.
- De Rossi, observations of, vii, 223.
- Déroulède, Paul, arrest of, xii, 296.
- De Russy, G. A., obit., xvi, 617.
- Dervishes, xviii, 278.
- Dervishes, war with, xiv, 1.
- Dervish Pasha, sketch, ii, 250.
- Desabaye-Chegaray, Eloise, sketch, xiv, 627.
- De Saussure, W. G., obit., 673.
- Desbordes, Col., x, 27.
- Deschamps, Cardinal, obit., viii, 599.
- Desert, Great American, vi, 203.
- Desgodin, Abbé, travels of, ii, 327.
- Designollo powder, x, 346.
- Desjardins, Ernest, obit., xi, 714.
- Deslandes, R., obit., xv, 877.
- Des Moines, Iowa, xi, 167; river lands, xi, 248.
- Despois, E. A., sketch, i, 230.
- De Staël, M., x, 16, 17.
- Detectives, measure for regulating work of, ix, 345.
- Detlef, Karl. See Bauer, i, 68.
- Detmold, C. E., obit., xii, 581.
- Detroit, Mich., illustration, ii, 5, 9; xi, 167.
- Detwiller, Henry, obit., xii, 581.
- Deutsch, S., obit., ii, 598.
- Devan, T., obit., xv, 643.
- Devens, Charles, sketch, ii, 251; obit., xvi, 617.
- Devereux, J. H., obit., xi, 674.
- De Vico's comet, ix, 52.
- Deville, E. H. S. C., sketch, vi, 212; ix, 180, 809.
- Deville and Debray, experiments by, iii, 89.
- Devin, T. C., obit., iii, 636.
- De Vit, obit., xvii, 590.
- Devolution, in Parliament, ix, 372.
- Devon, W. R. C., sketch, xiii, 661.
- Devonshire, Duke of, obit., xvi, 669.
- Devrainville, M., invention by, x, 612.
- Devrient, P., obit., ii, 598.
- Dew, theory of, xi, 541.
- Dewar, James, apparatus for producing liquefaction, ix, 435; illustration, 434; experiments, x, 152, 161; xi, 138.
- Dewey, Nelson, sketch, xiv, 627.
- Dewing, T. W., ix, 245; xii, 278.
- De Witt, R. M., obit., ii, 578.
- Dexter, H. M., obit., xv, 643.
- Deye, Col., i, 4.
- Deyrolle, invention by, iii, 725.
- Dharma Rajah, the, x, 496.
- Dhuleep Singh, xii, 7; obit., xviii, 578.
- Diamonds in China, iv, 143; artificial, v, 86; the trade, viii, 277; mines in South Africa, ix, 110; x, 135; in Brazil, viii, 72; all kinds, xviii, 641.
- Diaz, Eugene, i, 230.
- Diaz, Porfirio, sketch, i, 547; government of, established, ii, 511; recognized by U. S., iii, 12, 551; x, 367.
- Diaz de la Pena, sketch, i, 230.
- Dick, A., experiments by, viii, 524.
- Dick, F. W., xi, 537.
- Dick, R., obit., xv, 643.
- Dickens, Inspector, x, 129.
- Dickerson, E. N., sketch, xiv, 628.
- Dickinson, Donald McDonald, sketch and portrait, xii, 776.
- Dickson, J. B., obit., i, 631.
- Dickson's expedition, iii, 354.
- Dictionaries, new, xvi, 249.
- Didot, A. F., sketch, i, 230.
- Diehl, M., x, 37.
- Dieringer, Rev. F. X., obit., i, 631.
- Diestel, L. von, obit., iv, 698.
- Diet, while in training, xii, 668.
- Dietl, Joseph, obit., iii, 653.
- Dieulafoy, discovery by, iv, 419.
- Dieulafoy, M., xi, 26.
- Diez, F. C., sketch, i, 230.
- Digby, Kenelm H., obit., v, 599.
- Digestibility of various substances, xii, 676.
- Digestion, new agent in, vi, 96; experiments, vi, 749; vii, 94, 690; viii, 635; xi, 760; xvi, 736; xviii, 630.
- Digestive system, the, ix, 658; x, 693; xiii, 693; xiv, 706; xv, 724.
- Dilettanti, society of, x, 86.
- Dill, Louis, x, 578.
- Dillingham, Paul, obit., xvi, 617.
- Dillingham, W. P., nominated, xiii, 834.
- Dillon, John, xii, 336.
- Dillon, Sidney, obit., xvii, 544.
- Diman, J. Lewis, obit., vi, 681.
- Dindorf, W., obit., viii, 599.
- Dingaen, iv, 853.
- Dingelstedt, F. von, obit., vi, 692.
- Dinizulu, King, ix, 114, 115; x, 136, 137.
- Dinsmore, S. P., obit., vii, 636.
- Dion, C., obit., iii, 636.
- Dionysos, discoveries at, xiii, 26.
- Diorrexine, x, 343, 346.
- Diphtheria, drug for, x, 301; xvii, 229.
- Diplomates, dismissed, xiii, 268.
- Diplomatic Service in China, iv, 146.
- Diplomatic Correspondence and Foreign Relations of the U. S., i, 231; ii, 251; iii, 242; vi, 212; vii, 192; viii, 278.
- Direct-tax bill, xiii, 229; xvi, 210, 494.
- Direct-trade convention, xv, 365.
- Disasters in 1885, x, 295; in 1886, xi, 287; in 1887, xii, 227; in 1888, xiii, 269; in 1889, xiv, 268; in 1890, xv, 251; in 1891, xvi, 251; in 1892, xvii, 232; in 1893, xviii, 259.
- Disciples of Christ, in every volume but viii and ix.
- Disciplinary Power of Legislative Assemblies, vii, 194.
- Disease, germ theory of, ix, 495, 653, 663; see also Germ Theory; progress in study of, vi, 552; new, xi, 608.
- Disestablishment, church, viii, 9; x, 22, 196, 456.
- Disinfectants, new, i, 93; ix, 272.
- Dispensary for liquors, South Carolina, xviii, 691.
- Disraeli, Benjamin, sketches, ii, 251; vi, 213; portrait, ii, 354; effect of death of, vi, 359.
- Disraeli ministry, South African policy of, ix, 346.
- Dissection, xiii, 272.
- Dissocioscope, Tommasi's, vii, 92.
- Disston, H., obit., iii, 636.
- Distilled water, experiments with, xii, 675.
- Distilling, illicit, v, 308.
- Disturnell, J., obit., ii, 578.
- Ditson, O., sketch and port., xiii, 630.
- Dittmar, assaying, i, 524; ix, 662; invention by, x, 344.
- Divers, experiments by, viii, 111.
- Divine, G. R., invention by, x, 346.
- Divorce, in Connecticut, iv, 301; viii, 254; in Delaware, iv, 306; in Vermont, v, 708; in Massachusetts, vi, 535; viii, 519; in Maine, viii, 509; in New Hampshire, viii, 562; bill on, in France, vi, 311; ix, 342; in Rhode Island, viii, 691; ix, 698; in Pennsylvania, ix, 645; in Kansas, xi, 462; xiv, 271.
- Dix, Dorothea L., obit., xii, 581.
- Dix, John A., sketch, iv, 315.
- Dix, J. W., obit., ii, 578.
- Dixon, Archibald, obit., i, 615.
- Dixon, Harold, experiments by, xii, 106, 112.
- Dixon, N. F., obit., vi, 681.
- Dixon, W. H., sketch, iv, 316.
- Djalyeen, taken by Gordon, ix, 301.
- Djehad, law of, x, 316.
- Doberck, on binary stars, iii, 37.
- Docharty, G. B., sketch, xiv, 628.
- Dockery, O. H., nominated, xiii, 619.
- Docks, improvements to, ii, 279, 280; Thames, in London, v, 244; in South Wales, v, 245; at Hartlepool, v, 244; floating, xii, 257; at Havre, xiii, 301; new, xv, 282.
- Dodd, Edward, obit., xvi, 618.
- Dodé, invention by, iv, 134.
- Dodge, E., obit., xv, 643.
- Dodge, J. W., obit., xviii, 548.
- Dodge, Norman W., xi, 346.
- Dodge, W. E., sketch, with portrait, viii, 232; statue of, x, 367.
- Dodworth, H. B., obit., xvi, 618.
- Dodworth, Thomas, obit., i, 615.
- Doelsch process, viii, 522.



- Doering, Prof., xii, 315.  
 Dogali, battle of, xiii, 2.  
 Doggett, D. S., obit., v, 592.  
 Dogs, decision as to tax on, ii, 711; article on best breeds, with illustrations, ix, 254; the Chinese odible, ix, 263; Egyptian, xvi, 22.  
 Dog-running, ix, 262.  
 Dokpas, the, x, 397.  
 Dolaro, Selina, sketch, xiv, 628.  
 Dolbear, invention by, vi, 258.  
 Dolgorukoff, Prince, obit., xvi, 669.  
 Döllinger, Dr., iv, 647; xii, 644; obit., xv, 678.  
 Dollo, observations by, viii, 436.  
 Dolphin, case of the, x, 760.  
 Domenichino, sale of pictures of, x, 361.  
 Dominion of Canada, statistics, legislative proceedings, etc., in every volume; map of Western Provinces, viii, 80; boundaries of provinces, ix, 264-266; attempt to repatriate natives of, ix, 676; veto power of government, ix, 266; exploration in, ix, 349; climate of, x, 583; rebellion in the northwest, x, 124; elective franchise, x, 130; fisheries, x, 132.  
 Dominis, J. O., obit., xvi, 670.  
 Dom Pedro, Emperor of Brazil, steel-plate portrait, ii, 75.  
 Donaldson, E., sketch, xiv, 628.  
 Donaldson, H. H., experiments, vi, 95; viii, 632.  
 Donavan, M., obit., i, 631.  
 Don Carlos, defeat of, i, 729.  
 Don, Laura, obit., xi, 674.  
 Donders, experiments by, vi, 272.  
 Dondoukoff-Korsakoff, Prince, x, 9, 10; obit., xviii, 578.  
 Donelly, Dr., x, 455.  
 Dongola, defense of, ix, 297.  
 Dong-son, fights at, battle, x, 25, 27.  
 Doniphan, Alexander W., obit., xii, 582.  
 Donkin, Mr., xii, 313.  
 Donnelly, A. J., obit., xv, 643.  
 Donnelly, Terence O., iv, 675.  
 Donovan, C. S., obit., xv, 644.  
 Donyo Egaré, Mount, ix, 347.  
 Doolittle, T. S., obit., xviii, 548.  
 Doomsday-Book, The New, i, 365.  
 Doomsday-Book, illustration, xi, 407.  
 Doomsday Celebration, xi, 406.  
 Doran, John, obit., iii, 653.  
 Doré, Gustave, sketch, with portrait, viii, 283.  
 Dorides, Count, xi, 454.  
 Döring, T., obit., iii, 654.  
 Dörpfeldt, W., ix, 23; x, 37; xi, 34.  
 Dorsey, J. W. See Star-Route Trial, vii, 753.  
 Dorsey, Sarah A., sketch, iv, 323.  
 Dorsheimer, W., sketch, xiii, 631.  
 Dosseh, interdiction of the ceremony, vi, 239.  
 Dost Mohammed, family of, v, 3; relations with the British, v, 4; x, 1.  
 Doton, Hosea, obit., xi, 674.  
 Douai, C. D. A., sketch, xiii, 631.  
 Doubleday, Abner, obit. and port., xviii, 548.  
 Doubleday, Ulysses, obit., xviii, 548.  
 Douck Hanh, King of Anam, x, 32.  
 Dougall, John, obit., xi, 674.  
 Dougall, J. D., x, 153.  
 Dougherty, Daniel, obit., xvii, 544.  
 Dougherty, John, obit., xi, 675.  
 Douglas, Frederiek, v, 585.  
 Douglas, James, Jr., x, 577.  
 Douglas, J. H., obit., xvii, 545.  
 Douglas, Sir James N., xi, 48.  
 Douglass, Henry, obit., xvii, 546.  
 Douls, Camille, explorations by, xii, 305; sketch, xiv, 660.  
 Dounet, M., x, 155.  
 Dove, H. W., obit., i, 698.  
 Dove, John, obit., i, 615.  
 Dover, N. H., xiv, 145.  
 Dow, John M., obit., xvii, 545.  
 Dow, Moses A., obit., xi, 675.  
 Dow, Neal, viii, 664.  
 Dowden, Bishop, xi, 21.  
 Dowell, J. R., obit., i, 615.  
 Dowling, Benjamin, obit., i, 615.  
 Dowling, John, obit., iii, 636.  
 Dowling, Joseph, obit., i, 615.  
 Dowling, J. W., obit., xvii, 545.  
 Dowse, R., obit., xv, 678.  
 Doyle, John, xi, 347.  
 Doyle, Richard, obit., viii, 599.  
 Doyle, Sir F. H., sketch, xiii, 661.  
 Drag-anchor, xvi, 710.  
 Dragoman Pass, fighting at, x, 723, 730.  
 Dragomiroff, Gen., sketch, ii, 259.  
 Drainage, works for, iii, 288; ix, 717; diagram showing faults of, ix, 718.  
 Draï, Baron von, bicycle invented by, ix, 83.  
 Draisine, the, illustration, ix, 83.  
 Drake, Charles D., obit., xvii, 545.  
 Drake, Friedrich, obit., vii, 645.  
 Drake, Sir F., x, 138.  
 Drake, T., obit., xv, 644.  
 Drama, the recent. See Literature, in every volume.  
 Draper, Henry, experiments by, iv, 130; sketch, vii, 218; prize in honor of, ix, 55; xii, 112.  
 Draper, John C., obit., x, 647; xii, 112.  
 Draper, J. W., experiments by, iii, 34; viii, 378; sketch, vii, 219; xii, 36.  
 Draper, Lyman C., obit., xvi, 618.  
 Draper memorial fund, xv, 43.  
 Drayton, T. F., obit., xvi, 618.  
 Dreber, A., obit., i, 631.  
 Dredging, in New York harbor, xiii, 302, 304; with dynamite, xviii, 280.  
 Dressel, O., obit., xv, 644.  
 Dresser, Horace, obit., ii, 579.  
 Dreuteln, assassination of, iv, 683.  
 Dreutlin, Gen., iv, 777.  
 Drew, Mrs. Daniel, obit., i, 616.  
 Drew, Thomas, sketch, xiii, 631.  
 Drexel, A. J., obit., xviii, 548.  
 Drexel Home, illustration, xiii, 505.  
 Drexel, J. W., sketch, xiii, 631.  
 Drexel, Kate, her new order, xvi, 774.  
 Drift, investigation of, x, 406.  
 Driggs, J. F., obit., ii, 579.  
 Drilling-scow, illustration, x, 470, 471.  
 Driven-well patent, xii, 650.  
 Drouyn de L'Huys, obit., vi, 692.  
 Dropsy, new drug for, ix, 272.  
 Droysen, J. G., obit., ix, 616.  
 Drugs, New, ix, 271; x, 298; xi, 289; physiological action of, ix, 654.  
 Druggists, Association of. See Pharmacy.  
 Drumgoole, J. C., obit., xiii, 632.  
 Drummond, J., obit., ii, 598.  
 Drummond, T., obit., xv, 644.  
 Druses, war with, xv, 805.  
 Drysdale, A. T., obit., xi, 675.  
 Dualine, x, 344.  
 Duallas, the, x, 121.  
 Dubois, Rev. John, x, 562.  
 Du Bois-Reymond, experiments by, x, 692.  
 Dubray, V. G., obit., xvii, 590.  
 Dubs, J., obit., iv, 699.  
 Dubuclet, A., contested election of, i, 493; ii, 467.  
 Dubuque, xi, 163.  
 Duchesne, Col., x, 173.  
 Ducks, in United States, x, 387.  
 Duck Lake, engagement near, x, 125.  
 Duclaux, E., experiments by, x, 157.  
 Duclere, C. T. E., sketch, xiii, 661.  
 Duclere ministry, vii, 326.  
 Ducrot, A. A., obit., vii, 646.  
 Dudevant, Madame. See Sand.  
 Dudley, Thomas U., obit., i, 616.  
 Dudley, W. H., obit., xi, 675.  
 Dudley, W. L., discovery by, iv, 137; v, 94, 95; ix, 476.  
 Duell, Robert H., obit., xvi, 618.  
 Duels, challenges to, parliamentary discipline for, vii, 201; punishment for, in the Russian army, x, 20.  
 Ducm, battle of, x, 318.  
 Duer, Lillie, iv, 593.  
 Dufaure, Jules Armand Stanislas, Cabinet of, ii, 320; sketch, vi, 222.  
 Duff, Alexander, obit., iii, 654.  
 Dufferin, Lord, in Canada, iii, 246; in India, x, 13, 309, 497.  
 Duffield, A. J., obit., xv, 679.  
 Duffield, George, sketch, xiii, 632.  
 Duffield, Samuel W., obit., xii, 582.  
 Dufour, J. E., obit., xviii, 579.  
 Dufresne, experiments by, vi, 750.  
 Duganne, A. J. H., obit., ix, 604.  
 Dulcigno, contest for, v, 543; surrender, and sketch of, v, 545.  
 Dullert, W. H., obit., vi, 692.  
 Dulles, John Welsh, obit., xii, 582.  
 Dulong, law of relativity, vi, 41.  
 Duluth, Minn., xi, 168.  
 Dumas, J. B. A., obit., ix, 273; experiments by, vi, 42; with Benoit, invention by, iii, 279.  
 Dumbreck, Sir D., obit., i, 631.  
 Dumont, Gabriel, x, 125, 129.  
 Dumont, Léon, obit., ii, 598.  
 Dumoulin, M., xii, 680.  
 Du Motay, C. T., sketch, v, 222; inventions, v, 83; viii, 375.  
 Dunant, Henry, xi, 783.  
 Dunan, Francis, sketch, xiii, 661.  
 Duncan, Thomas, obit., xii, 583.  
 Duncker, Maximilian Wolfgang, obit., xi, 714.  
 Dundas, Sir D., obit., ii, 598.  
 Dunham, Dr. C., obit., ii, 579.  
 Dunkards. See Baptists.  
 Dunkel, A. K., sketch, xiii, 632.  
 Dunkirk, N. Y., xviii, 157.  
 Duulop, G. K., sketch, xiii, 632.  
 Dunn, John, governor, iv, 126; ix, 114.  
 Dunn, John, in Chinese service, xii, 117.  
 Dunn, Michael, obit., xvii, 545.  
 Dunn, W. McKee, obit., xii, 583.  
 Dunster, E. S., sketch, xiii, 632.

- Dunton, W. C., obit., xv, 644.  
Dunwoody, H. C., tables, viii, 528.  
Dupauloup, sketch, iii, 248.  
Dupin, Charles, characteristics of, vii, 208.  
Dupin, Jean Henri, obit., xii, 626.  
Duplay, M., x, 332.  
Duplessis, Joseph, xi, 347.  
Dupont, A. V., obit., xviii, 549.  
Dupont, Admiral S. F., statue of, x, 362.  
Dupont, Henry, sketch, xiv, 628.  
Düppel, siege of, x, 382.  
Dupra, experiments by, x, 157.  
Duprat, Pierre P., obit., x, 659.  
Duprato, J., obit., xvii, 590.  
Dupré, Admiral, obit., vi, 692.  
Dupré, Giovanni, obit., vii, 646.  
Dupré, Jules, sketch, xiv, 279.  
Dupuis, A., obit., xvi, 670.  
Dupuis, Sir J., obit., i, 631.  
Dupuy, A., obit., xvi, 670.  
Dupuy, Eliza, obit., vi, 681.  
Duran, Carolus, xii, 276.  
Durand, Asher Brown, obit. and port., xi, 292.  
Durand-Faudel, Dr., classification of mineral waters by, x, 595; xi, 546.  
Durango, Col., xviii, 157.  
Durant, E. G., nominated, xiii, 846.  
Durbin, J. P., D. D., sketch, i, 237.  
Dürer, portrait by, x, 366.  
Durgee, G., invention by, vii, 530.  
Durham, xiii, 163.  
Durham, Joseph, obit., ii, 598.  
Düringsfeld, Ida von, sketch, i, 238.  
Dury, Albert, obit., xii, 626.  
Duryee, A., obit., xv, 644.  
Du Saulle, Henri Legrand, obit., xi, 715.  
Dusch, A. von, obit., i, 631.  
Dussard, Hippolyte, sketch, i, 238.  
Düsseldorf, illustration, ii, 658; exhibition at, v, 321; xii, 346.  
Dust-shell of the earth, the, ix, 539.  
Duties, demand for, in Belgium, v, 55; in Colombia, excessive, v, 16; reduction of, in India, vii, 416; evasions of, viii, 148.  
Duties, United States, viii, 195, 788; articles duty free, viii, 207; proposed treaty with Mexico, vii, 546.  
Dutton, Capt. C. E., x, 404.  
Dutrieux, explorations, iii, 361.  
Duval, Raoul, obit., xii, 626.  
Duvergier de Hauranue, L. P. E., obit., ii, 598.  
Duveyrier, H., obit., xvii, 590.  
Duyekink, E. A., sketch, iii, 249.  
Dwellings, construction of, v, 357; laborers', vii, 220.  
Dwenger, Joseph, obit., xviii, 549.  
Dwight, George S., x, 530.  
Dwight, John S., obit., xviii, 549.  
Dwight, Theo. W., obit. and port., xvii, 545.  
Dwight, William, sketch, xiii, 632.  
Dyeing, by electricity, vii, 90; dyes, viii, 114; fustic, viii, 141; improved, v, 90.  
Dyer, C. V., obit., iii, 636.  
Dyer, Thistleton, address, xiii, 46.  
Dynagraph, xi, 294.  
Dynamics, ix, 305.  
Dynamite, manufacture, vi, 223; plots, viii, 415; ix, 377; xiii, 397; gun, with illustration, ix, 273; in Loudou, x, 234; x, 344, 454; gun, xiii, 796; xvi, 558; dredging, xviii, 280.  
Dynamo-electric machine, illustration, vi, 253.  
Dynamogen, x, 346.  
Eadie, J., obit., i, 632.  
Eads, J. B., his design for a ship-railway, ix, 313; sketch and port., xii, 228.  
Eames, Dr., invention by, x, 575.  
Earle, Pliny, obit., xvii, 546.  
Earle, Maj.-Gen. William, obit., x, 660.  
Earle, William H., xiii, 242.  
Early, Gen. Jubal, x, 427.  
Earth, the, i, 238; ii, 259; iii, 249; v, 222; vii, 221; mass of, ii, 43; theory of solidity, iv, 419; density of, vii, 35; area and population of, the, xvi, 261.  
Earthquakes, in Austria, i, 59; in Switzerland, v, 677; in Ischia, vi, 451; in Ecuador, viii, 288; in Nicaragua, x, 642; at Lima, ix, 649; in Mexico, x, 590; xii, 504; in Spain, x, 741; in United States, xi, 296; xiii, 158, 288, 550, 830; xiv, 240, 282, 559; xvi, 392; xvii, 73; in Zante, xviii, 370.  
Earthquakes and volcanic disturbances in 1883, viii, 284; at Guayaquil, xii, 232; map showing the extent of, xi, 296; earthquakes of 1663, 1727, 1744, 1755, 1811, 1812, xi, 296-299; illustration of the Charleston, xi, 300, 301; theories of, xi, 301; observations, xi, 302; instruments for recording illustrations, xi, 303.  
Earths, new. See Chemistry.  
Earth-tremors, vii, 223.  
Earth-worms, Darwin on, vi, 224.  
Eassie, William, sketch, xiii, 661.  
East Africa, xv, 264; xvi, 263; xvii, 241, 300; xviii, 269.  
East African Company, xiv, 831.  
Easter Island, ix, 275.  
Eastern Churches, ix, 277.  
Eastern question, the, ii, 261; iii, 252; v, 224; maps, i, 751, 754; iii, 722, 789; v, 225; conference on, i, 771; ii, 281, 723; Russia's declaration of war, ii, 282; policy of France, ii, 307; iii, 344; contest for Dulcigno, v, 543; new phase, vi, 839; Turkey and Germany, vii, 802; discussed in Hungary, ii, 379; in Italy, ii, 409; iii, 458; iv, 526; in England, ii, 362, 367; iii, 397; v, 331, 333, 335, 343; enforcing reforms in Asia Minor, iv, 833; Turco-Grecian dispute, v, 345; Montenegro frontier, v, 542; in Austria, ii, 55; iii, 43, 44; xi, 69; in Germany, iii, 378; in Greece, iii, 408; relation to Bulgaria, iii, 67; to Persia, iv, 724; Berlin Congress, iii, 255; treaty between England and the Porte, iii, 258; Russia held by the European League, vii, 705.  
Eastern Roumelia, iv, 324; Constitution of, v, 227; proposed union with Bulgaria, v, 67, 68, 228; insurrection in, v, 229; x, 108, 714.  
East Harbor, Me., cottage at, illustration, xii, 364.  
East Indies, Dutch, xvi, 564.  
East Orange, N. J., xviii, 168.  
Eastman, Harvey G., obit., iii, 636.  
Eastman, Joel, obit., xi, 675.  
Eastman, M. E., obit., ii, 579.  
Eastman, Timothy C., obit., xviii, 549.  
Easton, Pa., xvii, 110.  
East River Bridge, viii, 311; illustration, iii, 281.  
Eaton, Amos B., obit., ii, 579.  
Eaton, Hosea Ballou, obit., xii, 583.  
Eaton, L., obit., xv, 645.  
Eaton, Margaret L., sketch, iv, 326.  
Eau Claire, xiii, 163.  
Eberhard, Rt. Rev. M., obit., i, 632.  
Eberlin, x, 398.  
Ebers, George, x, 35, 36.  
Ebersberg, Ottokar Franz, obit., xi, 715.  
Ecclesiastical courts, viii, 8.  
Ecclesiastical funds, rights over the Bernard affair, viii, 57.  
Eckles, D. R., sketch, xiii, 633.  
Eclipse of April 16, 1893, xviii, 46.  
Eclipse of the sun, vii, 33; viii, 20; x, 49; xi, 49; xii, 41.  
Eclipses. See Astronomy.  
Economic Council, created in Prussia, v, 640.  
Ecuador, statistics, government, in every volume; sectional jealousy, i, 241; rebellion, 241; map, ii, 267; views in, illustrations, i, 241; iii, 260; revolutionary warfare in, i, 242; ii, 266, 268; iii, 260; vi, 225; viii, 287, 288; ix, 281; eighth constitution of, vii, 225; volcanic eruptions, ii, 268; x, 303; xi, 306; earthquake, viii, 288; xi, 281; xii, 232; awarding of contracts, iv, 328; closing of schools, v, 231; debt, vi, 228; brutality to prisoners, x, 303; treatment of foreigners, x, 303; xi, 304; gold mines, xi, 305; religious intolerance, ix, 282.  
Eddy, H. T., ix, 44.  
Eddy, Zachary, obit., xvi, 618.  
Eddystone lighthouse, undermined, ii, 276; the new, iii, 286; iv, 343; vii, 283.  
Edelsheim-Gynlai, Baron Leopold, obit., xvii, 579.  
Edgell, Admiral H. E., obit., i, 632.  
Edgerton, Joseph Ketchum, obit., xviii, 549.  
Edhem Pasha, sketch, ii, 268.  
Edison, T. A., sketch, iii, 261; analysis of his genius by G. B. Prescott, iii, 262; inventions by, i, 518; the phonograph, ii, 638; vi, 252, 256; improvements by, viii, 304; electric railway, viii, 677; observations by, iii, 34; the megaphone, iii, 537; microtasmeter, iii, 563; lamp, iv, 335; ix, 305; steam dynamo, with illustration, ix, 308; vii, 270, 275.  
Edmonds, Richard, obit., xi, 715.  
Edmondstone, John, obit., xi, 715.  
Edmunds, G. F., sketch, v, 231.  
Edmunds law, ix, 791; x, 764, 773.  
Edmunds-Tucker act, the, xii, 789.  
Edoux, M. L., invention, vi, 246.  
Edson, Franklin, ix, 589; x, 640.  
Education, and illiteracy in the United States, statistics, etc., vii,



- 225; technical, in Saxony, vi, 229; technical, in Pennsylvania, iii, 680; iv, 719; vi, 549; in Massachusetts, xii, 233; in New Jersey, v, 564; xii, 238; vi, 410; iv, 663; reform in Russia, viii, 708; religious, i, 67, 364, 583, 704; iii, 579; iv, 77, 773, 825; v, 44, 54, 56; vi, 58, 828; vii, 591, 775; Old Catholics on, ii, 622; Leo XIII on, vi, 792; Bible-reading in schools, ii, 132; v, 380; reactionary law in Austria, viii, 47; Ferry bill in France, iv, 390; v, 281; denounced, iv, 394; Episcopal, v, 633; in Ireland, iii, 403; iv, 453; new law in Japan, iv, 529; higher, vi, 49; vii, 31, 339, 481, 508, 536, 796; Magyar school, v, 370; Greek and Bulgarian, ii, 372; Indian, i, 400; Afghan, iv, 7; colored schools, ii, 697; iv, 538, 563, 588; vi, 7, 727; Boston system, iv, 602; New York system, iv, 677; xii, 234; in Missouri, xii, 236; in Illinois, 236; in Ohio, 236; in Maryland, 237; in Pennsylvania, 237; North Carolina bill, iv, 688; qualifications of teachers, iv, 577; v, 564; vi, 574; normal schools, iii, 621; iv, 845; vi, 470; reform schools, v, 567; vi, 463; free high-schools, iii, 511; in Canada, viii, 539, 585, 610; changes in Great Britain, vi, 373; right to exclude pupils, iii, 430; case in Philadelphia, vi, 793; in New Mexico, xii, 544; geography in, xii, 316; industrial, xii, 232; bequest for, xii, 663; of Indians, 386; compulsory, in Germany, xi, 390; in Hawaii, xii, 350; in Nebraska, xii, 576; attitude of Mormons toward, in Idaho, xii, 372; conscience clause of, ix, 12; secularization of, in Belgium, ix, 78; of women, recent progress in, xi, 306; national aid to, 263; in India, xii, 382; statistics of, xvi, 842; xvii, 762. And see the articles on the States.
- Education, Industrial, xii, 232.
- Education, recent works on. See Literature, in every volume.
- Edward, Thomas, obit., xi, 715.
- Edwards, Amelia B., x, 35; obit., xvii, 590.
- Edwards, Henri Milne-, obit. and portrait, x, 304.
- Edwards, Henry, obit., xvi, 618.
- Edwards, J. N., sketch, xiv, 629.
- Edwards, Sir B., obit., i, 632.
- Edwards, W. W., obit., i, 616.
- Eels, James, obit., xi, 676.
- Egan, W. B., obit., iii, 636.
- Egerton, invention by, ii, 498.
- Eggert, F. X., sketch, i, 242.
- Eggertz, experiments by, vi, 97.
- Eggleston, B., sketch, xiii, 633.
- Egleston, T., ix, 477.
- Egypt, in every volume; maps, vii, 252; viii, 291; ix, 237; aims of the powers in, ix, 290, 291; brigandage in, ix, 286; religion in, ix, 279; benefits of English rule in, xii, 242; finances of, and exploration in, see Egyptian Chronology, Egyptian Exploration, and Egyptian Finances; archaeological survey of, xvii, 12.
- Egyptian Chronology, vii, 255.
- Egyptian Conference, ix, 289.
- Egyptian exploration, ix, 20; exploration fund, x, 35; xi, 27; xii, 18; xiii, 28. See Archaeology.
- Egyptian Finances, i, 244; ii, 269; iii, 263; iv, 329; Khedive's decree, iv, 331; v, 233; vi, 232; ix, 282, *et seq.*; French and English intervention, vii, 236, 250; new scheme, vii, 363; Italian feeling on, vii, 437; viii, 292; Anglo-French agreement, ix, 288. See Egyptian War.
- Egyptian Monuments, vii, 258; ix, 19.
- Egyptian War, the, causes leading to, vii, 232; intervention of French and English, 236; bombardment of Alexandria, 244; conference at Constantinople, 244, 248; campaign, 251; Egyptians defeated, 254; questions of settlement, viii, 289-297; political trials, 297; amnesty, 298; ix, 292, *et seq.*
- Egyptians, modern, illustration, ii, 271.
- Egyptological and Assyriological Research, vii, 255.
- Ehninger, J. W., sketch, xiv, 629.
- Ehrbar, F., invention by, i, 518.
- Ehrenberg, C. G., sketch, i, 248.
- Ehrenfeuchter, obit., iii, 654.
- Ehrlich, L., x, 159.
- Eichberg, Julius, obit., xviii, 549.
- Eichens, F. E., obit., ii, 599.
- Eichwald, K. E., obit., i, 632.
- Eiffel Tower, the, xiii, 309, 310.
- Einwald, Herr, x, 137.
- Eira, cruise of, vi, 325; vii, 334.
- Ekert, Gustav, obit., xvii, 590.
- Ekin, James A., obit., xvi, 619.
- Ekmann, G., obit., i, 632.
- Ekmeen, relics at, ix, 22; necropolis of, x, 33.
- Elatea, inscribed stone found at, x, 37.
- Elbers, H. D., invention by, xi, 537.
- Elbirin-Kir Mountains, x, 67.
- El Coco, engagement at, x, 466.
- Elder, John, x, 62.
- Elder, P. P., nominated, xiii, 462.
- Elder, Robert, obit., xii, 583.
- Eldridge, Dr. E., obit., i, 616.
- Election frauds, xiii, 440, 841; xiv, 35.
- Election laws, x, 321.
- Election sermons, vi, 534.
- Elections: presidential, of 1876, i, 298, 779; of 1868, x, 432; of 1880, v, 702; of 1884, ix, 149, 210, 774; x, 228; of 1888, xiii, 799; of 1892, xvii, 755; proposed amendment regarding, i, 132, 158; Pres. Grant on, i, 685; disqualifications of candidates, i, 702; bill on counting votes, ii, 137; iii, 167; iv, 207; vi, 176; ix, 210; debate on rights at, iv, 194, 226; on marshals, v, 152; electoral vote, x, 228; regulation for counting the electoral vote, xii, 165; bill on counting votes, ii, 137; President's message on, ii, 163; work of Electoral Commission, ii, 169; ix, 627; xi, 820; reports on frauds, iii, 712; Tilden on, iii, 717, 802; Anderson trial, iii, 494; of Greek patriarch, xii, 773; special, in Rhode Island, xii, 714; Crawford County plan of, xii, 247; Clarion County plan of, xii, 248; Australian system, vii, 246; counting the votes, xiv, 212; comparative tables of, xiii, 799-828.
- Election riots, i, 71; v, 22, 204, 275.
- Elections, contested, i, 297; ii, 455, 694, 748; iii, 334; iv, 394, 532, 582; v, 486; vii, 564; proceedings in, xii, 384, 386; State acts to prevent frauds and corruption, ii, 515, 572, 748; iv, 108, 497, 601; v, 202, 418, 717; vi, 205, 535; viii, 410, 567; power of Congress touching, viii, 474; Federal interference, ii, 710; iv, 561; primary, New York, bill, vii, 600; contested in the Congress of the United States, xiii, 235.
- Elections, Laws, Customs, and Theories of, xii, 244; of Austria, vii, 46; of Italy, vii, 438.
- Electoral Reform in Belgium, xviii, 74.
- Electrical energy, storage, vii, 264.
- Electrical Exhibition, ix, 304.
- Electric engineering, xv, 287.
- Electricity, i, 248; dimensions of iron in current, i, 251; applications of, i, 518-520, 740; ii, 497, 498; effect on plants, iii, 725; exhibition at Paris, vi, 252; recent theories, vi, 239; measurement, vi, 259; possible applications, vi, 548; xi, 545; xii, 494; applied to the treatment of ores, 485; x, 578; in welding, xii, 486; xiii, 536; xiv, 549, 698; xv, 536, 715; exhibition, xiv, 586; lighting, 812; xvi, 730; xviii, 621.
- Electric launches, xviii, 282.
- Electric Light, nitric acid from, iv, 135; vegetation under, v, 237.
- Electric Lighting, iii, 269; v, 238; illustrations, v, 239, 240; Edison's, iv, 335; systems, vi, 252; ix, 304, 515; progress of, vii, 268; act of Parliament on, vii, 366; progress, viii, 302; use in France, i, 520; candles and lamps, illustrations, iii, 271-274; the alliance machine, illustrations, iii, 275-278.
- Electric locomotive, xviii, 281.
- Electric motors, i, 251; ix, 307, 309.
- Electric propulsion, xviii, 280.
- Electric railways, viii, 675; ix, 310.
- Electroplating, ii, 498; vii, 533; with aluminum, xii, 433.
- Elements, new, iii, 86; iv, 137; xi, 139; nature of, iii, 91; iv, 133; vi, 240; constitution of the, ix, 120; table of atomic weights, vi, 41; families, vi, 42.
- Elephants, Indian, use of, in African exploration, iii, 362.
- Elfvig, Nere A., xvi, 619.
- Elgin, Ill., xv, 126.
- El Hadsh, sketch, i, 570.
- Elio, Joaquin, sketch, i, 252.
- Eliot, George, sketch, v, 241.
- Eliot, S. H., xi, 545.

- Eliot, William G., obit., xii, 584.  
 Elixir of life, xiv, 287.  
 Elizabeth, N. J., xi, 169; bankrupt, iv, 669.  
 Elkhart, Ind., xvii, 111.  
 Elkin, observations by, viii, 26; ix, 47.  
 Elkins, Stephen B., sketch and port., xvi, 831.  
 Ellena, Vittorio, obit., xvii, 590.  
 Eliet, Mrs. E. F., sketch, ii, 272.  
 Elliot, Charles, obit., xvii, 546.  
 Elliott, E. B., sketch, xiii, 633.  
 Elliott, George W., xvi, 619.  
 Elliott, J., observations, iii, 37.  
 Elliott, J. H., D. D., obit., ii, 579.  
 Elliott, Judge John M., murder of, iv, 541.  
 Elliott, H. W., vii, 7.  
 Elliott, W., Jr., obit., xv, 645.  
 Elliott, W. L., sketch, xiii, 633.  
 Ellis, E. John, sketch, xiv, 629.  
 Ellis, Sumner, obit., xi, 676.  
 El Mahdi. See Mahdi.  
 Elmira, N. Y., xi, 169; Reformatory, xii, 703.  
 Elmore, H. M., obit., iv, 693.  
 El Obeid, taken by El Mahdi, viii, 300.  
 El Paso, Tex., xv, 126.  
 Elsberg, Louis, obit., x, 647.  
 Elsinore, Kronborg castle at, illustration, ii, 250.  
 Ellsler, Fanny, obit. and portrait, ix, 310.  
 El Teb, battle of, ix, 293, 295.  
 Elton, Capt., discovery, iii, 363.  
 Eltzbaecker, experiments by, x, 157.  
 Elwart, A. A. E., obit., ii, 599.  
 Ely, Alfred, obit., xvii, 546.  
 Ely, J. S., experiments by, vii, 690; viii, 635.  
 Ely, Nathan C., obit., xi, 676.  
 Ely, Minn., xiii, 163.  
 Ely, Marchioness, obit., xv, 679.  
 Elze, Karl, sketch, xiv, 660.  
 Emancipation, in Brazil, viii, 67; xii, 73; xiii, 105; in Cuba, x, 215.  
 Emanuel, M., obit., v, 592.  
 Embezzlement, act on, in Connecticut, iii, 216.  
 Embroidery, ix, 248.  
 Emerald, the largest, x, 179; artificial, xviii, 644.  
 Emerson, Ralph Waldo, sketch, vii, 277.  
 Emery-wheels, xii, 248.  
 Emigration, German, vii, 348; xiv, 268; to Palestine, viii, 614; state-aided, from Ireland, viii, 418; of coolies from India, viii, 440; from Italy, viii, 449. See Chinese and Exodus.  
 Emin Pasha (Dr. Schnitzler), x, 394; xi, 312, 367; xii, 250, 301; sketch, xiii, 295; his expedition, xvi, 266.  
 Emine, N. O., obit., xvi, 670.  
 Emma Kaleleonalani, obit., portrait, and house, x, 326.  
 Emmerich, Dr., x, 800.  
 Emmerich, R., obit., xvi, 670.  
 Emmet, Joseph K., obit., xvi, 619.  
 Emmons, S. F., x, 404; xi, 538.  
 Emmonsite, new mineral, xii, 106.  
 Emott, J., obit., ix, 604.  
 Emperors, meeting of three, ix, 64, 356; xi, 391; meeting of two, x, 69, 70.  
 Employers' liability, ix, 379, 432.  
 Emporia, Kan., xv, 126.  
 Ennu, the, illustration, ii, 51.  
 Eneke, his estimate of the sun's distance, ix, 49; his comet, x, 50.  
 Endicott, William C., sketch, x, 757; portrait, 759.  
 Engel, Prof., x, 154; invention by, 345.  
 Engelhard, J. A., sketch, iv, 339.  
 Engelmann, T. W., ix, 517.  
 Engineering, in every volume but xvi.  
 Engines, solar, vi, 251; improvements in steam, ii, 494, 495; vi, 545; the water-gas, x, 384.  
 English, the, in Asia, vi, 732; ix, 714; in Africa, ix, 363; x, 137, 795, 796; in Sumatra, ix, 558; benefits of their rule in Egypt, xii, 242. See also under Africa and Asia in articles on Geographical Exploration.  
 English Channel Tunnel Panic, vii, 284.  
 English, Earl, obit., xviii, 550.  
 English, J. E., sketch, i, 203; obit., xv, 645.  
 Engravings, famous collection of, xii, 277.  
 Enlhedjian, Abbé, obit., xi, 715.  
 Enlistment Act, British foreign, x, 171.  
 Eno, John C., ix, 329.  
 Enoch, W. H., obit., xviii, 550.  
 Enraght, Rev. W., case of, vii, 17.  
 Ensilage, xvi, 709. See Silos, vi, 808; an analysis of, ix, 127.  
 Entail, law of, changes, x, 457, 522.  
 Entero-Chlorophyl, ix, 658.  
 Entomological Club, the, xviii, 31.  
 Entomologists, Association of Economie, xviii, 31.  
 Envelopes, paper, xi, 734; illustrations, xi, 735, 736, 737; stamped, special-request, and letter-sheet, xii, 686.  
 Eolian Harp, x, 607.  
 Eosin, i, 102.  
 Ephesus, temple at, xiv, 20.  
 Epidemic Diseases in 1883, viii, 317; xiii, 311; sanitary control of, vii, 286; maps of infected districts, vii, 291, 292; prevention of the spread of, x, 506.  
 Episcopal Church in the United States, xiii, 708; xiv, 720; xv, 749; xvi, 762; xvii, 673; xviii, 658; in Japan, xviii, 13.  
 Equalla Jim, chief, x, 121.  
 Equatorial Coudé, the, ix, 47.  
 Equatorial provinces, xiii, 294.  
 Equites Singulares, barracks of, xi, 35.  
 Erdmann, J. E., obit., xvii, 590.  
 Eretria, tombs at, xvi, 18.  
 Erichsen, A. L. von, obit., i, 632.  
 Ericsson, John, sketch, xiv, 296; port., frontispiece.  
 Erie Canal, xiii, 606.  
 Erie Custom-House, illustration, xii, 120.  
 Erk, Ludwig, obit., viii, 599.  
 Erman, G. A., obit., ii, 599.  
 Ernst II, Duke of Saxe-Coburg-Gotha, obit., xviii, 579.  
 Errett, Russell, obit., xvi, 619.  
 Ersari Turkomans, the, x, 7.  
 Erskine, Admiral, ix, 639, 640.  
 Eruptions, volcanic, xi, 66, 306, 557, 653; xvii, 489.  
 Erysipelas, viii, 753.  
 Erythea, xv, 458.  
 Erythro-ceralloides, xi, 140.  
 Escourt, Sir T. H., obit., i, 632.  
 Esecurl, the, illustration, i, 728.  
 Esmonde, Sir J., obit., i, 632.  
 Espana, Capt., x, 141.  
 Espartero, Duke, sketch, iv, 348.  
 Espen, T. E., observations by, vi, 39; vii, 40; viii, 27.  
 Esquiline Hill, necropolis at the, xi, 34.  
 Esquiros, H. A., sketch, i, 258.  
 Este, D. K., obit., i, 616.  
 Estee, M. M., sketch, vii, 82.  
 Estorge, J. L., obit., v, 592.  
 Estrup, J. B. S., ix, 253; x, 290, 292; attempt to assassinate, 293.  
 Étex, Antoine, sketch, xiii, 661.  
 Ether, the, xvi, 725.  
 Etherization, rectal, ix, 747; in cholera, x, 800.  
 Ethnology, bureau of, xii, 15.  
 Ethylene, for liquefying oxygen, x, 152.  
 Etna, eruption of, viii, 286; xi, 380; new crater, 380.  
 Ettmüller, E. L., obit., ii, 599.  
 Eulenberg, Count, obit., vi, 692.  
 Eulenberg, Prof., investigations by, x, 689.  
 Eulexia, x, 151.  
 Euonym, x, 299.  
 Euphorbia pilulifera, x, 299.  
 Europe, in volumes i to v inclusive.  
 Evangelical Alliance, the, i, 261; ii, 282; iv, 350; xiv, 300; xvi, 274; on intolerance in Bohemia, iv, 351; ix, 316.  
 Evangelical Association, in every volume but ix, xi, xvi, and xvii.  
 Evangelical Union of Scotland, iii, 294; xiv, 300; xv, 168.  
 Evans, Frederiek William, obit., xviii, 550.  
 Evans, Marian. See Eliot, George, v, 241.  
 Evans, William, obit., iii, 654.  
 Evanston, University Hall at, illustration, ii, 385.  
 Evarts, William, obit., iii, 636.  
 Evarts, W. M., sketch, ii, 284; etched portrait, ii, 284; speech on Seward, i, 717.  
 Eve, Dr. P. F., obit., ii, 579.  
 Events of 1883, viii, 321; of 1884, ix, 317; of 1885, x, 334; of 1886, xi, 323; of 1887, xii, 262; of 1888, xiii, 318; of 1889, xiv, 301; of 1890, xv, 288; of 1891, xvi, 276; of 1892, xvii, 256; of 1893, xviii, 286.  
 Everest, not the highest mountain, ix, 349, 543, 544.  
 Everett, experiments, ii, 500.  
 Everglades, the, viii, 342.  
 Eversley, C. S. L., sketch, xiii, 622.  
 Everts, W. W., obit., xv, 645.  
 Evictions, in Ireland, xii, 339; xiv, 391.  
 Ewald, Prof., experiments, x, 693.  
 Ewer, F. C., obit., viii, 588.  
 Ewing, Charles, obit., viii, 588.  
 Examinations for civil service. See Reform in the Civil Service, viii, 684; ix, 690.  
 Exchange, Copenhagen, illustration, i, 228.  
 Exchange, foreign, xiii, 325.  
 Exercise, physiology of, vii, 688; of infants, 689.



- Execution by electricity, xiv, 598.  
 Executive mansion, Mrs. Harrison's plan for enlargement, xvii, 332.  
 Exhibition, Centennial, i, 22, 262, 685, 778; appropriation for, 193-202; illustrations of, 264, 265, 272, 273, 275, 277, 278, 279; leather, in Berlin, ii, 352; paper, in Berlin, iii, 381; arts, in Japan, ii, 414; Australian, ii, 52; iv, 55; v, 39, 40; Paris, iii, 294; Egyptian contribution to Paris, iii, 268; appropriation of Denmark, ii, 249; of electricity at Paris, vi, 252; Atlanta cotton, vi, 260; Southern, at Louisville, viii, 464; in Santo Domingo, viii, 718; in Calcutta, ix, 407; New Orleans, ix, 573; Colonial, xi, 60; in Antwerp, x, 91; in Hungary, x, 73; Paris, of 1889, xii, 297; South Sea, xiv, 609.  
 Exhibitions, picture. See Fine Arts.  
 Exner, experiments by, vi, 748; vii, 688.  
 Exodus of colored people, iv, 354, 537, 634; v, 417; vi, 812.  
 Expedition to the Upper Welle, xviii, 187.  
 Expeditions, Natanga, xviii, 189.  
 Exploration, xiii, 65, 97, 106, 225.  
 Explorers, see under Geographical Exploration, in every volume; murder of, iv, 6.  
 Explosions, boiler, causes and prevention of, vi, 259; experiments, vii, 296.  
 Explosives, ii, 626; iii, 93; iv, 131; German law on, ix, 357; x, 342; new, x, 153; xi, 140; high, xvi, 552.  
 Exposition, Centennial. See Exhibition, Centennial.  
 Exposition, International Cotton, at Atlanta, vi, 260.  
 Exposition, midwinter, in California, xviii, 120.  
 Exposition, New Orleans, ix, 573.  
 Exposition, Paris, iii, 294; xiv, 341. And see World's Fair.  
 Express companies, liability of, ii, 753; v, 14.  
 Extradition treaties, i, 232, 361, 733; difficulty with Mexico, ii, 513, 712; with Spain, ii, 699; decisions on, iii, 473; v, 585; case of Randazzo, vi, 451; United States and Belgium, vii, 67; viii, 157. See Winslow.  
 Eyck, Jan van, xi, 346.  
 Eye, the human, attempts to replace, x, 742; xiii, 754.  
 Eye-sight, its defects and treatment, vi, 271.  
 Eytinge, experiments by, vii, 33.  
 Fabbriizzi, N., obit., x, 660.  
 Faber, P. C. F., obit., ii, 599.  
 Fabre, Père J., obit., xvii, 591.  
 Fabrice, Count von, obit., xvi, 670.  
 Faccio, F., obit., xvi, 670.  
 Factory-inspection, in New York, xii, 549.  
 Factory legislation, xiv, 583.  
 Fahlberg, Dr. C., xii, 109.  
 Fahnejeim, invention by, x, 344.  
 Faider, Charles, obit., xviii, 579.  
 Faidherbe, L. L. C., sketch, xiv, 660.  
 Failures in business, 1883, viii, 327.  
 Faience, viii, 641.  
 Fairbanks, Horace, 797; sketch, xiii, 633.  
 Fairbanks, Thaddeus, obit., xi, 676.  
 Fairchild, Charles Stebbins, sketch and portrait, xii, 775.  
 Fairfield, Francis Gerry, obit., xii, 585.  
 Fairhaven, Wash., xvi, 155.  
 Fairlie, R. F., obit., x, 660.  
 Fair Oaks, battle of, x, 558.  
 Fair-Trade League, xi, 328.  
 Fairy rings, ix, 127.  
 Faith-Cure, xi, 329.  
 Fakoos, x, 36.  
 Falchi, Dr. L., archaeological discovery, xi, 35.  
 Falk laws, the, iii, 736; iv, 773; vi, 792; vii, 357, 358 (note); viii, 395.  
 Falk, Prof., xii, 673.  
 Falke, J. F. G., obit., i, 632.  
 Falkenhayn, Count, iv, 60.  
 Falkland Islands, vi, 274; xiii, 37; xv, 407; xvi, 346; xvii, 327.  
 Fall River, Mass., xi, 169.  
 Fallières, M., viii, 366.  
 Fallows, Samuel, sketch, i, 698.  
 Falls, M. N., obit., i, 616.  
 False Prophet, the. See Mahdi.  
 Famines, in China, i, 110; ii, 100; iii, 98; xviii, 150; in India, i, 404; ii, 42, 392; iii, 436; iv, 494; vi, 419; in Brazil, iii, 64; in Egypt, iv, 334; caused by goats, in India, ix, 406; in Asia Minor, xii, 774; xiv, 141, 425, 572; partial, xvii, 349; in Ireland, xv, 295; in Russia, xvi, 784.  
 Famine, in Persia, v, 623; in Turkey, v, 690; in Iceland, vii, 191; in Highlands, viii, 418.  
 Fanfani, P., obit., iv, 699.  
 Faneuil Hall, illustration, i, 512.  
 Faralep Island, x, 139.  
 Faran, J. J., obit., xvii, 546.  
 Fargo, William C., obit., iii, 636.  
 Fargo, William G., obit., vi, 682.  
 Fargus, F. J., obit. and portrait, x, 347.  
 Faribault, Minn., xvi, 155.  
 Faris, Ahmed Effendi, obit., xii, 627.  
 Farley, F. A., obit., xvii, 546.  
 Farley, J. T., sketch, ii, 285; obit., xi, 677.  
 Farmer, Moses G., obit., xviii, 550.  
 Farmers', Minn., Board of Trade, iv, 623; Cal., convention of, vii, 82; xi, 806; xiii, 460, 618; xiv, 9, 307; xvi, 284; congress, xi, 330; xvii, 263; xviii, 293; alliance, xv, 299; league, xvi, 858.  
 Farms and live-stock in the United States, vii, 298; abandoned, xv, 515, 599; xvi, 575; xvii, 215.  
 Faroe Channel, ridge in, vii, 331.  
 Farr, E. W., obit., v, 592.  
 Farre, Arthur, obit., xii, 627.  
 Farre, Gen., sketch, iv, 386.  
 Farrell, Thomas, obit., v, 592.  
 Farrelly, Philip, obit., iii, 636.  
 Farwell, Nathan A., obit., xviii, 550.  
 Fassiller, discovery at, xiii, 33.  
 Fata Morgana, the, illustration, xi, 565.  
 Fat-cells, vii, 689; controversy on the formation of, ix, 273.  
 Fathers of the Holy Spirit, the, x, 712.  
 Fatigue, experiments on the laws of, xii, 676.  
 Faucher, Julius, obit., iii, 654.  
 Faulkner, C. J., obit., ix, 605.  
 Faulkner, L. B., obit., xv, 645.  
 Faunce, John, obit., xvi, 619.  
 Faure, C. A., inventions by, vi, 254; vii, 285.  
 Faurie, G. A., new process with alumina, xii, 482.  
 Faustle, Johann, obit., xii, 627.  
 Favre, A., experiments by, iv, 379.  
 Favre, J. C. G., sketch, v, 255.  
 Favre, L., work on the St. Gothard Tunnel, iii, 290.  
 Fawcett, Henry, sketch and portrait, ix, 323.  
 Fawcett, Millicent G., ix, 323.  
 Fawkes, Capt. H., obit., i, 633.  
 Fawsitt, Miss Amy, obit., i, 616.  
 Fay, F. B., obit., i, 616.  
 Fay, Julius A., obit., xvi, 620.  
 Fayerweather, D. B., obit., xv, 645.  
 Fayerweather, Lucy, obit., xvii, 546.  
 Fayetteville, capture of, x, 429.  
 Fazy, J. J., sketch, iii, 314.  
 Featherstone, W. S., obit., xvi, 620.  
 Featherstonehaugh, G. W., x, 401.  
 Fechter, C. A., sketch, iv, 358.  
 Federal election bill, xvi, 232.  
 Federal jurisdiction. See Law, vi, 477.  
 Federation, British scheme of, ix, 380.  
 Federation in Australasia, xviii, 51.  
 Fee and salary law, in Iowa, xviii, 407.  
 Feeding-stuffs, digestibility of various, xii, 676.  
 Feejee, cannibalism in, i, 53; war-canoes, illustration, ix, 117; controversy over land-titles, x, 419.  
 Fehling, H., obit., x, 660.  
 Feild, E., obit., i, 633.  
 Feizi Pasha, sketch, ii, 285.  
 Félix, C. J., obit., xvi, 670.  
 Felkin, Mr., on technical education in Saxony, vi, 229.  
 Fellows, John F., obit., xii, 585.  
 Fenians, supposed conspiracy of, vi, 370; intended raid into Canada, x, 481.  
 Fenn, Mary, obit., xi, 677.  
 Fenton, Reuben E., obit., x, 348.  
 Fenyes, A., sketch, i, 281.  
 Ferdinand, King, obit., x, 660.  
 Ferdinand of Bulgaria, marriage of, xviii, 116.  
 Ferdinand, Prince, xii, 80.  
 Ferenz, Rev. Joseph, i, 778.  
 Ferghana. See Khokan, i, 775.  
 Fergus, Andrew, experiments by, ix, 728.  
 Fergus Falls, Minn., xviii, 158.  
 Fergusson, Sir W., obit., ii, 599.  
 Ferig Pasha, x, 319; his death, 320.  
 Ferments in fruits, vii, 92.  
 Fernkorn, A., obit., iii, 654.  
 Ferns, ix, 95.  
 Ferran, Dr., cholera experiments of, x, 797, 798.  
 Ferranti's invention, vii, 269, 270.  
 Ferrari, Giuseppe, sketch, i, 282.  
 Ferrari, meteorological observations by, xi, 543; xii, 491.

- Ferrel, William, obit. and port., xvi, 620.
- Ferrer, M. W., sketch, xiii, 633.
- Ferrie, William, method for obtaining ammonia, viii, 114.
- Ferrier, Capt. J. M., obit., i, 616.
- Ferrier, I. P., experiments by, vi, 748; ix, 661; discovery, vii, 37.
- Ferrieri, Cardinal, death of, xii, 717.
- Ferris wheel, the, xviii, 285.
- Ferrous sulphide, as plant food, x, 158.
- Ferry-boat, double-ender-screw, xiii, 301; new type of, xv, 282.
- Ferry Bridge, at Bilbao, xviii, 279.
- Ferry, right of the United States to acquire a, iv, 847.
- Ferry, J. F. C., sketch, iv, 387; bill of, v, 281; fall of ministry of, vii, 324; Cabinet, viii, 367; ix, 340, 341; quoted, 57; Chinese policy of his government, x, 26; Egyptian policy, x, 310, 311; resignation, x, 375; demonstration against and attempted assassination of, xii, 297.
- Ferry, Jules, obit., xviii, 579.
- Fertilizer, vi, 275; of S. C., vi, 814; phosphorite, viii, 701.
- Festetifis, Count Charles A., obit., xvi, 620.
- Feuadent, Gaston L., obit., xviii, 550.
- Feuchtwanger, experiments by, viii, 522.
- Feud, an ancient, ix, 345.
- Feuerstack, experiments, viii, 633.
- Feuillee, Felix M., viii, 357.
- Feuillet, O., obit., xv, 679.
- Feutsche, E., obit., ii, 599.
- Fever, action of remedies, vii, 690; new remedies, ix, 271; x, 300; xi, 289.
- Fever, yellow, iii, 315; iv, 359; vii, 293; map of infected district, vii, 292. See also Health, iv, 466; Epidemic Diseases, viii, 319; and Germ Theory, iii, 387.
- Feyen-Perrin, François, sketch, xiii, 662.
- Fez, British mission to, xvii, 477.
- Fibers, tests for distinguishing animal from vegetable, xii, 110.
- Fichte, I. H., obit., iv, 699.
- Fiction, recent works of. See Literature in every volume.
- Field, Benjamin Hazard, obit., xviii, 551.
- Field, Cyrus West, sketch and port., xvii, 264.
- Field, Mrs. David Dudley, obit., i, 616.
- Field, George R., obit., iii, 637.
- Field, Moses W., sketch, xiv, 629.
- Field, S. D., inventions, viii, 677.
- Fields, James T., sketch, vi, 283.
- Fiertz, Dr., xii, 482.
- Figner, Vera, ix, 711.
- Figueroa, Gen., x, 467.
- Fiji Islands, xiii, 67; xiv, 57; xv, 49. See Feejee.
- Fildes, Luke, x, 365.
- Fillmore, Caroline, obit., vi, 682.
- Finances of Egypt. See Egyptian Finances.
- Finances of India, censure of management of, iv, 492, 494.
- Finances of the United States, in every volume. See also Commerce, etc., vi, 120; vii, 110; and for finances of the various countries and States, see articles on the countries and States in each volume.
- Financial crises over the world, ii, 109; of the United States, xviii, 599.
- Financial depression, in Peru, i, 665; in Chili, iii, 12; in England, iv, 175; in Germany, iv, 180; cause of, iv, 163.
- Financial review of 1883, viii, 332; of 1884, ix, 323; of 1885, x, 348; of 1886, xi, 332; of 1887, xii, 264; of 1888, xiii, 321; of 1889, xiv, 308; of 1890, xv, 301; of 1891, xvi, 285; of 1892, xvii, 268; of 1893, xviii, 294.
- Findlay, Ohio, xiv, 145.
- Fine Arts in 1884-'85, x, 358; in 1886, xi, 342; in 1887, xii, 274; in 1888, xiii, 332; in 1889, xiv, 318; in 1890, xv, 310; in 1891, xvi, 293; in 1892-'93, xviii, 306; at World's Fair, xviii, 312.
- Finland, ix, 706; x, 720.
- Finlay, W. H., discoveries by, vii, 37; xi, 57.
- Finley, Lieut., John P., x, 581.
- Finotti, J. M., sketch, iv, 370.
- Finsch, Dr., x, 681.
- Fique fiber, new material for textile fabrics, xii, 140.
- Fire-arms, etc., Alabama law against carrying, vi, 5.
- Fire-balls, xii, 494.
- Fire-escape, illustrations, xii, 665, 666.
- Firemen, inventions for, i, 518.
- Fire-place and chimney, Galton's, illustrations, v, 360, 362.
- Fires, Brooklyn Theatre, i, 605; Czech Theatre, vi, 50; Vienna Theatre, vi, 51; in Quebec, vi, 221; in Michigan, vi, 586; in Haverhill, vii, 520; in Galicia, xi, 73; in Hungary, xii, 53.
- Firman, Louis, x, 381.
- Firuzhubi tribe, the, x, 8.
- Fischer, Dr. G. A., x, 394; obit., xi, 715.
- Fischer, Gustavus, obit., xviii, 551.
- Fish, culture and preservation of, iv, 668; xv, 596; as a food, viii, 348, 791.
- Fish, Asa I., sketch, iv, 370.
- Fish, Benjamin, obit., v, 592.
- Fish Commission, U. S., viii, 791; x, 764.
- Fish Creek, battle of, x, 125.
- Fish-culture in the United States, with illustrations, viii, 791.
- Fish, Hamilton, obit. and port., xviii, 551.
- Fish, Rev. Henry C., obit., ii, 579.
- Fischer, Charles, obit., xvi, 621.
- Fisher, Charles H., obit., xiii, 633.
- Fisher, E. J., obit., xv, 646.
- Fisher, George Jackson, obit., xviii, 551.
- Fisher, H. G., obit., xv, 646.
- Fisher, Sir J. W., obit., i, 633.
- Fisheries, Chinese, in California, iii, 71; protection in California, v, 75; salmon, in Oregon, iii, 671; vii, 670; viii, 612; shad, in Maryland, iv, 591; on the Connecticut River, vi, 639; New Jersey, vii, 598; French, in Newfoundland, xi, 406; xiii, 510, 706, 846; xv, 240, 263; xvi, 568, 601; treaty, xiii, 217; Alaskan, xiv, 212.
- Fisheries of United States in 1880, vii, 309.
- Fisheries, U. S., statistics, viii, 795; xvi, 847.
- Fishery Convention, International, vii, 590.
- Fishery Exhibition at Berlin, v, 321; representation of United States at, v, 150.
- Fishery Questions, between United States and Canada, ii, 15, 253; iii, 247; iv, 15; v, 218; vi, 776; x, 132; xi, 131; payment and protest, iii, 242; President Hayes on, v, 643; Fortune Bay outrage, v, 218; x, 132; French Shore Question, xi, 614; riots, xii, 66; bill to protect, xii, 178; review of the subject from the time of the Revolutionary War, xii, 280-285; treaties, 281, 282; recent disputes, 282; the American case, 283; retaliatory legislation, 283; diplomatic arrangements, 284; French rights, 284; North Pacific dispute, 284.
- Fishing, in British Columbia, salmon, xviii, 109; seal, xviii, 109.
- Fisk, C. B., obit., xv, 646.
- Fisk, P. K., obit., xv, 646.
- Fitch, Graham N., obit., xvii, 546.
- Fitchburg, Mass., xv, 126.
- Fitton, James, obit., vi, 682.
- Fitts, J. F., obit., xv, 647.
- Fitz, Benjamin R., obit., xvi, 621.
- Fitzau, experiments by, vi, 41.
- Fitzgerald, Sir J. F., obit., ii, 599.
- Fitzroy, Capt., vii, 183.
- Fitzgerald, Prof., address, xiii, 45.
- Fitzhugh, W. E., sketch, xiv, 629.
- Fitzmaurice, Lord E., ix, 296.
- Five-cent-fare bill, the, ix, 147.
- Five Forks, battle of, x, 429, 430.
- Flag, Coreau, xiv, 239; new United States, 814.
- Flagg, W. C., obit., iii, 637.
- Flageolet-player, x, 613.
- Flame, luminosity of, iii, 85; temperature, 93.
- Flameng, F., x, 358, 363; xii, 275.
- Flanders, castle of the counts of, illustration, iii, 56.
- Flasch, Kilian, obit., xvi, 621.
- Flatters, G., explorations, v, 293.
- Flaubert, G., obit., v, 599; x, 358.
- Flavia, Publicia, statue of, ix, 27.
- Flax and hemp statistics, xvii, 764.
- Flax, culture of, xi, 532.
- Flegel, R. E., observations, v, 290; ix, 348; x, 393; obit., xi, 715.
- Fleischer, H. L., sketch, xiii, 662.
- Fleischer, K. M., obit., i, 633.
- Fleitman, Dr., discoveries by, vi, 542; viii, 522.
- Fleming, A. B., nominated, xiii, 842.
- Fleming, F. P., nominated, xiii, 341.
- Fletcher, Alice C., ix, 16, 44; x, 45.
- Fleteher, A. E., xii, 106, 108.
- Fleteher, Thomas, experiments by, xi, 742.
- Fleury, E. F., obit., ix, 616.
- Flexible metallic tubes, xvi, 711.
- Flint, Austin, obit. and portrait, xi, 348.
- Flint, Charles L., sketch, xiv, 629.



- Flint, Franklin F., obit., xvi, 621.  
 Flint, Mich., xviii, 158.  
 Flood, James C., sketch, xiv, 639.  
 Flood Rock, x, 473; illustrations of excavations, x, 473, 474; explosion, 475.  
 Floods, in China, i, 110; viii, 128; xviii, 150; in South America, i, 333; in Germany, i, 348; viii, 397; in Hungary, i, 388; iv, 477; in Nevada, iii, 601; in France, i, 318; in Illinois, v, 380; protection against, in Mississippi, iv, 635; in Arkansas, vii, 31; in Tyrol, vii, 59; in Italy, vii, 438; in Louisiana, vii, 480; xviii, 464; in Missouri, xviii, 499; in the Ohio Valley, viii, 339; in Pennsylvania, xviii, 610; xiv, 531, 598, 688; xv, 509; xvii, 471.  
 Floquet cabinet, xiii, 346; xiv, 333.  
 Floquet, M., ix, 342; x, 376; xii, 291.  
 Florence, Ala., xiv, 146.  
 Florence, William J., obit. and port., xvi, 621.  
 Florida, government, legislative proceedings, statistics, nominations, and elections, in each volume; illustrations, i, 296, 297, 300; presidential election of 1876, excitement and investigation, i, 297-306; ii, 297; State election investigations, iii, 334; iv, 374; v, 274; frauds, 275; issue of bonds, iv, 371; Indian Trust Fund bonds, v, 269; railroads, iv, 373; v, 272; vii, 312; xii, 287; climate, iii, 331, 332; ship-canal project, iv, 377; vi, 312; ix, 332; harbor improvement appropriations, v, 273; need of coast defenses, xii, 288; proposed reclamation of swamp-lands, vii, 312; viii, 342; ix, 332; xii, 287; cold weather in, xi, 350; minerals in, xii, 288; constitutional convention, x, 368; population, xv, 319; by races, xvi, 300; phosphates, xviii, 315.  
 Flotow, F. von, obit., viii, 599.  
 Flourens, theory of, viii, 634.  
 Flower, a State, xvi, 580.  
 Flower, W. H., port., xiv, 39.  
 Floyd, Gen. John B., x, 423.  
 Floyd, Sally B., sketch, iv, 378.  
 Fludyer, Sir S., obit., i, 633.  
 Fluorine, free, vi, 99.  
 Flute, mechanical, x, 613.  
 Fluting-machine, extension of patent, xii, 650.  
 Fly River, explored, iv, 409.  
 Flying Dutchman, the, illustration, xi, 567.  
 Fogg, George G., sketch, vi, 301.  
 Fogs and Clouds, Genesis of, v, 275; fog-signals, v, 447; viii, 719.  
 Foix, Count of, ix, 345.  
 Foley, Thomas, sketch, iv, 379.  
 Folger, Charles J., sketch, v, 576, and ix, 334; portrait, vii, 807.  
 Folkhard, Charles W., xi, 111.  
 Fonseca, Deodoro da, sketch and port., xiv, 327.  
 Fonseca, M. D. La, obit., xvii, 591.  
 Foltz, Philipp von, obit., ii, 600.  
 Fontaine, locomotive of, vi, 511.  
 Fontpertuis, Ad. de, vii, 70.  
 Foo-Chow, Chinese picture of the battle of, ix, 142.  
 Food-Preservation, vii, 315.  
 Fontes, Pereira de Mello, A. M., obit., xii, 627.  
 Foods, nutritive values of, vi, 670; viii, 342; charts showing composition of, 344, 345; adulteration of, see Adulteration.  
 Foot-and-Mouth Disease, viii, 348.  
 Foot-bath, a new, xvi, 705.  
 Foot, Samuel A., obit., iii, 637.  
 Foote, Henry S., sketch, v, 276.  
 Foote, R. E., obit., iv, 693.  
 Forbes, David, obit., i, 633.  
 Forbes, George, on planets, v, 34; xi, 55.  
 Forcite, x, 345.  
 Forckenbeck, Max von, obit., xvii, 591.  
 Ford, Budd G., obit., iv, 693.  
 Ford, Edward L., obit., v, 592.  
 Ford, Gordon L., obit., xvi, 622.  
 Ford, Mary A., obit., i, 616.  
 Ford, Melbourne H., obit., xvi, 622.  
 Ford, Mr., xi, 49.  
 Ford, Rev. James, obit., ii, 600.  
 Fordyce, Sir J., obit., ii, 600.  
 Forefathers' day, xv, 320.  
 Foreign Exchange. See under Financial Review, in vols. viii to xii.  
 Foreign Contract Labor, x, 231.  
 Forel, observations by, viii, 526.  
 Forepaugh, A., obit., xv, 647.  
 Forestry, viii, 349; ix, 796; in Mexico, ix, 493; x, 635.  
 Forestry reserve, Pacific, xviii, 755.  
 Forests, area of, in Europe, vii, 317; destruction of, v, 650; viii, 164; cedar and pine, in Mexico, viii, 538; Adirondack, viii, 356, 576; ix, 582; influence on climate, xi, 544; preservation of, in South Africa, x, 135; xvi, 583; preservation of, in New York State, xviii, 523.  
 Forests of United States, vii, 316.  
 Forge, A. De La, obit., xvii, 591.  
 Forgeries, the "Cocarde," xviii, 323.  
 Formation of Mountains, iv, 379.  
 Formes, Karl, sketch, xiv, 660.  
 Formosa, the French in, ix, 140, 141, 338; x, 30, 171; xv, 115. See China, x, 171, 172.  
 Forney, John W., sketch, vi, 302.  
 Forrest, Catherine N., obit., xvi, 622.  
 Forrest divorce case, the, ix, 626.  
 Forrest, Nathan B., sketch, ii, 299.  
 Forsberg, G. A., ix, 478.  
 Forster, Dr. Bernhard, xii, 649.  
 Förster, Heinrich, obit., vi, 693.  
 Forster, John, sketch, i, 306.  
 Forster, Sir George, obit., i, 633.  
 Forster, W. E., sketch, v, 276; obit., xi, 350.  
 Forsyth, Col. John, obit., ii, 579.  
 Forsyth, Rev. John, obit., xi, 677.  
 Fort Donelson, siege of, x, 423.  
 Fort Fisher, siege of, x, 428, 429.  
 Fort Harrison, capture of, x, 428.  
 Fort Henry, surrender of, x, 423.  
 Fort Madison, Iowa, xviii, 159.  
 Fort Pitt, x, 128, 129.  
 Forts, Chinese, capture of, x, 25.  
 Forth Bridge, viii, 315; ix, 312; x, 328; illustrations, x, 329; xv, 279.  
 Fort Riley, Kan., xiv, 151.  
 Fort Scott, Kan., xv, 127.  
 Fort Smith, Ark., xvii, 111.  
 Fortune Bay outrage, v, 218; xii, 282.  
 Fortune, Robert, obit., v, 599.  
 Fort Wayne, xiii, 164.  
 Fort Worth, xiv, 146.  
 Fossil Birds, vi, 303.  
 Foster, Abby Kelly, obit., xii, 585.  
 Foster, Charles, iv, 705; vi, 702; sketch and port., xvi, 830.  
 Foster, Charles J., obit., viii, 589.  
 Foster, H. A., sketch, xiv, 630.  
 Foster, Joel, obit., ix, 605.  
 Foster, J. W., x, 402; sketch and port., xvii, 745.  
 Foster, Joshua, sketch, xiii, 634.  
 Foster, Lafayette S., sketch, v, 277.  
 Foster, Melvin, sketch, xiii, 634.  
 Fostoria, xv, 127.  
 Fothergill, Jessie, obit., xvi, 670.  
 Foucard, M., x, 37.  
 Foucault, invention by, iii, 270.  
 Foucher, Count, obit., xvi, 670.  
 Foulis, Sir H., obit., i, 633.  
 Fouqué, F., experiments by, x, 156.  
 Fouratt, Enos, sketch, xiii, 634.  
 Fourniaux, invention by, x, 616.  
 Fournier, Edouard, obit., v, 599.  
 Fournier, Félix, obit., ii, 600.  
 Fournier, G., invention by, v, 93.  
 Fourtoun, Barry de, sketch, ii, 319.  
 Fowle, D. G., nominated, xiii, 619; obit., xvi, 623.  
 Fowler, Orson S., obit., xii, 585.  
 Fowler, Sir R. N., obit., xvi, 670.  
 Fox, D. M., obit., xv, 647.  
 Fox, Edward, obit., vi, 683.  
 Fox, George L., obit., ii, 579.  
 Fox, Henry J., obit., xvi, 623.  
 Fox-hound, the, ix, 258.  
 Fox-Jencken, Catharine, obit., xvii, 546.  
 Fox-Kane, Margaret, obit., xviii, 552.  
 Fox, Sir William, obit., xviii, 580.  
 Fox-terrier, the, ix, 261.  
 Fra Angelico, painting of, x, 366.  
 France, government, statistics, elections, legislative proceedings, etc., in each volume; army law and organization, i, 309; illustrations, views in, i, 313, 314, 316, 317; ii, 308, 310, 312, 314, 316, 317; iii, 344, 346; iv, 390, 393; map of Paris, ii, 306; amnesty debate, i, 315; bill passed, iv, 389; v, 234; liberty of the press, ii, 305; Catholics in, ii, 306; iii, 348, 349; resignation of M. Simon, ii, 307; De Broglie cabinet, 308; political excitement, 307-316; political map of France published, 314; MacMahon's proclamation, ii, 315; great number of political prosecutions under De Broglie ministry, iii, 343; resignation of MacMahon and election of Grévy, iv, 388; colportage bill, iii, 343; changes in Senate, 347; new cabinet, iv, 386; election of Gambetta, 388; stormy debate, 391; vote of condemnation of De Broglie ministry, 390; African policy, v, 280; Bastille celebration, v, 285; address by Gambetta, vi, 310; divorce bill, vi, 311; ix, 342; Tunis and Algeria, vi, 310; vii, 322; viii, 358; ix, 339; xii, 298; Gambetta re-elected, vii, 324; his resignation, 325; his death, 326; Freycinet ministry,

- 325; resignation, 326; Duclere ministry, 326; pretenders, 326; viii, 365, 366, 367; x, 355; Duclere's resignation, viii, 366; Ferry ministry, viii, 367; socialist agitations, 368; x, 378; labor legislation, viii, 369; anti-clerical legislation, 370; war in Tonquin and Madagascar, 370; ix, 388, see Tonquin and Madagascar; Annam, ix, 387; xii, 298; Morocco, ix, 339; annexation of Cambodia, and in Africa, 339; relations with Germany, 339; revision of the constitution, 340; recidivists, 342; x, 378; taxes on wheat and sugar, ix, 343; economic crisis, 344; silk industry, 345; change of government, x, 375; Brisson cabinet, 376; tariff war with Roumania, 377; Alsace-Lorraine, 380; colonies, 381; xi, 360; xii, 298; new cabinet, De Freycinet, xi, 352; expulsion of the princes, xi, 355; Boulanger, xi, 356; xii, 292; reconstitution of the cabinet, xi, 357; strikes, 358, 359; resignation of Grévy and election of Sadi-Carnot, xii, 288; Goblet ministry, 290; Rouvier cabinet, 291; irritation against Germany, 293; manifesto of the Count of Paris, 293; sale of decorations, 294; Wilson scandal, 294; presidential crisis, 295; Tirard cabinet, xii, 297; treaty with China, xii, 117; claims to the lower Congo, x, 191; new tariff, xvi, 308; area and population, xvii, 280.
- France, Robert H., obit., xi, 677.
- Franceschi, Jules, obit., xviii, 580.
- Franchi, A., obit., iii, 654.
- Franchise in Great Britain, ix, 374; x, 451, 452.
- Francis, Charles Joseph, of Austria, obit., iii, 654.
- Francis, Charles S., obit., xii, 586.
- Francis, D. R., nominated, xiii, 566.
- Francis, J. B., obit., xvii, 547.
- Francis Joseph, Emperor, iii, 41; silver wedding of, iv, 67; portrait on steel, xi, frontispiece.
- Francis, Joseph, obit. and port., xviii, 552.
- Francis, Lewis, obit., ii, 580.
- Francis, Sir Philip, obit., i, 638.
- Franciscine, xi, 290.
- Frænke, Adolphe, obit., xviii, 580.
- Franelieu, Marquis de, obit., ii, 600.
- Franeo-German War. See Chanzy, viii, 107.
- Franke M., xii, 108.
- Frankenstein, F. G. A., obit., xv, 679.
- Franking privilege, vi, 138.
- Frankland, Percy F., experiments, ix, 119; x, 149, 160, 161.
- Franklin, J. R., obit., iii, 637.
- Franklin, Sir John, search for, ii, 324; v, 298.
- Frankseck, E. F., obit., xv, 679.
- Fransoli, J., obit., xv, 647.
- Franz, Robert, obit., xvii, 591.
- Fraser, A. T., xi, 542.
- Fraser, J., obit., x, 660.
- Fraser River, hell-gate gorge, xviii, 108.
- Fraternal Congress, xiv, 346.
- Fraternity of Jesus, the, ii, 22.
- Frauds, alleged, of officials in Georgia, iv, 421.
- Fraunhofer's lines, cause of, xii, 412.
- Frayne, Frank I., obit., xvi, 623.
- Frazer, James Somerville, obit., xviii, 552.
- Frederick William, Prince (emperor) of Germany, iii, 372; portrait, xii, 321; illness of, 327.
- Frederick William, Prince of Hesse, obit., i, 633.
- Fredericksburg, battle of, xi, 416.
- Fredericton, N. B., xiv, 146.
- Fredro, Count, obit., i, 633.
- Free and Open Church Association, xiii, 13.
- Free Church of England, i, 319; ii, 321.
- Free Church of Scotland, xiii, 704. See under Presbyterians.
- Free Coinage, xvii, 202.
- Freedom of Worship bill, the, x, 634.
- Free Evangelical (English) Churches, Congress of, xvii, 296.
- Freeman, E. A., obit. and port., xvii, 591.
- Freeman, John D., obit., xi, 677.
- Freeman, Mrs. E., obit., i, 616.
- Freeport, Ill., xvii, 112.
- Free Religious Association, vii, 326.
- Freethinkers, Congress of, v, 55.
- Free-Will Baptists, xiv, 67. See Baptists.
- Freezing mixtures, xi, 428; xiii, 147.
- Freiligrath, Ferdinand, sketch, i, 319.
- Freiligh, Martin, sketch, xiv, 630.
- Frelinghuysen, F. T., sketch and portrait, vii, 806; letter of, 192; obit., x, 648.
- Frementin, E., obit., i, 633.
- Frémont, John C., portrait, frontispiece; sketch, xv, 338.
- French advances in Central Africa, v, 280; vii, 335, 336; ix, 168; in Eastern Africa, ix, 339; x, 392, 393; in Tonquin. See Tonquin.
- French Artists' Exhibition. See under Fine Arts.
- French, Daniel C., x, 362.
- French Canadians, exodus of, xviii, 661.
- French, Capt. John, x, 126.
- French, John R., obit., xv, 647.
- French language in schools, xiv, 677.
- French, Rev. M., obit., i, 616.
- French settlements in Dahomey, xvii, 221.
- French, Virginia L., obit., vi, 683.
- French Spoliation Claims, x, 242.
- Freppel, C. E., obit., xvi, 671.
- Frere, Sir Bartle, ii, 85, 86; iv, 121, 125; sketch and portrait, ix, 345.
- Frère, Edouard, obit., xi, 715.
- Frère-Orban ministry, iii, 56; v, 56; ix, 78.
- Fresend, Ernst, xii, 674.
- Freshet in Alabama, xvii, 3.
- Freshets, xiii, 841.
- Freshfield, Douglas, xii, 313.
- Fresno, Cal., xiv, 147.
- Freycinet, Charles Louis de Saulces, ii, 320; sketch, iv, 394; v, 281; ministry, vii, 325; x, 376; xi, 352, 410, 411.
- Freyer, Alfred, obit., xvii, 592.
- Freytag, theory of, vii, 93.
- Frias, F., obit., vi, 693.
- Friedberg, H., sketch, iv, 740.
- Friedländer, Dr., xii, 671.
- Friedländer, I., obit., iii, 637.
- Friedrich, Carl, obit., x, 382.
- Friedrich, Wilhelm Nicolaus Karl, sketch, xiii, 354; his diary, 368.
- Friendly, or Tonga, islands, treaty with Germany, ii, 53; annexation, viii, 31.
- Friends, in every volume but v, ix, xiv, xv, and xvi; yearly meetings, reports of, in each volume; project for woman's college, ii, 322; progressive party, vi, 312; viii, 371; Evangelistic work, vii, 327; question of church ordinances, x, 383; conference of American, London, and Dublin yearly meetings, xii, 299.
- Fries, Elias M., sketch, iii, 350.
- Friese, Richard, x, 363.
- Frieze, Henry S., sketch, xiv, 630.
- Frisby, E., observations by, viii, 20, 26.
- Frishmuth, W., ix, 476.
- Fritel, Pierre, x, 363.
- Frith, W. P., x, 365.
- Fritsch, Prof., experiments, x, 694.
- Fritschel, G. L. W., sketch, xiv, 630.
- Froebel, Julius, obit., xviii, 580.
- Frog Lake massacre, x, 125.
- Frohmüller, ix, 272.
- Frölich, Dr., ix, 49.
- Frome, E. C., obit., xv, 679.
- Frontier disputes. See Boundaries, disputed.
- Frouin, Dr. P. de, xii, 314.
- Frost, William E., obit., ii, 600.
- Frothingham, I. H., obit., xv, 647.
- Frotscher, K. H., obit., i, 633.
- Froude, James A., quoted, xiii, 7.
- Fruit-Growers, Convention of, iii, 573.
- Fruitlands, xiii, 11.
- Fruits, George, obit., i, 617.
- Fry, B. St. J., obit., xvii, 547.
- Fry, W. and H., ix, 246.
- Fryc, Speed S., obit., xvii, 547.
- Fryer, Pauline C., obit., xviii, 552.
- Fuegians, the, x, 41.
- Fuel, heat-value of, iii, 92; gaseous, x, 383.
- Fuel cartridge, invention of, xii, 651; illustration, 652.
- Führich, Joseph von, sketch, i, 321.
- Fukusawa, the famous leather, vii, 441.
- Fulahs, tribe of the, v, 291.
- Fulford, Mr., xii, 310.
- Fuller, George, obit., ix, 605.
- Fuller, Jerome, obit., v, 593.
- Fuller, J. B., experiments by, viii, 305.
- Fuller, John W., obit., xvi, 623.
- Fuller, Melville Weston, sketch and port., xiii, 359.
- Fuller, Rev. Richard, sketch, i, 321.
- Fuller, William H., obit., iii, 637.
- Fullerton, Lady G., death of, x, 713.
- Fullerton, W., Jr., sketch, xiii, 634.
- Fulton, E., obit., iii, 637.
- Function, localization of, ix, 661.
- Fungi, ix, 94, 498; edible, xv, 350.
- Funk, H., obit., ii, 600.
- Furgusson, James, obit., xi, 716.
- Furlonger, Arthur, x, 122.



- Furnaces, gas, viii, 372; iron, ix, 479.
- Fur-seals. See Alaska, vii, 7.
- Furstenburg, Cardinal, obit., xvii, 592.
- Fusion-disk, vi, 313.
- Fustel, Numa, sketch, xiv, 660.
- Fyfe, R., invention by, x, 734.
- Fyffe, C. A., obit., xvii, 592.
- Gaboon, the, ii, 7; vi, 328, 329.
- Gabun and the French Congo, xvii, 293.
- Gade, N., obit., xv, 679.
- Gadsden, xiv, 148.
- Gage, S. F., investigations by, vii, 689.
- Gaiffe, M., x, 576.
- Gainesborough, sale of a, x, 365.
- Gaines's Mill, battle of, x, 559.
- Gainesville, Tex., xvi, 155.
- Gakdul Wells, illustration, x, 294.
- Galapagos Islands, xi, 304.
- Galchos, the, x, 2.
- Galesburg, xv, 127.
- Galiber, Admiral, ix, 460.
- Galicia. See Austria-Hungary.
- Gallinart, N. A., obit., v, 599.
- Galitzin, Prince, art collection of, xii, 278.
- Gallaher, J. S., obit., ii, 580.
- Gallait, Louis, obit., xii, 627.
- Galland, Pierre, obit., xvii, 593.
- Gallatin, A. R., obit., xv, 647.
- Gallatin, James, obit., i, 617.
- Gallaudet, Mrs. S. F., obit., ii, 580.
- Gall-bladder, extirpation of, viii, 752; secretions of the, xii, 678.
- Galle, Dr., experiments by, vii, 36.
- Galleher, John N., obit., xvi, 623.
- Galley, Edmund, v, 113.
- Galliard, E. S., obit., x, 648.
- Gallic acid, test for, v, 95.
- Gallieni, Lieut.-Col., xii, 305.
- Galliera, Duke of, obit., i, 633; Duchess of, sketch, xiii, 662.
- Gallipoli, illustration, ii, 736.
- Gallium, equivalent of, iii, 89; in American blends, v, 95; discovery of, ix, 119; method of isolating, x, 159.
- Gally, Merritt, inventions by, x, 612, 618, 619, 620.
- Galt, Sir Alexander Tilloch, obit., xviii, 580.
- Galton, Francis, invention by, iii, 726; x, 47; experiments, xiii, 421.
- Galveston, Texas, xi, 169; deep harbor at, xv, 800.
- Galway, Viscount, obit., i, 633.
- Gamage, H. T. B., obit., xvii, 547.
- Gama, Vasco da, tercentenary of, v, 628.
- Gambetta, sketch and portrait, vi, 313; speech of, ii, 312; manifesto and prosecution, ii, 316; inaugural, vi, 310; defeat of *scrutin de liste* bill, vi, 311, 807; course and death of, vii, 326; influence of, viii, 365; scheme of, ix, 57, 341.
- Gamble, John R., obit., xvi, 623.
- Gambling, bucket-shop, xiii, 283.
- Game-laws, in Parliament, v, 341; of the United States, xi, 361; new, xvii, 515.
- Game of the United States, x, 386; preservation of, x, 391.
- Games, old, resembling baseball, x, 77.
- Gamgee, Mr., invention by, i, 517.
- Gammell, W., sketch, xiv, 630.
- Gamond, Thomé de, obit., i, 633.
- Ganetsky, J. S., obit., xii, 627.
- Ganglbauer, C., sketch, xiv, 660.
- Gannett, Henry, x, 404.
- Gansevoort, Judge P., obit., i, 617.
- Gape, Admiral J., obit., i, 634.
- Garabit viaduct, viii, 316; xiii, 310.
- Garaschanin, x, 727, 728; resignation of, xii, 735.
- Garbage, burning, vi, 249.
- Garbard, J. H., obit., i, 617.
- Garber, Silas, i, 578.
- Garbett, James, obit., iv, 699.
- Garcelona, Alonzo, iii, 516.
- Garcia, Gen., killed, x, 590.
- Garcin, M., invention by, ix, 736.
- Garde, Lieut., x, 398.
- Gardiner, Addison, obit., viii, 589.
- Gardiner, F., sketch, xiv, 630.
- Gardner, S. B., obit., vii, 636.
- Gardner, A. K., i, 617.
- Gardner, H. J., obit., xvii, 547.
- Gardner, W. S., sketch, xiii, 634.
- Garfield, Eliza B., sketch, xiii, 634.
- Garfield, J. A., sketches, v, 286; vi, 317; portrait, v, 15; letter of acceptance, v, 700; inaugural, vi, 843; Blaine on policy of, vi, 845; vii, 192; memorial, the, vii, 121; Blaine's oration, vii, 127; compensation to physicians of, vii, 809; statue of, x, 367; xii, 280.
- Garfield Mountains, ix, 34.
- Garibaldi, sketch and portrait, vii, 328; gift to, i, 421; resignation of, v, 410; death, vii, 438.
- Garland, A. H., ii, 35; sketch, x, 757; portrait, x, 761.
- Garlington, E. A., relief expedition under, viii, 420; court of inquiry on, 424; ix, 38.
- Garner, W. T., obit., i, 617.
- Garnet, the, x, 13.
- Garnett, Alexander Yelverton Peyton, sketch, xiii, 634.
- Garnett, C. F. M., obit., xi, 677.
- Garnier, J., obit., vi, 693.
- Garnier, M. J., experiments by, viii, 113, 523.
- Garnier-Pagès, sketch, iii, 350.
- Garrard, K., obit., iv, 693.
- Garrett, Emma, obit., xviii, 552.
- Garrett, J. W., obit., ix, 605.
- Garrettson, Mary R., obit., iv, 693.
- Garrison, A. F., obit., ii, 580.
- Garrison, C. K., obit., x, 648.
- Garrison, G. T., sketch, xiv, 631.
- Garrison, J. Linwood, experiments by, xi, 533.
- Garrison, S., obit., iii, 637.
- Garrison, W. L., sketch, iv, 396; on woman suffrage, iv, 598; statue of, xi, 347.
- Garthwaite, J. C., obit., viii, 589.
- Gartrell, Lucius J., obit., xvi, 623.
- Garvim, S. B., obit., iii, 637.
- Gas, viii, 372; a heating, iii, 88; Lowe's process, i, 517; other water processes, viii, 374; illustrations, 374, 375, 378, 379, 380, 381; natural, 377; illustration, xi, 366; in Ohio, xii, 219, 642; map of natural-gas region, xi, 367; burner, i, 91; xii, 652; illustration, 652; improved apparatus, 111; holder, large, xiii, 308; natural, xiii, 440; xiv, 436; xvii, 772; in Kentucky, xviii, 425.
- Gas-engines, viii, 377.
- Gases, in ocean-water, ix, 662; specific heat of, x, 151; explosive of, xii, 112; liquefaction of, ii, 87; xiv, 592; xvi, 727; xviii, 617.
- Gaskell, W. H., experiments by, viii, 361; ix, 654.
- Gas-lighting, regenerative system of, viii, 377.
- Gas-lime, regeneration of, iii, 89.
- Gasparis, Annibale de, obit., xvii, 593.
- Gas-stoves, viii, 376; x, 386.
- Gastein, meeting of two emperors at, x, 70.
- Gates, inventions of, illustrated, xii, 654.
- Gates, E., indictment of, iii, 575.
- Gauchos, illustration, iii, 21.
- Gaudoin, M., invention by, iii, 270.
- Gaul, Gilbert, xi, 346.
- Gaule, experiments by, viii, 632.
- Gaume, Mgr., obit., iv, 774.
- Gauntlett, H. J., sketch, i, 322.
- Gaurisankar, Mount, highest in the world, vi, 332.
- Gauss, statue of, ii, 353.
- Gauthier, M., experiments by, ix, 658.
- Gautier, M. F., experiments by, xi, 537.
- Gautier, Raoul, x, 51.
- Gaurie Pasha, x, 107, 108.
- Gavazzi, A., sketch, xiv, 661.
- Gay, Edward J., sketch, xiv, 631.
- Gay, Sydney Howard, obit. and port., xiii, 634.
- Gayarre, J., obit., xv, 680.
- Gayler, Charles, obit., xvii, 547.
- Gaylor, G. R., obit., i, 617.
- Gear, John H., iv, 520; sketch, ii, 401.
- Geddes, experiments by, iv, 37.
- Geddes, G. W., obit., xvii, 548.
- Geddes, James, obit., xii, 586.
- Geese, in the United States, x, 387.
- Geffken incident, the, xiv, 379.
- Gegenbaur, J. A., sketch, i, 322.
- Geikie, Sir Archibald, xvii, 26.
- Geiseler, M., ix, 275.
- Geissler tubes, iii, 279.
- Gelatine, blasting, iv, 131; ix, 124.
- Gelatine dry plates, ix, 651.
- Gelatine dynamite, and military explosive gelatine, x, 345.
- Geldart, Rev. J. W., obit., i, 634.
- Gelele, King, obit., xv, 680.
- Gelosine, xi, 290.
- Geminid shower of Dec. 12, 1892, xviii, 46.
- Gemmell, W. D., obit., vii, 637.
- Genast, Wilhelm, obit., xii, 627.
- Gene, Gen., xii, 2, 3.
- General, bill reviving grade of, xiii, 234.
- Genesta, the yacht, x, 791.
- Genet, Citizen, xiii, 268.
- Geneva, illustration, i, 739.
- Gueva, N. Y., xv, 128.
- Genin, S. N., obit., iii, 637.
- Genth, F. A. L. C. M., obit. and port., xviii, 553.
- Geodetic conference, viii, 454; ix, 54.
- Geographical Progress and Discovery, in every volume except xiii; Congress, i, 73; geographical names, xi, 382; geography in education, xii, 316.

- Geological Surveys, State, New Hampshire, ii, 548, 557; Georgia, iii, 366; Indiana, iv, 501; New Jersey, iv, 670; of United States, x, 401; appropriations for, x, 405; publications, x, 405; the drift, x, 406; map of the terminal moraine of the second glacial epoch, x, 404; State surveys, x, 406.
- Geological Society of America, xviii, 31.
- Geologists, x, 401 *et seq.*
- Geology, fossils in Oregon, ii, 628; glacial period, vi, 349; explorations in Asia, iii, 359; formation of mountains, iv, 379; Favre's experiments, iv, 379; fossil birds, vi, 303; the iguanodon, viii, 436; recent discoveries, ix, 636; Hayden's work, xii, 356; experimental, iv, 417.
- George V., ex-King of Hanover, death, iii, 384; obit., iii, 654.
- George, Duke of Mecklenburg-Strelitz, obit., i, 634.
- George, Henry, imprisoned, x, 454.
- George, Prince, obit., xv, 680.
- Georgia, statistics, elections, government, legislative proceedings, etc., in each volume; views in, ii, 340; Confederate monument unveiled, iii, 372; impeachment of Comptroller-General, iv, 425; gold-mines in, v, 308; artesian wells, vii, 348; death of Gov. Stephens, viii, 387; Oglethorpe celebration, viii, 389; temperance in, x, 409; convicts, xii, 318; its claim against the U. S., xviii, 341.
- Gerard electric lamp, illustration, ix, 305, 306.
- Gerber, experiments by, vi, 42.
- Gerken, John, obit., i, 617.
- Gerlach, E. L. von, obit., ii, 600.
- Gerlach, Franz, sketch, i, 338.
- German Centralism in Austria, vii, 48.
- German emigration, vii, 348.
- German Evangelical Church, xi, 384.
- German Evangelical Synod, xiv, 366.
- German Government, in Polynesia, ii, 53; colonial policy of, ix, 362; annexation in Papua, ix, 640.
- German National Monument, illustration, viii, 399.
- German Parliament, vi, 337.
- German Provinces, Russification of, viii, 708.
- German Railroads, vii, 349.
- Germanium, xi, 139, 140.
- Germany, statistics, government, legislative proceedings, etc., in every volume; map, i, 345; views in, i, 346, 347; ii, 347, 350, 351, 352; political crimes, in the penal code amendment, i, 344; law against copying works of art, 344; particular parliaments, 344, 345; protests against railroad acquisition by the Imperial Government, 344; Catholics and Radicals, 344, 347; judicial bills, 346; the Emperor on unification of the laws, 347; the Eastern question, i, 347; iii, 378; resignation of Delbrück, i, 345; diplomatic complications with Spain and China, 347, 348; Arnim's conviction, 348; floods, 348; viii, 398; election of Frockenbeck, ii, 349; Alsace-Lorraine, 349, 352; iv, 438; made a State of the Empire, iv, 439; vii, 359; viii, 397; ix, 359; Supreme Tribunal at Leipsic, ii, 350; difference between Bismarck and Gen. von Stosch, 350; war estimates, 350; speech of Von Moltke, 351; patent bill, 351; diets of Bavaria, Saxony, and Württemberg, 351, 352; meeting of Emperors, 352; seventieth anniversary of the Emperor's entrance into the army, 352; shoe and leather exhibition, 353; statue of Gauss, 353; tobacco duty, iii, 378; vii, 356; antagonism of German and Prussian Governments, 378; anti-Socialist bill, iii, 380, 381, 383, 384; v, 318; ix, 356; attempts to assassinate the Emperor, iii, 381; Hodel and Nobiling, 381; royal marriages, 381; paper and pasteboard exhibition, 381; letter from the Pope, and negotiations, 381-382; relations with France, 383; Hanoverian succession, 384; the fleet, 384-385; destruction of the Grosser Kurfürst, 385; officers court-martialed, iv, 441; American products, iii, 386; dispute with Nicaragua, 386; Westphalian coal-fields, 387; question of raising the revenue, 386; tariff debate, iv, 435, 437, 438; refusal of Parliament to imprison Socialist members, 435; announcement of new policy, 435-436; parliamentary discipline bill rejected, 438; historical details of unification, 439; Socialists refuse homage to the Emperor, 440; motion for disarmament, iv, 440; treaty of Prague and position of Schleswig-Holstein, 441; the Egyptian debt, 441; judicial reorganization, 441; the Samoan Islands, 442; army bill, v, 317, 318; South Sea Trading Company, 319; suburbs of Hamburg annexed, 319, 320; stamp-duty conflict, 320, 321; fishery and industrial exhibitions, 321; foreign relations, 321; defection of National Liberals, 322; Cologne cathedral, 322; workingmen's accident insurance bill, vi, 344; vii, 354; ix, 357; xii, 328; Bismarck defeated on tax and biennial budget bills, vi, 344; his conflict with Bennigsen, 345; Liberal gains in elections, 345; speech of Eugene Richter, 346; Hamburg forced into the customs union, 346; meetings of emperors, 346; vii, 355; ix, 356; concessions to the papal power, vi, 346; marriage of Prince William, 346; struggles over laws relating to ecclesiastical offices, vii, 355, 358; the Guelph fund, vii, 358; the reptile fund, 358; rescript of the Emperor, viii, 393; biennial budget voted, 393; state socialism, 393; Cabinet changes, 395; Prussia and the Vatican, 395; American pork, 396; treaty with Spain, 396; copyright treaty, 397; relations with France, 397; attempt to banish French from the schools of Alsace-Lorraine, 397; monument near Rudesheim, 399; hygienic and art exhibitions, 399; French feeling toward, ix, 339; ecclesiastical policy, ix, 356; the explosives law, 357; accident-insurance and joint-stock laws, 357-358; Niederwald anarchist plot, 358; Kraszewski trial, 358-359; the Lasker incident, 359-360; Bismarck succession, 359-360; fusion of Liberal factions, 360; general election, 360; the new Reichstag, 361; post steamship subventions, ix, 361; steamship subsidies, x, 415; colonial policy, 362; African colonies, x, 363-364, 137, 393, 795; annexations in the Pacific, 365; xi, 60; Caroline Islands, x, 141; in Papua, 679-681; relations with England, 120 *et seq.*; flag insulted in Spain, 142; officers in the Tonquin War, 170; tariff revision, 416; state lotteries, 417; North Sea and other canals, 417; xi, 388; socialism, x, 417; xi, 389; murder of Herr Rumpff, x, 417; shipping law, 420; Russian Poles expelled, 418; Americans, 419; the Feejee controversy, 419; telegraph conference, 420; imprisonment of Herr Bebel, xi, 389; working-women's society dissolved; 389; repeal of the May laws, 390; Heidelberg festival, 391; emperors' league, xi, 391; new King in Bavaria, 381; Bismarck demands the increase of the army, xii, 323; May laws amended, 325; frontier troubles, 326; colonies, 329; treason trials at Leipsic, 326; the Raon incident, 327; illness of the Crown Prince, 327; the triple alliance, 328; founding of the Empire, 319; German spies in France, 293.
- Germer, Edward, obit., xii, 586.
- Germ Theory, and Spontaneous Generation, iii, 387; theory of disease, iv, 442; vi, 347, 551; vii, 286; ix, 498; in tuberculosis, vii, 798; ix, 497; vaccination, vi, 347. See Epidemic Diseases, viii, 320; and Micro-Organisms in Disease, ix, 495.
- Gérôme, pictures by, x, 358, 363.
- Gescheidt, Dr. L. M., obit., i, 617.
- Gesellschaft, E., obit., iii, 654.
- Gessi, Signor, explorations of, i, 330, 331.
- Gettysburg, battle of, xi, 446; field of, xviii, 611.
- Geuther, experiments, xii, 106.
- Ghillany, F., obit., i, 634.
- Ghilzai Revolt, xii, 4.
- Ghislanzoni, A., obit., xviii, 580.
- Gholain Hussein K., obit., vi, 693.
- Gholain Ilyder Khan, xii, 5.
- Gibbons, Abby Ilopper, obit., xviii, 553.
- Gibbons, Cardinal, xii, 716, 717.
- Gibbons, J. S., obit., xvii, 548.
- Gibbons, Sir S., obit., i, 634.
- Gibbs, Wolcott, ix, 46.
- Gibraltar, xv, 403; xvi, 342.
- Gibson, Edward, sketch, x, 450.



- Gibson, George, sketch, xiii, 635.  
 Gibson, R. L., obit., xvii, 548.  
 Gibson, Walter M., xii, 352; sketch, xiii, 635.  
 Gidman, J., invention, ix, 736.  
 Giebr Bey, i, 4.  
 Giegler Pasha, viii, 299; x, 317.  
 Giers, M. de, x, 4, 6, 8, 10.  
 Giers, N. C., sketch, vii, 734; ix, 64.  
 Gifford, C. L. C., obit., ii, 580.  
 Gifford, Sir Hardinge, portrait, x, 438; sketch, 449. See Halsbury, Lord.  
 Gifford, R. Swain, prize to, x, 367.  
 Gifford, Sandford R., sketch, v, 322.  
 Gitts and bequests, xviii, 350.  
 Gilbert, Addison, sketch, xiii, 635.  
 Gilbert, Alfred, xi, 345.  
 Gilbert, G. A., obit., ii, 580.  
 Gilbert, Grove K., x, 404.  
 Gilbert, John G., sketch and port., xiv, 631.  
 Gilbert, John S., obit., xvi, 623.  
 Gilbert, R. H., obit., x, 649.  
 Gilbert islands, German protectorate over the, x, 138, 415.  
 Gilchrist, Robert, sketch and port., xiii, 375.  
 Gilchrist, S., invention by, v, 208.  
 Gilchrist, Thomas, steel process, x, 575.  
 Gilder, Col. William H., xii, 316.  
 Giles, Chauncey, obit., xviii, 553.  
 Giles, Ernest, in Australia, i, 330.  
 Gill, Capt., iii, 359.  
 Gill, David, observations by, vii, 36, 37; viii, 26; prize, vii, 41; xi, 48.  
 Gillespie, Col. G. L., xiii, 302.  
 Gillespie, Elvia, obit., xii, 586.  
 Gillette, A. D., obit., vii, 637.  
 Gilmore, Quincy Adams, sketch and port., xiii, 635.  
 Gilmore, P. S., obit., xvii, 548.  
 Gilmore, Richard, obit. and port., xvi, 624.  
 Gilpin, E. W., i, 225; obit., i, 617.  
 Gindely, Anton, obit., xvii, 593.  
 Ginzel, J. A., obit., i, 634.  
 Ginzel, M., x, 54.  
 Giordani, Luigi, obit., xviii, 580.  
 Girardet, Paul, obit., xviii, 580.  
 Girardin, E. de, sketch, vi, 348.  
 Girls, protection of, xiv, 229; co-operative boarding homes, xv, 383.  
 Gisborne, F. M., obit., xvii, 593.  
 Giske, B. L., obit., i, 634.  
 Giskra, K., obit., iv, 699.  
 Gittings, E., obit., v, 593.  
 Gless, G., invention by, vii, 530.  
 Glacial age, man in the, xvi, 13.  
 Glacial Period, vi, 349; x, 406; map of terminal moraine of the second glacial epoch, x, 404.  
 Glaciers, names of, ix, 34; structure of, ix, 336; in volcanoes, ix, 542; of the Andes, ix, 542, 543; theory of, x, 407, 408.  
 Gladding, Thomas S., x, 156.  
 Gladstone, W. E., sketch, v, 322; his policy, ix, 303, 372-375; x, 11, 13, 18, 313, 321, 446, 447; resignation, 448; defense of his policy, 456; xi, 399, 401; in Parliament, illustration, vii, 206. And see articles on Great Britain.  
 Gladstone, W. H., obit., xvi, 671.  
 Glais-Bizoin, A., obit., ii, 600.  
 Glandular system, x, 694; xi, 762; xii, 678.  
 Glass, process for toughening, i, 517; improvements in, v, 91; perforated, xi, 740.  
 Glassbrenner, A., sketch, i, 348.  
 Gleig, George R., sketch, xiii, 662.  
 Glenn, W. W., obit., i, 617.  
 Glenwood Springs, xiii, 164.  
 Glick, G. W., sketch, vii, 447.  
 Glisson, O. S., obit., xv, 648.  
 Glonoine, x, 344.  
 Gloucester, Mass., xii, 121.  
 Glover, John M., obit., xvi, 624.  
 Glover, Sarah, ix, 546.  
 Gloversville, xv, 128.  
 Glucose, vi, 350; ix, 2, 123.  
 Glyn, Miss, sketch, xiv, 661.  
 Glyoxilin, x, 343.  
 Goblet ministry, the, xii, 290.  
 Gobright, L. A., obit., vi, 683.  
 Goddard, Bouverie, obit., xi, 716.  
 Goddard, D. A., obit., vii, 637.  
 Goddard, Thomas P. I., obit., xviii, 553.  
 Godelle, M., v, 285.  
 Godey, L. A., obit., iii, 637.  
 Godin, St. Jean B. A., sketch, xiii, 662.  
 Godlee, R. J., x, 742.  
 Godon, S. W., sketch, iv, 444.  
 Godshalk, Wm., obit., xvi, 624.  
 Godwin, Col., explorations, ii, 328.  
 Godwin, George, sketch, xiii, 663.  
 Goebel, Henry, obit., xviii, 553.  
 Goessmann, experiments, iii, 87.  
 Goff, G. W., obit., i, 617.  
 Goff, M. B., obit., xv, 648.  
 Goff, Nathan, nominated, xiii, 842.  
 Goffart, A., experiments, vi, 809.  
 Gold, allotropic, ii, 499; discoveries, xi, 39, 65, 134, 305, 622; crystals of, ix, 475; production of, ii, 240, 242; in Alabama, iii, 8; in Dakota, ii, 245; dust from Colombia, viii, 141; experiments with, viii, 524; Venezuela mines, viii, 814; black gold, xii, 484; new method of treating the ore, 484; amalgamation with, 484; xiii, 526; xiv, 109, 165, 170, 240, 248, 361, 542, 610, 691; xv, 529; xvi, 509; xvii, 443; xviii, 481. See also Mines and Metallurgy.  
 Gold as the only standard, see Currency, ii, 235, and Bimetallism; and silver, relative values of, i, 290; conference to fix, iii, 326; issue of certificates, vii, 117; x, 275-282. See Currency, Bimetallism, x, 275.  
 Gold, discoveries of, xi, 39, 65, 134, 305, 622; in Michigan, xii, 484; in British Columbia, xi, 98; in Ecuador, xi, 305; in Bolivia, xi, 97; in Colombia, xi, 190; in Norway, xii, 484; in China, x, 169; on the Amoor, x, 397; in Corea, xi, 272; in Australia, xi, 65, 66, 576; in South Africa, xi, 134; xii, 485; in Canada, xviii, 266; in Minnesota, xviii, 496; new fields, xvii, 772; mining in Wales, xiii, 392.  
 Gold Coast, xiv, 401; xvii, 327.  
 Golden Jubilee, the, xii, 716.  
 Golden rose, the, xiii, 716.  
 Gold-fields of Africa, the, xviii, 129.  
 Goldie, Matthew, obit., xvii, 549.  
 Goldmark, Carl, xii, 521.  
 Goldsborough, L. M., sketch, ii, 353.  
 Goldsborough, W. T., obit., i, 617.  
 Goldschmid, invention by, iii, 545.  
 Goldschmidt, discoveries by, ii, 44.  
 Goldschmidt, Meyer Aaron, obit., xii, 627.  
 Goldschmidt, P., obit., ii, 600.  
 Goldschneider, Dr., experiments by, x, 689; xii, 673.  
 Goldsmid, Sir F. H., obit., iii, 654.  
 Goldsmith, O. B., sketch, xiii, 636.  
 Goldsmith, W. L., impeachment of, iv, 421.  
 Goldthwaite, G., sketch, iv, 444.  
 Golf, xviii, 354.  
 Golther, L. von, sketch, i, 343.  
 Gondinet, E., sketch, xiii, 663.  
 Gonon, E., obit., xvii, 593.  
 Gontaut-Biron, Vicomte, obit., xv, 680.  
 Gontcharoff, I. A., obit., xvi, 671.  
 Gonzalez, Manuel, obit. and port., xviii, 580.  
 Gooch, D. W., obit., xvi, 624.  
 Gooch, Sir D., sketch, xiv, 661.  
 Goodale, George L., port., xv, 24.  
 Goodall, Albert G., obit., xii, 586.  
 Goodall, F., xi, 345; xii, 277.  
 Goodell, D. H., nominated, xiii, 594.  
 Good Hope, Cape of, xi, 133.  
 Good, John, inventions, xiii, 250.  
 Goodrich, James S., obit., xi, 667.  
 Goodwin, Eliza Weathersby, obit., xii, 587.  
 Goodwin, George, obit., xi, 716.  
 Goodwin, H., obit., xvi, 671.  
 Goodwin, J., obit., iii, 627.  
 Goodwin, W. H., obit., i, 617.  
 Goodwin-Talcott, H. Bradbury, obit., xviii, 554.  
 Goold, James A., obit., xi, 716.  
 Goppelsroeder, invention by, vii, 90; experiments, viii, 115.  
 Gordon, Sir A., defeat of cannibals by, i, 53; Governor of Feejee, ii, 52; x, 49.  
 Gordon, C. G., sketch, with portrait, viii, 399; portrait on steel, ix, 300; in Abyssina, ii, 2; iv, 2, 333; operations in Egypt, i, 246; excursions on the Nile, ii, 330; in the Soudan, ii, 269; v, 235; viii, 290; proposed to flood the Jordan valley, viii, 307; mission to the Soudan, ix, 299, 372; x, 230, 312; his journal, x, 320; memorial hospital to, and pension to his family, x, 321; death of, x, 661.  
 Gordon, David, obit., xi, 716.  
 Gordon, F. W., invention by, x, 580.  
 Gordon, George H., obit., xi, 678.  
 Gordon, Lieut. A. R., xii, 214.  
 Gordon, Sir H. P., obit., i, 634.  
 Gordon, J. E. H., invention by, vii, 269, 270; obit., xviii, 581.  
 Gordon, L. D. B., obit., i, 634.  
 Gordon, Sir W. H., obit., i, 634.  
 Gore, J. E., xi, 56.  
 Gore-Langton, Lady, address by, ii, 389.  
 Gorgas, J., obit., viii, 589.  
 Goring, C. R., ix, 519, 520.  
 Gorman, J. R., xi, 742.  
 Gorman, Gen. W. A., obit., i, 617.  
 Gormanston, Viscount, obit., i, 634.

- Gorringe, H. H., obit., x, 649.  
 Gortchakoff, Prince, sketch, ii, 353; viii, 400; retirement, vii, 734; x, 2.  
 Gortyna, inscription at, x, 37.  
 Goshen, search for, x, 36.  
 Goshenland, ix, 113; x, 85, 87.  
 Gospel society, xv, 10.  
 Goss, William, obit., i, 618.  
 Gosse, Philip H., sketch, xiii, 668.  
 Goszczynskis, L., sketch, i, 348.  
 Gothard's experiment, xi, 51.  
 Gothenburg, illustration, ii, 705.  
 Göttingen, University of, chemistry at, ix, 809.  
 Gougcard, M., obit., xi, 716.  
 Gough, John Bartholomew, obit. and portrait, xi, 392.  
 Goulard and Gibbs, induction-coils used by, viii, 305.  
 Gould, B. A., discoveries and observations by, iii, 35; vi, 38; vii, 37; prize to, viii, 27; xi, 57, 59; xii, 45.  
 Gould, G. W., nominated, xiii, 715.  
 Gould, J., obit., vi, 693.  
 Gould, Jay, obit., xvii, 549.  
 Gould, T. R., sketch, vi, 353.  
 Gould system of roads, vi, 335, 336.  
 Gould, Walter, obit., xviii, 554.  
 Gounod, Charles François, sketch and port., xviii, 355; house at St. Cloud, 357.  
 Gourko, Gen. J. V., sketch, ii, 353.  
 Gove, William H., obit., i, 618.  
 Government departments at Washington, xiii, 375.  
 Government house, Honolulu, xviii, 374.  
 Government lands in Missouri, xviii, 499.  
 Government publications, x, 405.  
 Gowen, F. B., sketch, xiv, 632.  
 Gower, Frederick A., ix, 72.  
 Gozzadini, Count G., obit., xii, 627.  
 Grace, F. J., obit., ii, 580.  
 Grace-Aranibar contract, the, xii, 662.  
 Grace-Calvert, experiments, vi, 99.  
 Grady, Henry W., obit. and port., xiv, 632.  
 Graetz, H., obit., xvi, 671.  
 Grafton, E. C., obit., i, 618.  
 Graham, C. K., sketch, xiv, 632.  
 Graham, Gen. G., in Egypt, with portrait, vii, 253; ix, 293; results of his campaign, ix, 295, 299.  
 Graham, John H., obit., iii, 637.  
 Graham, J. and W., picture collections of, sold, xi, 345; xii, 278.  
 Graham, J. L., obit., i, 618.  
 Graham, J. L., Jr., obit., i, 618.  
 Graham, Van Wyck, obit., i, 618.  
 Graham, Wallace, obit., i, 618.  
 Graham, William M., obit., xi, 678.  
 Graham, W. W., discoveries by, ix, 543.  
 Grain inspection, vii, 560; xv, 555.  
 Gramme, M., inventions by, iii, 277, 307; vi, 253; electric lamp of, vi, 258.  
 Gramont, Duc de, obit., v, 599.  
 Gran Chaco expedition, x, 100.  
 Grand Army of the Republic, xii, 329; badges of, colored-plate illustration, xii, 329.  
 Grandeaup, experiments by, iii, 725.  
 Grand-Ecaille, xii, 756.  
 Grandin, Lieut., invention, i, 518.  
 Grand Rapids, xii, 122.  
 Granger cases, the, ii, 753.  
 Granger, Gordon, sketch, i, 348.  
 Granier, M., x, 26.  
 Granier de Cassagnac, A. B., obit., v, 599.  
 Grannis, T. C., obit., iii, 637.  
 Grant, Sir Francis, obit., iii, 654.  
 Grant, Gordon, obit., iii, 638.  
 Grant, J. A., obit., xvii, 593.  
 Grant, James, obit., xii, 628.  
 Grant, James Macpherson, obit., x, 661.  
 Grant, Robert, obit., xvii, 593.  
 Grant, Ulysses S., President, messages of, i, 680; travels of, iv, 146, 445; proposal to place on retired list, vii, 156; obit., x, 421, see also x, 225; steel portrait, x, front; his birthplace, illustration, x, 422; numbers lost and captured by, x, 430; his character, x, 432.  
 Grant, William, ix, 114, 115.  
 Grant and Ward, ix, 329.  
 Grant Land, ix, 35.  
 Grant monument, the, xviii, 528.  
 Grants to gas and water companies, xi, 470.  
 Granville, Earl, sketch, v, 323; ix, 290, 363, 364, 559; x, 11, 16, 119, 120, *et seq.*, 311, 419, 679; obit. and port., xvi, 672.  
 Grapes, chemistry of, iii, 87; culture of, see Viticulture.  
 Grape-Sugar, vi, 350.  
 Graphic works of art, first exhibition, xi, 346.  
 Grass, Philippe, obit., i, 634.  
 Grasses, analysis of, viii, 118.  
 Grasshoppers, in Dakota, protection against, i, 219; in Minnesota, i, 558.  
 Grassman, H. G., obit., ii, 601.  
 Grätz, Prof., xii, 404, 405.  
 Gravenreuth, Carl von, obit., xvi, 671.  
 Graves, Abbot F., xi, 347.  
 Graves, Robert, obit., xi, 678.  
 Graves, Ralph H., obit., i, 618.  
 Gravez, T., obit., viii, 599.  
 Gravière, Jurien de la, obit., xvii, 593.  
 Gravitation, law of, xiv, 50.  
 Gray, Albert Z., sketch, xiv, 632.  
 Gray, Alfred G., obit., i, 618.  
 Gray, Asa, ix, 46; obit. and port., xiii, 380.  
 Gray, David, sketch, xiii, 636.  
 Gray, E. P., inventions by, vi, 255. See Telephone, i, 740.  
 Gray, George Z., sketch, xiv, 632.  
 Gray, Hiram, obit., xv, 648.  
 Gray, H. P., sketch, ii, 354.  
 Gray, John Perdue, obit., xi, 678.  
 Grayson, Clifford P., pictures by, xi, 346, 347.  
 Great Britain and Ireland, statistics, government, legislative proceedings, etc., in each volume; map, ii, 360; views in, i, 356, 357, 359, 362, 364; ii, 361-367; Suez canal shares, i, 355; mission to Egypt, 356; title of empress assumed by the Queen, 357; debate upon, 357-358; court of survey, 358; merchants' shipping acts, 358; compulsory education, 358; appellate jurisdiction of the House, 359; home-rule for Ireland discussion, 360; bill to suppress the slave-trade in India, 361; the Turkish question, 361; the Eastern question, i, 361; de-

bates on, 361-364; ii, 362-364; iii, 398-399, 401-402; v, 336-337; see also Eastern question, the; new Doomsday Book, i, 365; visit of Sir Salar Jung, 366; attack on the government by the Duke of Argyll, ii, 362; letter of Carlyle and speech of Gladstone, 365; obstruction by Irish members, ii, 366; consular service in Turkey, Persia, and Egypt, 368; liberation society, 368; annexation of Transvaal, 368; island of Cyprus, the, iii, 401; v, 336; discussion of Russo-Turkish policy, iii, 404-405; Afghan war, iii, 405; Imperial Order of the Crown of India, 406; mob in Hyde Park, 406; murder of the Earl of Leirtrim, 407; Fenians released, 407; labor strikes, 407; Glasgow bank failure, 407; steamboat, colliery, and theater accidents, 407, 408; army discipline bill, iv, 452; dissolution of Queen's University, 453; education in Wales, 453; suffrage question, 455; war in South Africa, 455-456; Gladstone's campaign in Scotland, 457; Irish speakers arrested, 458; case of Charles Bradlaugh; see Bradlaugh; Gladstone's arraignment of Austria, v, 334; South African federation, 338; temperance bill, v, 342; American cattle regulations, v, 342; Tay disaster inquiry, 344; woman-suffrage in the Isle of Man, 344; the Irish question, vi, 358-370; vii, 365; viii, 411-417; ix, 376-378; schemes for destruction of property, vi, 370; request to United States government, 371; attempted assassination of the queen, vii, 369; appropriations for the royal family denounced, vii, 369; Gladstone prime minister, vii, 360; question of cloture, vii, 364; property of married women, 365; state aid to emigration, viii, 418; famine in Skye and western highlands, 418; comparison of the English and French navies, ix, 370; annexation in Papua, 380, 639; x, 679-680; federation of Australian colonies, ix, 380; African policy attacked, ix, 372; Arthur Peel speaker, 372; London government bill, 372; purchase-of-land bill, 373; Manchester ship-canal, 373; debate on the franchise bill, 374; franchise agitation and extension, 375; membership of House of Commons increased, 376; Maartasma murder trials, evidence suppressed, 376-377; dynamite conspiracies and explosions, 377-378; the Skye crofters, 378; employers' liability act, 379; financial depression, 379; commercial treaty with Mexico, 380; extent of colonial possessions, 380; affairs in Africa, 380; x, 119, 136, 137; government censured, x, 447; resignation of ministry, 448; earldom offered to Gladstone, 448; Salisbury ministry—sketches of cabinet, 448-450; criminal law amendment bill, x, 452; land-purchase bill, 453; xi,



- 400; Irish question, x, 454-456; electoral campaign, x, 456; land question, 456; abolition of game-laws demanded, 458; Port Hamilton taken, 459; annexation of Upper Burmah, 115; home-rule bill, xi, 400; Crofter troubles, 401-404; xii, 342; riots in Belfast, xi, 403; agrarian agitations in Wales, 404; mob in London—meeting in Trafalgar square, 405; Domesday celebration, 406; Domesday Book, 407; socialist agitations, xii, 342; Irish affairs, 336 *et seq.*; the round table, 336; the plan of campaign, 336, 337; declared illegal, 337; evictions, 337, 338.
- Great Eastern, history of, xiv, 404.
- Great Falls, Montana, xvi, 156.
- Great Salt Lake, filling, v, 297.
- Greaves, James P., xiii, 11.
- Grébaud, Eugene, xi, 31; xii, 18.
- Greece, statistics, government, legislative proceedings, etc., in every volume; maps of, i, 367, 368; v, 225; views in, i, 370; ii, 369, 370; iii, 409, 410; trial of ministers, i, 369; resignation of Kumunduros ministry, ii, 370; Deligeorgi ministry, 370; death of Admiral Canaris, 371; charge of ministry, iii, 408; war preparations, 408; massacres, 409; Turko-Greek commission, iv, 459; army prepared, v, 345; vi, 374; boundaries settled, 377; change of ministry, vii, 371; petroleum monopoly, viii, 419; Latin Union, 419; Corinth canal, ix, 388; action regarding Bulgaria, x, 109, 112; mobilization of troops, xi, 409; interference of the powers, 409; blockade of the coast, 411; change of ministry, 411; collision on the frontier, 411; electoral reform, 412; xiii, 403; xiv, 406; xv, 408; xvi, 348; xvii, 328; xviii, 368.
- Greek bridge and bath, only example of, ix, 25.
- Greek Church, organization of, i, 371, 372; ii, 371; new translation of the Bible, 372; iii, 411; iv, 461; v, 346; project for union of Servian churches, v, 347; ix, 277; party in, favoring union with the Roman Church, ix, 279.
- Greek invasion of Turkey, iii, 793.
- Greeley, Colorado, xviii, 159.
- Greely, A. W., expedition under, vi, 325; relief expedition, viii, 420; ix, 28.
- Green, Caleb S., obit., xvi, 624.
- Green, Charles, obit., xii, 587.
- Green, F. M., corrections in latitudes and longitudes, ii, 336.
- Green, George F., obit., xvii, 549.
- Green, Henry, Jr., obit., i, 618.
- Green, John R., sketch, viii, 424.
- Green, J. R., experiments by, xii, 676.
- Green, N. E., observations by, viii, 22; ix, 51.
- Green, Norvin, obit., xviii, 554.
- Green, S., obit. and port., xiii, 404.
- Green, S. F., imprisonment, vii, 14.
- Green, Thomas C., sketch, xiv, 633.
- Green, Sir W. K., obit., xvi, 673.
- Green, William L., xii, 353.
- Green, William M., obit., xii, 587.
- Green, Rev. W. S., ix, 545.
- Greenback party, the, i, 204, 781.
- Greene, Charles G., obit., x, 678.
- Greene, E. W. C., obit., ii, 580.
- Greene, G. W., obit., viii, 589.
- Greene, Gen. Nathanael, statue of, xi, 347.
- Greene, Nathaniel, obit., ii, 580.
- Greene, S. D., obit., ix, 606.
- Greene, Theodore P., obit., xii, 587.
- Greene, W. B., sketch, iii, 412.
- Greenfield, Eliz. T., obit., i, 618.
- Greenhow cases, tried, x, 268, 272.
- Greenland, explorations in, iii, 358, and xiv, 359; viii, 384; ix, 348; xiv, 268; xvii, 299.
- Greenock, Scotland, great dock at, x, 332.
- Green River island, xv, 474.
- Greenwich, meridian of, ix, 54.
- Greenwood, John, obit., xii, 587.
- Greer County, Texas, claimed by United States, xii, 760.
- Greer, Edward, sketch, xiii, 636.
- Grefin, H. A., sketch, xiii, 636.
- Gregg, Alexander, obit., xviii, 554.
- Gregg, J., obit., iii, 655.
- Gregg, Rollin R., obit., xi, 679.
- Gregorian Calendar, vii, 371.
- Gregorovius, F., obit., xvi, 673.
- Gregory, Dudley S., obit., xi, 679.
- Gregory, Dr. H. H., obit., ii, 580.
- Gregory, F. T., sketch, xiii, 663.
- Gregory, S. B., obit., ix, 606.
- Gregory, Sir W. H., obit., xvii, 594.
- Greig, Samuel A., obit., xii, 628.
- Grenell, George, obit., ii, 580.
- Grenfell, Rev. George, x, 392; xi, 32, 372.
- Gresham, Walter Q., sketch and port., xviii, 734.
- Gresley, H. X., obit., xv, 680.
- Gresser, P. A., obit., xvii, 594.
- Greuze, x, 364.
- Grévin, Alfred, obit., xvii, 594.
- Grévy, Albert, iv, 26; v, 285.
- Grévy, F. J. P., sketch, iii, 413; portrait, iv, 17; elected President, iv, 388; x, 27; xii, 288; resignation, 296; xvi, 350.
- Grey, Sir George, obit., vii, 646.
- Greyhound, the, ix, 262.
- Grier, David P., obit., xvi, 624.
- Grier, W. N., obit., x, 649.
- Grierson, Gen., x, 425.
- Griffin, G. W., obit., xvi, 625.
- Griffin, Julia A., obit., xvi, 625.
- Griffin, Lepel, v, 6.
- Griffin, Samuel P., obit., xii, 588.
- Griffith, F. Llewellyn, researches by, xii, 18.
- Griffith, J. E., obit., ii, 580.
- Griffith, Sir R. J., obit., iii, 655.
- Griffiths, A. B., experiments by, x, 158, 576.
- Grigsby, H. B., obit., vi, 683.
- Grimaux, M. E., experiments by, v, 96; vii, 87.
- Grimm, Jacob, ix, 745.
- Grimshaw, experiments, vi, 99.
- Grimston, invention by, viii, 381.
- Grimwood, F. S. C., obit., xvi, 673.
- Grinnell, J., obit., x, 649.
- Grinnell, J. B., obit., xvi, 625.
- Grinnell Land, an island, ix, 35.
- Grippe, la, see Influenza.
- Grisel, M., engineer, x, 332.
- Grivas, Demetrios, sketch, xiv, 661.
- Grocholski, Casimir de, vii, 48.
- Groddeck, Prof., xi, 538.
- Groeben-Neudörfchen, obit., i, 634.
- Groen van Prinsterer, W., obit., i, 634.
- Groesbeck, Abraham, obit., xi, 679.
- Groome, J. B., obit., xviii, 554.
- Gross, S. D., obit., ix, 606.
- Gross, S. W., sketch, xiv, 633.
- Grosvenor Gallery exhibitions, x, 360; xi, 345; xii, 277.
- Grotius, on international law, vii, 618.
- Grouse, in United States, x, 388.
- Grove, inventions by, vi, 254; vii, 265.
- Grover, Lafayette, sketch, i, 653.
- Grover, Stephen, ix, 146.
- Grün, Anastasius, i, 51.
- Grüncisen, K. von, obit., iii, 655.
- Gruner, M., experiments by, ix, 472.
- Grünhagen, Herr, experiments by, x, 690; xi, 674.
- Grunow, ix, 521.
- Grünwald, explorations, iii, 359.
- Gruppe, O. F., sketch, i, 375.
- Guachemaca, x, 299.
- Guadeloupe, viii, 821; ix, 804; x, 783; xii, 840; xiv, 824; xv, 334; xvi, 865; xvii, 794.
- Guano Deposits in South America, war over, iv, 82; as a fertilizer, vi, 276, 277; in Peru, vii, 683; and Nitrate Deposits, controversy on, viii, 628; from Chili, x, 164; illustrations, working in the North Island, i, 661; bat, xi, 276.
- Guardia, Gen., iii, 227; death of, vii, 176.
- Guarantee Investment Company, in Missouri, xviii, 500.
- Guatemala, statistics, etc., in each volume; map, i, 374; views in, i, 374; v, 349; viii, 426, 427; attempted assassination of President Barrios, ii, 375; ix, 385; central railway, iii, 417; iv, 463; education in, v, 350; cinchona bark, viii, 427; new ports of entry, ix, 385; land grants, ix, 385; proposed union of Central American States, x, 464; xii, 348; defection of Zaldivar, 465; death of Barrios, 466; Barillas president, xi, 412; abolition of torture, 414; revolutionary plots, 414; attempt to poison the president, 414; attempt at revolution, xii, 347; Archbishop Casanova, 347; alcades, ill., xvi, 352; civil disturbances in, 353; suspension of the constitution, xviii, 370; boundary dispute, see Boundaries.
- Guatemala La Antigua, illustration, i, 374.
- Guayaquil, earthquake at, xii, 232.
- Gubert, Louise, obit., vii, 637.
- Guden, Dr. von, drowned, xi, 512, 716.
- Gudmundsson, Sigurdur, iv, 314.
- Guedists, the, ix, 344.
- Guehl fund, vii, 358.
- Guericke, H. E. F., obit., iii, 655.
- Guerin, Thomas J., obit., xii, 588.
- Guerne, Prof., his excursion with Prince Albert in the northern Atlantic, xii, 316.

- Guernsey, Victor Hugo's home in, illustration, x, 482.
- Guest, John, sketch, iv, 464.
- Guglielmo, Signor, xii, 494.
- Guiana, viii, 821; ix, 803, 805; x, 783; convicts to be sent to, ix, 343; x, 378; British, xii, 800; xiii, 839; xiv, 403; xv, 407; xvi, 348; French, xiii, 840; xiv, 824; xv, 330; Dutch, xvi, 564.
- Guibert, Joseph Hippolyte, obit., xi, 716.
- Guide for fish-line, xvi, 710.
- Guidi, F. M., obit., iv, 699.
- Guigniant, J. D., sketch, i, 375.
- Guilbert, A. V. F., sketch, xiv, 661.
- Guinea, French and Portuguese, xi, 371.
- Guion, J. M., obit., iii, 638.
- Guiraud, Ernest, obit., xvii, 594.
- Guiteau's Trial, vi, 381; execution, vii, 809.
- Gulf Stream, investigation of, v, 288; xii, 316; Pacific, v, 289; vi, 326.
- Gull, Sir W., obit., xv, 680.
- Guhran, x, 8.
- Gum-gelactine, vii, 88.
- Gum-lac, from Arizona, vi, 100.
- Gun-cotton, x, 343.
- Gundlach, E., ix, 499, 503, 505.
- Gundry, Richard, obit., xvi, 625.
- Gunganama's embassy, xvi, 107.
- Gungi, J., obit., viii, 599.
- Gung'l Josef, sketch, xiv, 661.
- Gunnery, improvements in, vi, 547.
- Gunning, T. B., sketch, xiv, 633.
- Gunning, W. D., sketch, xiii, 636.
- Gunnisonite, vii, 87.
- Gunpowder, x, 343; xvi, 552.
- Guns, construction of, vii, 576; one hundred ton, used at Spezzia, illustration, 579; three types of, 578; the Armstrong, 581; the dynamite, with illustration, ix, 274; rifles, with illustrations, xii, 274, *et seq.*; for coast defense, xii, 348; new, xiii, 792; xiv, 811. See also under Army.
- Gunther, J. C., obit., i, 618.
- Gurney, E. W., obit., xi, 679.
- Gurney, Russell, obit., iii, 655.
- Gurney, William, sketch, iv, 464.
- Güssfeldt, Paul, explorations, i, 331; ix, 542.
- Gustavus, Prince, obit., ii, 601.
- Gutcheff, Major, x, 731.
- Gutbeim, James K., obit., xi, 679.
- Guthrie, Dr., researches by, x, 151.
- Gutzkow, K. F., sketch, iii, 418.
- Guyot, Arnold H., sketch and portrait, ix, 386.
- Gylden, observations, viii, 26.
- Haarlem, views in, illustration, i, 583.
- Habib Abdoer Rahman, ix, 558.
- Hachette, J. G., obit., xvii, 594.
- Hackett, Sir W., obit., ii, 601.
- Hackett, W. H. T., obit., iii, 638.
- Hackländer, F. W., obit., ii, 601.
- Haddon, J. L., invention, iii, 286.
- Hadji, Loja, obit., xii, 628.
- Hadrian, mosaics from palace of, xi, 34.
- Hæmatein, anhydrous crystalline, vii, 88.
- Hæmatoblasts. See Blood, viii, 60.
- Hæmorrhage, arrest of, viii, 60.
- Hæmorrhoids, viii, 751.
- Haffner, K., obit., i, 635.
- Hagen, E. A., obit., v, 600.
- Hagen, H. A., obit., xviii, 554.
- Hager, A. D., sketch, xiii, 636.
- Hagerstown, Md., xviii, 159.
- Haggan, experiments, vi, 751.
- Haggenmacher, G. A., explorations of, i, 331.
- Hagner, Peter V., obit., xviii, 554.
- Hagood, Johnson, v, 670.
- Hague, Arnold, x, 404.
- Hague, Mrs. S., obit., ii, 580.
- Hague, William, obit., xii, 588.
- Hahn-Hahn, Countess, obit., v, 600.
- Hahn, Michael, obit., xi, 680.
- Haight, Charles, obit., xvi, 625.
- Haight Henry H., obit., iii, 638.
- Haille, William, obit., i, 618.
- Hainan, revolt in, iv, 144.
- Haines, A. A., obit., xvi, 625.
- Haines, D., obit., ii, 580.
- Haines, W. S., experiments by, vi, 351.
- Haines's Bluff, assault on, x, 424, 425.
- Hair-cloth, ix, 387.
- Hakim Beg Toreh, x, 173.
- Hakodai, illustration, i, 429.
- Halberstadt, W., experiments by, viii, 112; x, 155.
- Halbherr, Dr., x, 37.
- Haldeman, S. S., sketch, v, 350.
- Hale, C. B., obit., i, 618.
- Hale, Horatio, xi, 46.
- Hale, Nathan, statue of, xii, 280.
- Hale, Sarah J., sketch, iv, 465.
- Halévy, L., obit., viii, 599.
- Half-breeds, rebellion of, in Canada, x, 124.
- Halifax, N. S., xiv, 148.
- Halifax, Viscount, obit., x, 661.
- Hall, Anna M., obit., vi, 693.
- Hall, Asaph, prizes to, iii, 39; iv, 53; observations by, iv, 52; viii, 26; ix, 50, 53; xi, 53.
- Hall, Benjamin F., obit., xvi, 626.
- Hall, Benjamin H., obit., xviii, 554.
- Hall, Benton J., sketch, xii, 649.
- Hall, Edward, nominated, xiii, 609.
- Hall, Edward, obit., ii, 580.
- Hall, Edwin, D. D., obit., ii, 580.
- Hall, Ezra, obit., ii, 580.
- Hall, F. P., experiments, viii, 116.
- Hall, James, sketch, xiv, 633.
- Hall, John W., iii, 236; obit., xvii, 549.
- Hall, Louisa J. P., obit., xvii, 550.
- Hall, Dr. W. H., obit., i, 618.
- Hall, Sir W. H., obit., iii, 655.
- Halle, University of, illustration, ii, 658.
- Halle, C. E., pictures by, x, 365; xii, 277.
- Halleck, Gen. H. W., x, 423, 424, 559, 560.
- Haller, F. N., obit., i, 635.
- Hallet's Reef, illustration, x, 472.
- Hallett, John H., obit., iii, 638.
- Halliburton, W. D., ix, 656.
- Halliday-Duff, Andrew, obit., ii, 601.
- Hall, Samuel C., sketch, xiv, 661.
- Hals, Frans, x, 363.
- Halsall, W. F., xi, 347.
- Halsbury, Lord, xi, 394.
- Halstead, O. S., obit., ii, 581.
- Halstead, Richard H., collection of, xii, 280.
- Halsted, R. F., sketch, vi, 399.
- Halsted, William, obit., iii, 638.
- Haly, Sir W. O'G., obit., iii, 635.
- Hamassen, i, 3, 4; rebellion, ii, 2.
- Hamburg, H. E., xi, 545.
- Hamberger, of Jena, xi, 539.
- Hambright, Henry A., obit., xviii, 555.
- Hambrueh, invention, i, 518.
- Hamburg, in the Customs Union, vii, 355.
- Hamburg, view of, iv, 438; incorporation of, xiii, 372.
- Hamer, Thomas L., x, 421.
- Hamering, Robert, sketch, xiv, 661.
- Hamilton, A., sketch, xiv, 633.
- Hamilton, C., xviii, 160.
- Hamilton, C. S., obit., xvi, 626.
- Hamilton, Dr. D. J., investigations by, ix, 654.
- Hamilton, F. H., sketch, xi, 680.
- Hamilton, James A., obit., iii, 638.
- Hamilton, J. G., xii, 280.
- Hamilton, Lord George, portrait, x, 445; sketch, x, 449.
- Hamilton, M. C., obit., xviii, 555.
- Hamilton, Ontario, xii, 122; xv, 129.
- Hamilton, Sir J. J., obit., i, 635.
- Hamilton, P., obit., ix, 606.
- Hamilton, Peter, sketch, xiii, 637.
- Hamilton, Sir W., obit., ii, 601.
- Hamilton, W. J., sketch, xiii, 637.
- Hamlet, experiments by, vi, 99.
- Hamley, Sir Edward B., obit., xviii, 581.
- Hamlin, Charles E., obit., xi, 681.
- Hamlin, Hannibal, obit. and port., xvi, 626.
- Hammerich, F., obit., ii, 601.
- Hammill, S. M., sketch, xiv, 633.
- Hannond, E., obit., xv, 680.
- Hammond, Gen., obit., i, 618.
- Hammond, John, sketch, xiv, 633.
- Hammond, Dr. W. A., ix, 554.
- Hampson, Thomas, ix, 45.
- Hampton, Wade, Governor of South Carolina, i, 725; sketch, ii, 375.
- Hampton, Wade, Jr., obit., iv, 693.
- Hancock, John, obit., xvi, 626.
- Hancock, John, obit., xviii, 555.
- Hancock, Gen. Winfield S., sketch, v, 350; portrait, v, 351; letter of acceptance, v, 701; obit., xi, 414.
- Hand, Augustus C., obit., iii, 638.
- Hand, Daniel, obit., xvi, 626.
- Hand, Samuel, obit., xi, 681.
- Hand-organ, x, 614.
- Handy, Isaac W. K., obit., iii, 638.
- Haneberg, D. von, sketch, i, 375.
- Hänel, Gustav F., obit., iii, 655.
- Haney, investigations by, vi, 19.
- Hanfstångl, F. von, obit., ii, 601.
- Hanks, John, sketch, xiv, 633.
- Hanksite, new mineral, x, 153.
- Hann, Prof., xii, 492.
- Hanna, B. W., obit., xvi, 627.
- Hannay, J. B., experiments by, iii, 85; iv, 136; v, 86.
- Hannibal, Mo., xv, 129.
- Hannington, Bishop, murder of, xi, 369.
- Hanoteau, H., obit., xv, 680.
- Hanover, death of the ex-King, and



- claim to the crown of, iii, 384; ix, 360; Guelph fund, vii, 358, note.
- Hansa, the, expedition of, i, 81.
- Hansen, J. E., obit., ii, 602.
- Hanson, invention by, vii, 741.
- Hanson, Sir R. D., sketch, i, 375.
- Hanston, experiments by, iv, 136.
- Haomoc, battle of, x, 25, 26.
- Häpke, M., xii, 492.
- Happersberger, statue by, x, 367.
- Harbor defenses of United States, v, 29.
- Harbor improvements, v, 244; Antwerp, vii, 280; docks at Milford Haven, vii, 279; xii, 260.
- Harcourt, Vernon, invention, vi, 96; ix, 45; x, 46.
- Harcourt, Sir William Vernon, sketch, v, 352.
- Hardeman, T., obit., xvi, 627.
- Harden, J. W., nominated, xiii, 263.
- Hardenberg, A. A., sketch, xiv, 633.
- Hardie, Gen. J. A., obit., i, 618.
- Hardin, C. H., obit., xvii, 550.
- Harding, C., xi, 544.
- Harding, William G., obit., xi, 681.
- Harding, W. W., sketch, xiv, 634.
- Hardinge, Gen., x, 13.
- Hardouin, Georges, obit., xviii, 582.
- Hardy, Benjamin F., obit., xi, 681.
- Hardy, Mother, obit., xi, 790.
- Hardy, Sir T. D., obit., iii, 655.
- Hare, George E., obit., xvii, 550.
- Hare, Thomas, obit., xvi, 673.
- Hares, in United States, x, 389.
- Harkcy, S. W., sketch, xiv, 634.
- Harkness, James, obit., iii, 638.
- Harkness, W., his address, xiii, 42; astronomical work, 47, 49; port., xviii, 24.
- Harlan County disorders, xiv, 487.
- Harlan, J. M., sketch, ii, 376.
- Harlech, Baron, obit., i, 635.
- Harlem River Bridge, xii, 297.
- Harmattan wind, the, xii, 416.
- Harmonium, x, 618.
- Harmony Society, the, xviii, 611.
- Harnett, W. H., obit., xvii, 550.
- Harney, W. S., sketch, xiv, 634.
- Harper, Fletcher, sketch, ii, 376; obit., xv, 648.
- Harper's Ferry, surrender of, x, 560; illustration, view of, ii, 764.
- Harrar, conquest of, xii, 2.
- Harriman, Tenn., xvi, 156.
- Harriman, Walter, obit., ix, 606.
- Harrington, C. S., obit., xii, 681.
- Harrington, George, obit., xvii, 550.
- Harrington, H. F., obit., xii, 588.
- Harris, Elisha, obit., ix, 607.
- Harris, John W., obit., xii, 589.
- Harris, Samuel S., sketch, xiii, 637.
- Harris, S. D., obit., ii, 581.
- Harris, Townsend, obit., iii, 638.
- Harris, William L., obit., xii, 589.
- Harrisburg, Pa., xi, 170; view of, i, 657.
- Harrison, Alexander, x, 362; prize to, 367; xi, 343.
- Harrison, Benjamin, sketch, xiii, 407; port., frontispiece. Messages. See Congress.
- Harrison, Benjamin F., obit., xi, 682.
- Harrison, Caroline Lavinia Scott, sketch and port., xvii, 331.
- Harrison, Carter H., sketch and port., xviii, 371.
- Harrison, H., nominated, xiii, 559.
- Harrison, W. H., xi, 536.
- Harrowby, Earl of, x, 449; sketch, x, 447.
- Hart, E., experiments by, viii, 633.
- Hart, Joel T., sketch, ii, 376.
- Hart, John S., sketch, ii, 377.
- Hart, Samuel, obit., iii, 639.
- Hartford, xi, 170; soldiers' and sailors' monument at, xii, 280; new Capitol at, iii, 219.
- Hartington, Marquis of, sketch, v, 353; x, 13; xi, 399.
- Hartmann, Herr, xi, 389.
- Hartmann, J. von, obit., iii, 655.
- Hartranft, J. F., sketch, xiv, 634.
- Hartridge, Julian, sketch, iv, 465.
- Hartt, Charles F., obit., iii, 639.
- Hartwig, Dr., discoveries by, iv, 51; v, 35; observations, vi, 39; x, 53.
- Hartzell, J. H., obit., xv, 648.
- Hartzenbusch, J. E., obit., v, 600.
- Harvard College, views of buildings, ii, 483-490.
- Harvard, John, statue, x, 362.
- Harvests of the World, vii, 376.
- Harvey, Hayward A., obit., xviii, 555.
- Harvey, Sir G., sketch, i, 376.
- Harvey, Peter, obit., ii, 581.
- Harvey, W. S., obit., xii, 589.
- Haseltine, C. F., collection, xii, 280.
- Hasenclever, R., sketch, i, 376.
- Hasenclever, W., sketch, xiv, 662.
- Haskett, W. J., obit., i, 619.
- Hassan, Pasha, i, 4, *et seq.*
- Hassard, J. R. G., obit., xiii, 637.
- Hasselquist, T. N., obit., xvi, 627.
- Hassinger, David Stanley, obit., xii, 589.
- Hassler, Dr., xii, 314.
- Hastings, xiii, 165.
- Hastings, Alice, sketch, xiii, 637.
- Hastings, G. F., obit., i, 635.
- Hastings, Hugh J., obit., viii, 589.
- Hastings, S. C., obit., xviii, 555.
- Hatasu, Queen, vii, 257; throne of, xii, 21.
- Hatch, Edward, sketch, xiv, 634.
- Hatch, Edwin, sketch, xiv, 662.
- Hatch, Rufus, obit., xviii, 555.
- Hatcher's Run, engagement at, x, 428.
- Hatchie, battle of the, x, 424.
- Hatfield and McCoy feud, the, xiii, 463.
- Hatfield, Edwin F., obit., viii, 590.
- Hatfield, H., observations, iii, 37.
- Hatfield House, x, 722.
- Hatfield, Robert M., obit., xvi, 627.
- Hathorn, Henry H., obit., xii, 589.
- Hatlestad, Ole J., obit., xviii, 556.
- Hatton, F., experiments by, vi, 98.
- Hatton, G., xi, 537.
- Hatton, John L., obit., xi, 717.
- Hatzfeldt, Count, x, 140, 143, 419.
- Hatzler, Elizabeth, obit., vii, 638.
- Haug, Martin, sketch, i, 376.
- Hausemann, Dr., xi, 539.
- Hauser, Miska, obit., xii, 628.
- Hausner, O., obit., xv, 680.
- Haussmann, Baron, obit., xvi, 674.
- Hautefeuille and Chappuis, discovery by, v, 86.
- Havana, illustration, i, 732.
- Havemeyer, F. C., obit., xvi, 627.
- Haven, E. O., sketch, vi, 399.
- Haven, Gilbert, sketch, v, 353.
- Haven, S. H., obit., xv, 643.
- Haverhill, Mass., xv, 130.
- Havre, view of, iv, 390.
- Hawaiian islands, ix, 388; x, 467; xi, 420; xii, 349; xiii, 412; xiv, 410; xv, 415; xvi, 353; xvii, 332; xviii, 373; President Cleveland's message concerning, xviii, 386; revolution in, 353; new constitution of, 354; treaty with United States, 355.
- Hawes, Richard, obit., ii, 581.
- Hawkes, Gen. E., obit., i, 635.
- Hawkes, S. J., xiii, 14.
- Hawkins, Samuel W., nominated, xiii, 763; obit., xvi, 674.
- Hawkshaw, Sir J., drainage engineering by, iii, 29.
- Hawley, J. H., nominated, xiii, 421.
- Hawscrs. See Cordage.
- Hay, Charles A., obit., xviii, 556.
- Hay, J. S., explorations of, i, 333.
- Haycraft, John B., experiments by, x, 691.
- Hayden, Ferdinand Vandever, survey, i, 335; ii, 336; x, 402-404.
- Hayden, Josiah, obit., ii, 581; sketch and portrait, xii, 356.
- Hayem, experiments by, viii, 60.
- Hayes, A. A., obit., xvii, 550.
- Hayes, E., bridge design, viii, 313.
- Hayes, Isaac, sketch, iv, 466.
- Hayes, Isaac Israel, obit., vi, 684.
- Hayes, John Lord, obit., xii, 580.
- Hayes, Lucy W., sketch and port., xiv, 634.
- Hayes, R. B., sketch, i, 376; portrait, i, frontispiece; election, see Election of 1876; inaugural, ii, 659; sketch; xviii, 386; home, 388; messages, see Congress and Public Documents.
- Haymerle, Karl von, sketch, iv, 465; pamphlet by, iv, 527; vi, 50, 399.
- Haynald, L., obit., xvi, 674.
- Hayne, Paul Hamilton, obit. and portrait, xi, 421.
- Hays, James B., sketch, xiii, 637.
- Hayti, viii, 428; ix, 393; insurrection, viii, 429; ix, 393; x, 468; xi, 422; xii, 357; xiii, 413; xiv, 411; xv, 416; xvi, 355; xvii, 335; xviii, 391.
- Hayward, A., obit., ix, 616.
- Haywood, B., obit., iii, 639.
- Hazara rebellion, the, xvii, 2.
- Hazard, Mrs., iv, 639.
- Hazard, R. G., sketch, xiii, 637.
- Hazen, H. Allen, x, 583.
- Hazen, J. H., sketch, xiv, 635.
- Hazen, Lake, x, 583.
- Hazen, William Babcock, sketch and portrait, xii, 358.
- Hazlehurst, Rev. T., obit., i, 635.
- Head, Natt, obit., xviii, 590.
- Health, influence of chemical works on, see Chemistry, i, 84; climatic influence in Colorado, iv, 156.
- Health, Charity, and Lunacy, Mass., Board of, established, iv, 596.
- Health Congress, i, 72.
- Health, National Board of, iv, 466.
- Healy, imprisonment of, viii, 413.
- Healy, J. P., obit., vii, 638.
- Hearing, instrument for testing the, iv, 503.
- Hearing, or Color-Hearing, vi, 400.
- Hearst, G., obit., xvi, 627.

- Heart, electrical condition of the, i, 250; experiments, viii, 681; new remedy for diseases of, ix, 272.
- Hearthfinery, improved, ix, 478.
- Heat, magnetic equivalent, i, 251; method for determining, x, 154; of the moon, xi, 55; radiation of, from the human body, xii, 487; of the globe, lost by radiation, 489; regulator, illustration, 651; xiv, 698; xvi, 728; xviii, 618.
- Heat-spectra, invisible, xi, 55.
- Heath, explorations by, vi, 332.
- Heating and Ventilation of Dwellings, v, 359.
- Heating of Houses, vi, 400.
- Heaton, Judge, obit., ii, 581.
- Hébert, P. O., sketch, v, 353.
- Hebrews, in Egypt, the, ix, 19; x, 35, 36.
- Hebrew technical institute, the, xii, 235.
- Hebrides, New, xi, 60; article, with map, xii, 537.
- Heckel, experiments by, viii, 118.
- Hecker, Friedrich, obit., vi, 694.
- Hecker, I. T., obit. and port., xiii, 638.
- Hedge, F. H., obit., xv, 648.
- Hedstrom, O. G., obit., ii, 581.
- Heemskerck, M. J., obit., vi, 694.
- Heer, I., obit., iv, 699.
- Hefele, Karl Josef, obit., xviii, 581.
- Heidelberg, view of, ii, 347; Festival, xi, 391.
- Heidenlain, experiments by, x, 694.
- Heilmann, W., obit., xv, 649.
- Heilprin, Michael, sketch, xiii, 638.
- Heimann, B. A., sketch, ii, 377; obit., iii, 655.
- Heine, Gustave, obit., xi, 717.
- Heinen, Dr. C., explosive, x, 104.
- Heinrich, experiments, viii, 521.
- Heis, E., obit., ii, 602.
- Heiskell, J. M., ease of, v, 187.
- Heisler, F., obit., i, 635.
- Heiss, M., obit., xv, 649.
- Helena, Ark., xviii, 160.
- Helena, Montana, xiv, 149.
- Helfmann, Hessa, vi, 796-798.
- Heligoland, illustration, iii, 404; xv, 376.
- Heliograph, the Manse, iv, 471; use of, in Afghan War, v, 8.
- Heliometer, the largest, ix, 47.
- Heliopolis, destruction of, ix, 600.
- Hellenic Society, the, xiii, 26.
- Hellenic studies, society for the promotion of, x, 35.
- Heller, Stephen, sketch, xiii, 663.
- Hell-gate gorge, Fraser river, British Columbia, xviii, 108.
- Hell-Gate, improvement of, i, 377; v, 250; vi, 250; x, 470; illustrations, x, 470-473, 475, 477.
- Hellhoffite, x, 347.
- Hellmann, Dr., xi, 543.
- Hellquest, Charles Gustave, xi, 343.
- Helmholtz, misquotation of, x, 691.
- Hemans, C. I., sketch, i, 382.
- Hemingway defalcation, xv, 559.
- Henderson, P., obit., xv, 649.
- Hendricksen, T. F., obit., xi, 682.
- Hendricks, Thomas A., sketch, i, 382; sketch and portrait, ix, 395; record of death, x, 650.
- Hennessy, Sir J. P., obit., xvi, 674.
- Henne, Antonia, obit., xii, 590.
- Henneberg, Rudolf, sketch, i, 383.
- Hennequin, A. N., obit., xii, 628.
- Henner, J. J., x, 359, 363; xi, 343, 347; xii, 276.
- Henni, J. M., sketch, vi, 400; obit., vi, 794.
- Henningsen, C. F., obit., ii, 581.
- Henrici, Jacob, obit., xvii, 550.
- Henrietta island, vii, 331.
- Henriquel, N. D., obit., xvii, 594.
- Henry, Caleb S., obit., ix, 607.
- Henry, James, obit., i, 635.
- Henry, Joseph, sketch and portrait, iii, 419; experiments, v, 446; port., xv, 574.
- Henry, J. T., obit., iii, 639.
- Henry, Paul, discoveries by, i, 46; ii, 44; vii, 35; prize to, iii, 39; ix, 47; x, 49; xi, 51.
- Henry, Prosper, discovery by, iii, 36; prize to, iii, 39; ix, 47; x, 49; xi, 51.
- Henry, Dr. R. S., ix, 656.
- Henry, Sir T., obit., i, 635.
- Hensel, Louise, obit., i, 635.
- Henselt, Adolf, sketch, xiv, 662.
- Heraclopolis, excavations at, xvi, 21.
- Heracline, x, 346.
- Herat, capture of, vii, 4; its importance, iv, 6; ix, 4, 6, 7; Persian desire to annex, x, 14; description, x, 7; illustration, views in, ii, 6; x, 1.
- Herbeck, J., obit., ii, 602.
- Herbert, Earl of Carnarvon, portrait, x, 447.
- Herbert, Hilary A., sketch and port., xviii, 735.
- Herbert, Percy E., sketch, i, 383.
- Herbinger, Col., x, 26, 27.
- Herbst, E., obit., xvii, 594.
- Herculano de Carvalho e Arango, A., obit., ii, 602.
- Heredity, stature by, x, 47.
- Hereford, F., obit., xvi, 627.
- Hereroland, ix, 362, 363; x, 137, 138.
- Heresy-trials, Andover, xi, 206.
- Hergenrother, J., obit., xv, 680.
- Hérissou, viii, 357, 367.
- Hering, Constantine, v, 354.
- Héri-Rud, the, x, 4; source of the, xii, 309.
- Herkomer, H., x, 359; xii, 277.
- Hermes of Commagene, ix, 23.
- Hermitage, St. Petersburg, exhibition at, xii, 278.
- Herndon, W. H., obit., xvi, 628.
- Herndon, Com. William L., xi, 44.
- Hernia, viii, 751.
- Herodotus, quoted, ix, 21.
- Heron, Matilda, obit., ii, 581.
- Heroöpolis, ix, 19; x, 35.
- Herreshoff, C. F., sketch, xiii, 638.
- Herries, Baron, obit., i, 635.
- Herrmann, Herr, obit., xii, 628.
- Herroun, Dr. E. F., experiments, ix, 658; x, 695.
- Herschel, observations, iii, 36.
- Herschel, Sir John, xi, 581.
- Herter, Dr., xii, 674.
- Hertzen, Alexander, iv, 682.
- Hervey Islands, xiv, 410.
- Herz, C., experiments by, vi, 258; computations, viii, 21.
- Herzegovina, i, 757; v, 46; vii, 55; viii, 548; ix, 64; inaps, i, 751, 754; xiv, 64.
- Herzen, experiments by, viii, 635.
- Herzog, Bishop, sketch, i, 650.
- Hesse, F., W., sketch, xiii, 663.
- Hesse, Prince Alexander, sketch, xiii, 663.
- Heuglin, T., sketch, i, 322, 338.
- Heunert, K., obit., i, 635.
- Heusch, Capt., ix, 359.
- Hewes, C. M. A., obit., iii, 639.
- Hewett, Com., i, 9; contest with Africans, i, 9; ix, 293, 296.
- Hewett, Consul, x, 119-121.
- Hewitt, E. A., obit., ii, 581.
- Hewitt, J. H., obit., xv, 649.
- Hewson, James, obit., iii, 639.
- Hexamer, statue by, v, 555.
- Heyward, experiments, vi, 100.
- Hibben, E. C., obit., i, 619.
- Hicklin, J., obit., ii, 602.
- Hickok, L. P., sketch, xiii, 638.
- Hickory Town, Africa, x, 121, 122.
- Hicks-Beach, Sir Michael, x, 440; portrait, 447; sketch, x, 449; xi, 399.
- Hicks Pasha, William, in the Sudan, viii, 300; defeat and death of, viii, 301; sketch, port., viii, 430; x, 318.
- Hicks, T., obit. and port., xv, 649.
- Hidden, W. E., x, 153.
- Hiddenite, vi, 401.
- Hieroglyphics, translation, ix, 600.
- Hiestand, John A., xv, 650.
- High Bridge, view of, i, 604.
- High License in Minnesota, xii, 512.
- Highest mountain, vi, 332.
- Higgins, A., obit., xv, 650.
- Higginson, Thomas W., ix, 598.
- Higinbotham, G., obit., xviii, 581.
- Hildburghausen, H., obit., xi, 682.
- Hildebrand, B., obit., iii, 656.
- Hildebrandsson, Prof., xii, 490.
- Hildebrandt, P., obit., vi, 694.
- Hilditch, Sir E., obit., i, 635.
- Hilgard, J. E., ix, 44.
- Hilgard, Julius E., obit. and port., xvi, 628.
- Hill, Benjamin H., sketches, ii, 337; iv, 471; and portrait, vii, 378; statue of, xi, 347.
- Hill, Daniel H., sketch, xiv, 635.
- Hill, David B., ix, 588; x, 637; xi, 11; renominated, xiii, 609.
- Hill, Frederick, xii, 701.
- Hill, G. W., xii, 45.
- Hill, John B., obit., xi, 682.
- Hill, Mrs. H., obit., ii, 602.
- Hill, Joshua, obit., xvi, 628.
- Hill, Sir Rowland, sketch, iv, 472.
- Hill, Thomas, obit., xvi, 629.
- Hillard, George S., sketch, iv, 473.
- Hillebrand, K., obit., ix, 616.
- Hillebrand, W. F., xii, 106.
- Hiller, F., obit., x, 661.
- Hilliard, F., obit., iii, 639.
- Hilliard, Henry, sketch, ii, 377.
- Hilliard, H. W., obit., xvii, 550.
- Hilton, Dr. J., obit., iii, 656.
- Himalayas, altitudes in, ix, 543; ascent of, ix, 349.
- Himly, experiments by, ii, 501.
- Hinkley, Isaac, sketch, xiii, 638.
- Hineks, Sir Francis, obit., x, 478.
- Hind, discovery of asteroids, ii, 44.
- Hindus, aid to the British, x, 14.
- Hinkhead, John H., xi, 598.
- Hirsch, Samuel, sketch, xiv, 635.
- Hirzel, S., obit., ii, 602.
- Hissarlik, excavations at, ix, 24.
- History, recent works of. See Literature, in every volume.
- Hitehoeck, J. R., obit., iii, 639.
- Hitehoeck, R. B., sketch, xiii, 638.



- Hitchcock, Roswell D., clergyman, sketch and port., xii, 358.  
Hitchcock, Roswell D., naval officer, obit., xvii, 550.  
Hitchcock, R. S., obit., xvi, 629.  
Hittites, vii, 263; ix, 28; inscriptions, xii, 25; xiii, 32; xvii, 14.  
Hla-oo, xii, 83.  
Hoadley, John C., obit., xi, 682.  
Hoadley, Silas, xiii, 11.  
Hoard, W. D., nominated, xiii, 847.  
Hobart, John H., sketch, xiv, 635.  
Hobart Pasha, sketch, ii, 377; obit., xi, 717.  
Hobbs, Alfred C., obit., xvi, 629.  
Hoboken, xi, 170.  
Hochstetter, F., obit., ix, 616.  
Hooking valley, strike, ix, 631; x, 672.  
Hodge, A. A., obit., xi, 683.  
Hodge, Caspar W., obit., xvi, 629.  
Hodge, Charles, sketch, iii, 420.  
Hodgkins, T. G., obit., xvii, 551.  
Hodgson, Telfair, obit., xviii, 556.  
Hodgson, W. N., sketch, i, 384.  
Hodson, Doveton, obit., i, 635.  
Hoe, Richard March, obit., xi, 683.  
Hoe, Robert, obit., ix, 607.  
Hoek, K. C. F., obit., ii, 602.  
Hoes, Rev. R. R., xii, 709.  
Hoey, John, obit., xvii, 551.  
Hoff, H. K., obit., iii, 639.  
Hoffman, Charles F., obit., ix, 607.  
Hoffman, John T., sketch, xiii, 639.  
Hoffman, M., obit., iii, 639.  
Hoffman, Ogden, obit., xvi, 629.  
Hoffman, A. W., obit., xvii, 595.  
Hofmann, J. von, obit., ii, 602.  
Hofmeister, experiments by, x, 694, 695.  
Hofmeister, W., obit., ii, 602.  
Hogan, T. M., obit., xv, 650.  
Hogarth pictures, sale of, x, 361.  
Hogg, Sir J. W., sketch, i, 384.  
Hoghton, Sir H. de, obit., i, 635.  
Hog Island dispute, xiv, 532.  
Hohenthal, Countess, obit., ii, 603.  
Hohenzollern, castle of, illustration, ii, 350.  
Hoisting-shears, xiii, 306.  
Holbrook, Dr. M. E., ix, 654.  
Holcombe, Capt., x, 139, 140.  
Holefeiss, F., observations by, iv, 135.  
Holden, Edward S., ix, 46; xi, 58.  
Holden, W. W., obit., xvii, 551.  
Holder, J. B., sketch, xiii, 639.  
Holford bonds, the, ix, 43.  
Holidays, xii, 475.  
Holkar, Maharajah Tuekaji Rao, obit., xi, 717.  
Holl, Frank, sketch, xiii, 633.  
Holland. See Netherlands.  
Holland, John, ix, 476.  
Holland, J. G., sketch, vi, 401.  
Holley, Alex. L., bust of, xv, 621.  
Holley, Sallie, obit., xviii, 556.  
Holliday, Benjamin, obit., xii, 590.  
Holliday, F. W. M., sketch, ii, 762.  
Hollins, G. N., sketch, iii, 420.  
Holly, H. H., obit., xvii, 551.  
Holly's steam-heating, iii, 421.  
Holly Springs, capture of, x, 424.  
Holm, G., x, 398.  
Holmes, Alfred, obit., i, 635.  
Holmes, Senator, obit., i, 635.  
Holmes, S. T., obit., xv, 650.  
Holmes, T. H., obit., v, 593.  
Holsinger, H. R., vii, 63.  
Holst, Hans Peter, obit., xviii, 581.  
Holstein Canal, xv, 281.  
Holstein-Holsteinborg, Count, obit., xvii, 595.  
Holstein-Ledreborg, Count, x, 291.  
Holtendorff, F., sketch, xiv, 662.  
Holtzke, Dr., experiments, x, 690.  
Holub, Dr. E., explorations of, i, 332; ii, 333.  
Holy Cross, Society of the, ii, 21.  
Holyoke, Mass., xi, 170.  
Holzgethan, L. von, sketch, i, 384.  
Home, David D., obit., xi, 682.  
Home Hygiene, v, 354.  
Homcs, Henry A., obit., xii, 590.  
Homestead acts, in some States, i, 203; in Georgia, i, 337; iii, 370; in Arkansas, iv, 45; in Minnesota, iv, 627; in South Carolina, iv, 818; in Florida, vi, 297; vii, 314.  
Homestead law, the, xiii, 469.  
Homestead strike, xvii, 626.  
Homicide, by necessity, ix, 522, 523; statistics, xvii, 761.  
Hondt, Antoine de, x, 611.  
Honduras, revolution in, i, 22; iii, 423; vii, 431; ix, 396; British, ix, 803; x, 478; xi, 423; filibustering attempt in, 424; xii, 359; xiii, 415; xvi, 358; xvii, 336; British, xiii, 839; xiv, 413; xv, 407, 417; xvi, 346; xvii, 327.  
Hone, Mrs. E., obit., ii, 582.  
Honey, James, murder of, x, 87.  
Hong Kong, illustration, ii, 100; xv, 405; xvi, 344; xvii, 326; xviii, 391; civil war, xviii, 392.  
Honolulu, Government house, xviii, 374.  
Hood, E. Paxton, obit., x, 661.  
Hood, J. B., sketch, iv, 473; x, 428.  
Hooker, Joseph, sketch, iv, 475.  
Hooper, Capt., voyage of, v, 301.  
Hooper, Luey H., obit., xviii, 556.  
Hoosac Tunnel, the, xi, 529.  
Hope, James, obit., xvii, 551.  
Hope, James Barron, obit., xii, 591.  
Hope, Beresford, x, 721.  
Hopeful trials, the, x, 62.  
Hopkins, G. H., observations by, vii, 526; ix, 514.  
Hopkins, J. C., obit., ii, 582.  
Hopkins, J. H., obit., xvi, 630.  
Hopkins, Lueius, obit., i, 619.  
Hopkins, Mark, sketch and portrait, xii, 360.  
Hopkins, Robert, obit., xvi, 630.  
Hopkins, S. T., obit., xvii, 551.  
Hopkinson, invention, vi, 253; xii, 480.  
Hops, in Washington Territory, xii, 800.  
Horbaiczewski, experiments by, x, 157.  
Hore, discoveries, v, 135, 297.  
Horembebi, colonnade of, x, 32.  
Horhotpu, tomb of, ix, 21.  
Horn, Ephraim, obit., ii, 582.  
Horne, Richard H., obit., ix, 616.  
Hornellsville, incorporated, xiii, 608.  
Horrea Galbæ, xi, 35.  
Horsemanship, xv, 418.  
Horse, paces of the, iii, 723.  
Horse show, xv, 421.  
Horses, racing, xii, 767; running, 770; trotting, 768; steeple-chasing, 771; breeding, in France, 771.  
Horsford, A., obit., x, 662.  
Horsley, C. E., obit., i, 619.  
Horsman, E., sketch, i, 384.  
Horst, Baron, iv, 60.  
Hort, Sir J. W., obit., i, 635.  
Horton, Henry B., invention by, x, 617.  
Horton, N. A., obit., xvi, 630.  
Horvatovich, Gen., x, 731; xii, 735.  
Hosford, E. N., obit., xviii, 556.  
Hoskyns, C. W., obit., i, 635.  
Hosmer, G. W., obit., vi, 684.  
Hosmer, J., obit., xv, 650.  
Hosmer, W. H. C., obit., ii, 582.  
Hospitals, for seamen, history of. See Service, United States Marine Hospital; New York Woman's, viii, 718.  
Hotehkiss, B. B., obit., x, 650.  
Hotehkiss, G. W., obit., iii, 639.  
Hotehkiss, Jeddiah, ix, 538.  
Hotehkiss, Julius, obit., iii, 640.  
Hot drinks, influence of, xii, 676.  
Hot Springs, x, 600.  
Hot Springs, Arkansas, disputed title to, iii, 24; iv, 45; v, 25.  
Hotel at Brighton Beach moved, xiii, 302, 303.  
Hough, G. W., observations by, vii, 36; viii, 22; x, 50.  
Houghton, Baron, obit., x, 661.  
Houghton, G. W. W., obit., xvi, 630.  
Houk, L. C., obit., xvi, 630.  
Hounds, ix, 257, 258, 262.  
House-boats, xiii, 416.  
House-drainage, v, 364.  
House of Commons, bar of the, with illustrations, vii, 202; discipline in. See Parliament.  
House of Lords, the, ix, 375. See also Parliament.  
House of Statuettes, the, ix, 20.  
House of the Glass Zodiac, ix, 20.  
House of the Papyri, the, ix, 20.  
Houseman, J., obit., xvi, 630.  
Houses, Portable, xi, 424; illustrations, 425, 426; American country-seats, xii, 361; illustrations, 362, 363, 364, 366, 367, 369, 370.  
Houston, view at, i, 746; recent progress, xiv, 150.  
Houzeau, experiments by, viii, 115; sketch, xiii, 663.  
Hovas of Madagascar, the, vii, 492; ix, 458-460; x, 565.  
Hovey, A. P., nominated, xiii, 442; obit., xvi, 630.  
Hovey, Charles M., obit., xii, 591.  
Hovgaard, expedition of, vi, 323.  
How, Mary K., obit., viii, 638.  
Howard, Cardinal Edward, obit., xvii, 595.  
Howard, Dr. B., his method of resuscitation, iii, 765.  
Howard, Gen., Indian campaign, ii, 40; iii, 673.  
Howard, R. B., sketch, xiv, 662.  
Howard, V. E., sketch, xiv, 635.  
Howard, W. C., invention by, vi, 267.  
Howarth, Rev. H., obit., i, 636.  
Howe, Earl, obit., i, 636.  
Howe, Samuel G., sketch, i, 383.  
Howe, J. W., obit., xv, 650.  
Howe, Timothy O., sketch, with portrait, vii, 310; viii, 432.  
Howe, W., obit., xv, 650.  
Howe, William C., obit., xi, 682.  
Howell, John C., obit., xvii, 551.  
Howes, O., obit., xv, 650.  
Howgate, Capt. H. W., Arctic expedition, ii, 324; vii, 810.  
Howitt, Mary, sketch, xiii, 664.

- Howitt, William, obit., iv, 700.  
 Howland, E. P., address, xiii, 44.  
 Howland, R. S., obit., xii, 591.  
 Howland, W. W., obit., xvii, 552.  
 Howson, John S., obit., x, 662.  
 Hoyt, Henry M., iii, 684; obit., xvii, 552.  
 Huang Sic Chen, x, 105.  
 Hubbard, Bela, x, 401.  
 Hubbard, C. D., obit., xvi, 631.  
 Hubbard, J. F., obit., i, 619.  
 Hubbard, J. G. See Addington.  
 Hubbard, R. D., obit., i, 210; ix, 607.  
 Hubbell, A. S., obit., xvi, 631.  
 Hubbell, Judge L., obit., i, 619.  
 Huber, J., obit., iv, 700.  
 Hubner, Baron J. A., obit., xvii, 595.  
 Hübner, O., obit., ii, 603.  
 Huddleston, J. W., obit., xv, 681.  
 Hudson Bay Route to Europe, ix, 466; x, 133; explorations, x, 133, 399.  
 Hudson, Henry N., obit., xi, 638.  
 Hudson, J., obit., x, 662.  
 Hudson, M. C. See Clemmer, Mary.  
 Hudson, N. Y., xii, 122.  
 Hudson River, improvement of, xvi, 359.  
 Hudson River Tunnel, v, 580.  
 Hué, treaty, viii, 769; revolt at, x, 30.  
 Hueffer, Francis, sketch, xiv, 662.  
 Huelva pier, the, iii, 287.  
 Huger, Benjamin, obit., ii, 582.  
 Huggins, Dr. William, observations by, vii, 37; ix, 53; x, 47, 52, 54; xi, 49, 51, 52; prize to, viii, 28; port., xvi, 42.  
 Hughes, Archbishop, x, 562-564.  
 Hughes, D. E., observations by, xi, 534.  
 Hughes, E. D., invention by, iv, 502. See Microphone, iii, 562.  
 Hughes, J. S., nominated, xiii, 441.  
 Hugo, Victor, i, 315; obit., with portrait and house, x, 479.  
 Hugues, Clovis, ix, 345.  
 Hugues-Morin affair, ix, 345.  
 Hulke, Mr., operation by, x, 743.  
 Hull Harbor improvements, xvii, 310; x, 333.  
 Hull, H. H., obit., i, 619.  
 Hull, J. B., obit., xv, 651.  
 Hull, Joseph H., obit., iii, 640.  
 Hull, William H., obit., ii, 582.  
 Hullah, John, obit., ix, 617.  
 Hulse, J. A., obit., i, 636.  
 Human Freedom League, the, xvi, 360.  
 Humbert, Ferdinand, picture by, xi, 343.  
 Humbert I, of Italy, accession of, iii, 456; attempt on the life of, iii, 458; assassin's sentence commuted, iv, 528; portrait on steel, ix, 412.  
 Humboldt, Alexander von, x, 593, 607.  
 Hume, Rev. Mr., xii, 148.  
 Humes, T. W., obit., xvii, 552.  
 Humphrey, Lyman U., nominated, xiii, 461.  
 Humphreys, Andrew A., sketch, viii, 433.  
 Humphreys, Edward Rupert, obit., xviii, 556.  
 Humphry, William Gilson, obit., xi, 717.  
 Humpidge, G. T., x, 154.  
 Hungary, in every volume but viii; house of Magnates in, ix, 70; marriage laws in, ix, 69; national exhibition, x, 73; particularist movements in, xvii, 51. See Austria-Hungary.  
 Hunias, the, iv, 400.  
 Hunn, David L., sketch, xiii, 639.  
 Hunt, Charles S., sketch, i, 389.  
 Hunt, George W., obit., ii, 603.  
 Hunt, H. J., obit. and port., xiv, 635.  
 Hunt, Holman, pictures by, x, 365; xii, 277.  
 Hunt, Richard M., x, 361.  
 Hunt, Robert, obit., xii, 629.  
 Hunt, Samuel, obit., iii, 640.  
 Hunt, T. Sterry, x, 577; xii, 101; obit. and port., xviii, 552.  
 Hunt, Ward, obit., xi, 684.  
 Hunt, William H., obit., ix, 607.  
 Hunt, W. M., iv, 478.  
 Hunter, C. F., obit., ix, 608.  
 Hunter, David, obit., xi, 684.  
 Hunter, D. E., observations by, iii, 37; iv, 52; v, 36; vii, 39, 40.  
 Hunter, Dr., of Carlisle, ix, 637.  
 Hunter, James B., sketch, xiv, 636.  
 Hunter, Robert M. T., sketch and portrait, xii, 371.  
 Hunter, William, obit., xi, 684.  
 Huntington, O. W., experiments by, vi, 93.  
 Huntington, W. H., obit., x, 650.  
 Huntsville, Ala., xiv, 151.  
 Hunza-Nagar, conquest of, xvii, 349.  
 Hurlburt, H. B., gift by, x, 366.  
 Hurlbut, Stephen A., sketch, vii, 379; in Peru, vi, 738.  
 Hurling, xv, 421.  
 Hurd, Nathaniel F., obit., xi, 684.  
 Huron, proposed Territory of, i, 220.  
 Huron, wreck of the, ii, 537.  
 Husband, William, obit., xii, 629.  
 Hussein-Avni Pasha, sketch, i, 389; x, 315.  
 Hussey, John, obit., xii, 591.  
 Husted, J. W., obit., xvii, 552.  
 Huston, A. C., obit., i, 619.  
 Hutchins, Waldo, obit., xvi, 631.  
 Hutchinson, xiii, 165.  
 Hutchinson, Samuel, obit., i, 619.  
 Hutchinson, J. C., obit., xii, 522.  
 Hutton, Richard H., quoted, xiii, 7.  
 Huxley, on medicine and biology, vi, 550.  
 Huxley, T. H., quoted, xiii, 7.  
 Huzara tribe, the, x, 7, 8.  
 Hyacinthe, Father, iv, 706.  
 Hyades, Dr., x, 41.  
 Hyde Park, mass-meeting, x, 452.  
 Hyderabad, xii, 382.  
 Hydraulic canal lift, xiii, 300; railway, xiv, 249.  
 Hydraulic mining, xvii, 73; in California, xviii, 119.  
 Hydriodate of hyoscine, x, 299.  
 Hyatt, celluloid made by, iii, 459.  
 Hyatt, James W., obit., xviii, 557.  
 Hydrochlorate of cocaine, ix, 271.  
 Hydrodynamic Analogies to Electricity and Magnetism, vi, 404.  
 Hydrofluoric Acid, molecular weight of, vi, 92.  
 Hydrogen, purification of, ii, 94; manufacture, v, 88; peroxide of, iii, 89; vii, 96; dioxide, viii, 117.  
 Hydrographic Office, xiv, 813.  
 Hydrography, i, 324; ii, 323; iii, 351; v, 288; of Behring Strait, vi, 325; surveys, vii, 331; of Atlantic, xiii, 58.  
 Hydrophobia, ix, 398; x, 484.  
 Hyett, William H., obit., ii, 603.  
 Hygiene, Home, v, 354; and Demography, Congress on, xvi, 342.  
 Hyksos, the, vii, 257; xii, 21; monuments, xiii, 28.  
 Hylton, Baron, obit., i, 636.  
 Hyperion, satellite of Saturn, ix, 50.  
 Hypnone. See Acetophenone, xi, 289.  
 Hyrcanus, fortifications of, ix, 28.  
 Ibach, J. J., sketch, xiii, 639.  
 Icaria, discoveries at, xiii, 26.  
 Ice, Artificial, i, 517; xi, 427; seawater, xii, 104.  
 Ice-boats, x, 794.  
 Ice, Hot, vi, 405.  
 Iceland, Parliament of, iv, 314; vi, 212; famine in, vii, 191; xi, 284; xii, 223; xiii, 268; xiv, 268; xvi, 248.  
 Ielthvol, viii, 434; xi, 290.  
 Idaho, government, legislative sessions, finances, agriculture, mining, education, etc., in every volume after vii; polygamy, viii, 435; ix, 400; resources, viii, 435; growth, viii, 436; railroads, ix, 399; reclamation of desert land, ix, 399; x, 488; rivers and lakes, xi, 430; Indians and reservations, xi, 431; xii, 374; annexation question, xii, 374; xiii, 419; xiv, 414; and map, xv, 422; xvi, 361; xvii, 337; xviii, 393.  
 Idlesleigh, Sir Stafford Henry Northcote, Earl of, obit., xii, 629. See also Northcote, Sir Stafford.  
 Ide, Jacob, sketch, v, 371.  
 Identification and description, personal, xiii, 421.  
 Ideville, Henri, obit., xii, 630.  
 Iglesias, J. M., sketch, i, 391; claim and defeat of, ii, 512; viii, 65; ix, 649; resignation, x, 687.  
 Ignatieff, N. P., sketch, i, 381.  
 Iguanodon, illustration, viii, 436.  
 Ikaba, King, portrait, ix, 167.  
 Ilibert Bill, the, in India, viii, 441.  
 Iles, Malvern W., xi, 537.  
 Ili. See Kulja.  
 Illinois, statistics, State government, political conventions, elections, etc., in each volume; views in, i, 392; ii, 383, 385; new Capitol, i, 391; Gov. Cullom, 395; Senator Davis, ii, 383; proposed constitutional amendment, iii, 427; Christ Church property, 431; election of senator, iv, 478; labor bureau, 486; history of debt, v, 371; trade of Chicago, v, 377; vi, 410; project for canal enlargement, 380; vi, 410; oleomargarine law, 408; act for cession of canal, vii, 380, 381; regulation of railroads, viii, 438; decision in Mackin case, x, 491; armed processions, 491; strike of quarrymen and mob, xi, 433; pleuro-pneumonia, xi, 434; xii, 377; Chicago elections, 377; anarchists, 377, 378; anarchists pardoned, xviii, 398; suits against State officers, 397.  
 Illumination in surgery, viii, 752.



- Popango volcano, view of, xvi, 786.  
 Image, Ancient, xiv, 18.  
 Imbriani, Vittorio, obit., xi, 717.  
 Immigrants, cost of care of, to New York, v, 579; taxation of, vii, 463; ix, 428.  
 Immigration, Chinese, vii, 387; see also Chinese; diplomatic correspondence, i, 231; bill on, iv, 218; treaty on, v, 704.  
 Immigration, to United States, ii, 386; vi, 412; rules on, vi, 414; of paupers and criminals, vi, 487; viii, 157; abuses, viii, 571; to Australia, ii, 51; v, 37; vi, 44; to Canada, v, 216, 219; to Central America, iii, 418, 748; to South America, i, 77; ii, 28, 74, 75; v, 22; viii, 68, 123; to Southern States, iii, 331; iv, 641; v, 308, 539, 584; vi, 299; to Western States, i, 84, 85, 231; ii, 80; iii, 74, 76, 676; iv, 657; v, 612; viii, 78, 268; bill, xvi, 225; pauper, xiii, 424; xiv, 603; Southern convention on, 8; xv, 620.  
 Impeachment, report on, of Judge Archibald, ii, 297; trial in Texas, xviii, 715.  
 Imprisonment, damages for false, iv, 675.  
 Improvements, Internal, President Arthur on, viii, 161.  
 Im Thurn, E. F., exploration by, ix, 540; x, 400.  
 Inability or Disability of the President, vi, 414.  
 Inaugurations, precedence at, x, 253.  
 Indebtedness of the United States, of the States, and of the world, vii, 392; charts, 402, 403; maps showing distribution, 392, 408.  
 Indemnity Funds, from China and Japan, vi, 778.  
 Independent Republican movement, ix, 773.  
 Indexes in book-covers, xvi, 708.  
 Induction-Balance, iv, 502.  
 India, statistics, government, etc., in every volume; views in, i, 401-405; ii, 390, 392, 393; journey of the Prince of Wales, i, 401; resignation of Lord Northbrook and appointment of Lord Lytton, 402; sketches of the viceroy, 406; the Queen's title, 403, 404; ii, 390; the Malay insurgents, i, 404; disorders in the Naga Hills, 404; freshet in the Punjab, 404; Mohammedan sympathy with the Turks, 404; disturbances in Baroda, ii, 394; and Madras, i, 404; epidemics, famine, and cyclone, 404, 405; Sunday-schools, 405, 406; changes of twenty years, ii, 390; reception of the chiefs, the Khan of Kelat, 391; decentralization scheme, 391; depreciation of silver, 391, 392; cost and extent of the famine, 392; sufferings from, iii, 436; epidemics, ii, 393; iv, 494; the Afridis, ii, 395; Calcutta University, 394; bill for regulating the native press, iii, 435; native armies, 436; scheme of public works, 436; troops for Malta, 436; Afghan war, 437; reported flight of Shen Ali, 438; trial of the Rajah of Pooree, 438; right to cede territory in, 438; occupation of Socotra, 438; new Order of the Indian Empire, 438; sequels to the Afghan war in the Punjab, iv, 491; Yakob Khan under guard, 491; events in Kohistan, 491; movements in Afghanistan, 492, 493; measures of retrenchment, 493; protection of the ryots from extortion, 493; license law, 493; famine in Cashmere, 494; finances, 494; attempted murder of the viceroy, 494; outrages of the hill tribes, 494; hostilities of the Nagas, 495; v, 388; progress of Christianity, iv, 495; election, excitement, v, 383, 384; resignation of Lord Lytton and appointment of the Marquis of Ripon, 384; declaration of policy and army reorganization, 384, 385; expense of the Afghan war, 386; native donations, 386; Baroda, Travancore, and Mysore, 386, 387; cinchona-culture, 387; representative government proposed, 387; overpopulation and poverty, 388; Runpa insurrection, 389; attempt on the viceroy, 389; land-slide, 389; Brahmo-Somaj, 389; farming-system, vi, 420, 421; the country restive under British military despotism, 421; land reform in Bengal, 422; Mysore restored to native rule, 422; danger of outbreaks, 422; conspiracy in Kolapore, 422; Brahminical conspiracies, 423; protest against evacuation of Candahar, 423; border outbreaks, 423; new governor of Madras, 423; native disturbances, vii, 415; Russian activity in, 415; the King of Burmah's position, 416; local self-government, viii, 441; the Ilbert bill, 441; the Afghan frontier, ix, 406; settlement, x, 497; goats and famines, ix, 406; snakes, gold, petroleum, tea, 406; paper-manufacture, 407; irrigation, 407; Calcutta Exhibition, 407; Lord Ripon's administration, x, 494; Bengal tenancy act, 495; social reforms, 496; insurrection in Bhotan, 496; in Nepaul, 427; restoration of Gwalior to Scindia, 497; survey of, 395; the silver question, xi, 437; religious riots, 438; mission to Thibet, 439; equalization of land-tax, 453; establishment of a Roman Catholic hierarchy, xii, 382; Indian women, 382; Hyderabad, 382; Chinese suzerainty over Indian states, 383; wheat supply, 380; national congress, xvii, 348; famine, 349; opium question, 349; Black Mountain tribes, 350; abolition of free silver, xviii, 401.  
 Indiana, State government, elections, statistics, etc., in each volume; views in, i, 407; ii, 895; the presidential difficulty, i, 411; Gov. Williams, 411; constitutional amendment, iv, 496; coal-mining, 501; building-stone, 501; mine inspector, 502; decision as to the 29th of February, 502; importation of negroes, v, 394; election irregularities, 396; the liquor law, vi, 426; contracts by married women, 426; diseases of domestic animals, 427; special congressional election, viii, 444; State university, xi, 440; other State institutions, 440, 441; progress in utilizing natural gas, xii, 386; election frauds, 386; population, xv, 438; cities of, xvii, 351; industries, xviii, 405; decisions, 407.  
 Indianapolis, Capitol at, iii, 440; growth of, xii, 122; illustration, ii, 395.  
 Indian Messiah, xv, 440.  
 Indian reservations, xiii, 569; xiv, 775, 817; lands opened, xvi, 695, 801, 869; xviii, 694.  
 Indian revolt in Bolivia, xvii, 62.  
 Indians, American, missions to, i, 64, 76; iv, 190; in the Black Hills, i, 681; cession to Canada by Blackfeet, ii, 254; President Hayes on, ii, 669; iii, 710; wars and raids of, ii, 39; iii, 28, 29, 463, 673; iv, 46; v, 27, 28; vi, 35; viii, 17; numbers killed in engagements with, v, 26; plan to transfer care of, iii, 29; iv, 47; for a body of cavalry, iii, 29; for education of children, iii, 29; v, 28, 649; Western reservations, ii, 539; iv, 150; v, 29, 116, 118; vi, 117, 781; census of Penobscots, iv, 576; elections, vi, 524; decision in favor of Poncas, iv, 653; the Narragansetts, iv, 772; their tribal relations abolished, v, 654; in Florida, vi, 298; in Canada, v, 218; Baptist convention of, viii, 52; famine in Montana, viii, 548; statistics of, v, 28; new policy toward, v, 783; troubles in Chili with, viii, 64; education, viii, 781; not citizens, ix, 425; numbers and lands of, x, 762, 763; disturbances, x, 752; in Dakota, x, 286; xii, 219; relics of, ix, 14-16; character of the Apaches, xii, 30; education of, 386; attack upon, 143; in New Mexico, 545; Pueblo, 545; reports of agents, 777; xiii, 261, 420, 509, 606, 772; xv, 21; xvi, 28; xvii, 746; in Maine, xviii, 472; in Oregon, xviii, 598; in U. S., xviii, 739.  
 Indian states, Chinese suzerainty over, xii, 383.  
 Indian Territory, territorial government in, iii, 28; occupation of, iv, 43; opening to settlers recommended, v, 417; attempts of ranchmen to appropriate lands in, x, 762.  
 Indian trappers, of British Columbia, xviii, 110.  
 India-rubber manufacture, v, 90; cultivation of, xii, 140.  
 Indigo, artificial production of, vi, 428; vii, 95.  
 Indigo-blue, derivation of, iv, 135.  
 Indigotin, determination of, x, 156.  
 Indo-China, xiv, 344, xvi, 314; xvii, 294; xviii, 332.  
 Industrial Conference, xv, 786.  
 Industrial Education Association, xii, 235. See under Education.  
 Industrial Legion, xvii, 356.  
 Industrial Union, International, xii, 619.

- Industries, British and American, ii, 111; new appliances for the chemical, v, 88; statistics of United States, vii, 500; manufacturing, xiv, 313. See *Finances and Financial Review*.
- Infallibility, i, 703; ii, 676.
- Infanticide, in India, i, 400.
- Inflexible, the, vii, 246, 568.
- Influenza, epidemics of, xiv, 437.
- Ingalls, F. T., obit., xvii, 552.
- Ingalls, Rufus, obit., xviii, 557.
- Ingalls, Senator, charge against, v, 419.
- Ingersoll, Elihu P., obit., xii, 592.
- Ingleby, C. M., obit., xi, 718.
- Inglis, David, obit., ii, 582.
- Inglis, J. A., obit., iii, 640.
- Inglis, John, obit., xvi, 674.
- Ingraham, D. N., obit., xvi, 631.
- Inini river, xiv, 361.
- Inkerman, monument at, illustration, i, 710.
- Inlaid work, ix, 244.
- Inlaying, xi, 443.
- Inness, George, exhibition of works of, x, 361; xi, 346.
- Insane Criminals, act concerning, i, 597.
- Insanity as a Defense for Crime, evidence and opinions in various trials, vi, 429; vi, 381.
- Insanity, plant-producing, viii, 538.
- Inscriptions, ancient, vii, 256; ix, 18; xii, 17, 25; x, 37; xi, 24, 34.
- Insects, earliest fossil, ix, 637.
- Insectivorous Plants, iii, 444.
- Insolvency, amendment to Connecticut law, v, 195.
- Insurance, Commissioners of, in Connecticut, ii, 225; Delaware act on, iv, 307; Mississippi laws, iv, 636; Missouri laws, iv, 642; assessment companies, vi, 727; general statistics for United States, vii, 424; "graveyard" companies, vii, 835; decision, xiii, 607; of workmen, xiii, 371.
- Insurance Legislation, in New York, xi, 444; in Connecticut, 445; in New York, xii, 552.
- Insurrections. See *Wars*, etc.
- Internal Revenue and Tariff in Congress, viii, 193; xv, 228.
- International American Conference, xiv, 440.
- International Arbitration, viii, 469.
- International Congress, xiii, 87; xiv, 432.
- International Exhibition, xv, 593.
- International Law, obligation of, vii, 618; source of authority of, 618; views of various writers, 618-622; beginning of the science, 622; Institute of, xiii, 759; xvii, 722.
- International Monetary Conference. See *Binetallic Standard*.
- Interoceanic Canal, iv, 503; map showing routes tributary to, iv, 506. See also *Panama Canal*.
- Inter-Parliamentary Conference, xvii, 723.
- Interstate Commerce Act, x, 206; xi, 264; xii, 173, 390; commercial law, xiv, 224.
- Inuits of Alaska, the, v, 301.
- Inundation in Honan, xiii, 157.
- Inventions, xi, 738; xii, 650. See *Patents*.
- Investments, English, in U. S., xiv, 443.
- Invincibles, the, ix, 377.
- Iodine, from sea-weed, i, 97; commercially produced, v, 89.
- Iodoform, ix, 747.
- Iodol, xi, 290.
- Iowa, statistics, State government, elections, etc., in each volume; view in, i, 414; Gov. Kirkwood, 412; law making women eligible to school offices, 413; decision of the court, 415; industrial exhibition, 415; storms, 415; vii, 433; Keokuk Canal, ii, 398; Gov. Gear, 400; socialists, 401; bill to restore capital punishment passed, iii, 446; on defendants as witnesses, 446; immigration, 446; jury trials, 446; constitutional amendment, 447; tax-exemption for tree-planting, iv, 513; tramps, 516; proposed prohibition amendment, v, 396; viii, 445; x, 490; xii, 393; board of health and immigrant commission, 396; prison reform, vi, 437; driven wells, viii, 446; new Capitol, ix, 412; decision in distillery case, xii, 393; population, xv, 445; judicial decisions, xviii, 409.
- Iowa City, xiv, 130.
- Irazu, volcano, ascent of, x, 398.
- Ireland, and the Irish Question, v, 399; home-rule, i, 360; obstruction, ii, 366; iii, 407; murder of the Earl of Leitrim, 407; Fenian prisoners released, 407; agitation, iv, 457; in Parliament, v, 330, 333, 338, 343; vi, 358, 359, 363; help from United States, vi, 358; land-league trials, 367; Archbishops McCabe and Croke, 367; manifesto of Parnell and others, 369; obstruction, vii, 204; coercion bills, vii, 204; cases of Dillon and others, 205; debates on, vii, 364; cloture, 364; crimes bill, vii, 366; assassination of Cavendish and Burke, vii, 366; viii, 415; arrears bill, vii, 367; "Irish World," the, vii, 368; land-scheme, vii, 368; Ladies' Land League, *ibid.*; arrest of High-Sheriff of Dublin, vii, 369; Hartington imprisoned, viii, 413; memorial from bishops, 417; brief of Leo XIII, 693; Maamtrasna murder-trials, ix, 376; attack on the Irish executive, 376; Archbishop Walsh, x, 455; land-commission, xii, 336; the round table, 336; the plan of campaign, 336-338; O'Brien sentenced, 339; crimes act, 340; political crimes in, viii, 414; condition of, viii, 416; dynamiters convicted, 416; brief of Leo XIII on, viii, 693; xviii, 358. See *Great Britain*.
- Ireland, directory of the friends of, ix, 626.
- Irenæus letters, the, x, 704.
- Iridescent stoneware, xii, 504.
- Irish Land Bill, vi, 363; purchase, x, 453.
- Irish Land Commission, xii, 336.
- Irish members of Parliament, obstruction by, ii, 365.
- Irish National party, viii, 412.
- Iron, new process, i, 522; direct, vii, 528; protection of surfaces, ii, 93; iv, 134; commerce in, iv, 173; vii, 533; dephosphorization of, v, 208; vii, 530; viii, 520; absorption of nitrogen, vi, 99; statistics, 1882, vii, 115; silvered, x, 578; viscosity of, xii, 479; new method for removing rust from, 486; casting upon lace, 486; Regia process, ix, 471; xii, 479; malleable, 480; xviii, 479; in Canada, xviii, 266; in Michigan, xviii, 494; in Minnesota, xviii, 496. For alloys, processes, etc., see under *Metallurgy* in the several volumes.
- Iron and Steel, ii, 401; microscopical analysis, vii, 532; tax on, viii, 213; industry in 1886, xi, 446; xiv, 538; xv, 525; xvi, 506; xvii, 439.
- Iron Hall, the, xvii, 353.
- Iron Manufacturers' Convention, vii, 455. See *Metallurgy*.
- Ironton, Ohio, xviii, 161.
- Iroquois, studies of the. See *Morgan, L. H., and Smith, E. A.*
- Irredenta, the, xiv, 469.
- Irrigation, in Western States and Territories, iii, 72, 111; iv, 151; viii, 78; ix, 104; x, 633; xi, 576, 609; xii, 532; in Australia, xii, 311; xiii, 38, 291, 601; xiv, 451; xv, 90; xvi, 28, 363; decision concerning, xiv, 102; xvii, 772; in Arizona, xviii 20; in Idaho, 395; in New Mexico, 518.
- Irvine, Col., x, 125, 127.
- Irving, A., xii, 103.
- Irving, J. B., obit., ii, 582.
- Irving, L. T. H., obit., xvii, 553.
- Irving, Pierre M., obit., i, 619.
- Irving, Roland D., x, 404; sketch, xiii, 639.
- Irving, Theodore, obit., v, 593.
- Irwin, William, obit., xi, 635.
- Isaacs, Samuel M., obit., iii, 640.
- Isabella, ex-queen of Spain; her return, i, 731.
- Isabella Marie, Princess, of Portugal, obit., i, 636.
- Isabey, Eugène, obit., xi, 718.
- Ischia, earthquake in, viii, 285, 454.
- Ishak Khan, in Afghanistan, xiii, 6.
- Isidor, Archbishop, obit., xvii, 595.
- Islam, the future of, vi, 440; sects of, *ibid.*
- Islands, Pacific, claims on, viii, 31; explorations in, xi, 381, 382.
- Ismail Pasha, i, 2; sketch, ii, 405; iii, 263; abdication, iv, 332; vii, 232; financial operations of, vii, 234; ix, 296; xi, 311.
- Ismailia, on the Suez Canal, illustration, ii, 270.
- Isomerism, ix, 809.
- Istomin, Admiral C. I., obit., i, 636.
- Israel, lost tribes of. See *Afghanistan*, ii, 4.
- Italia Irredenta, or Irredentist party, v, 408, 409; vi, 50; vii, 54, 437; crime of Overdank, vii, 438; viii, 452.
- Italian annexations, xiv, 2.
- Italians, conspiracy against, xv, 2; massacred, xvi, 833.
- Italians in Africa, xi, 1, 455; xii, 2.
- Italy, statistics, government, legislative proceedings, etc., in every



volume; map of Rome, ii, 408; views in, i, 418, 419, 421, 422; ii, 409-411; resignation of the Minghetti and formation of the Depretis ministry, i, 417; the new cabinet and its programme, 418; purchase of railroads, 418, 419; establishment of free ports, 419; election victory of the progressive party, 420; the king's address on the opening of Parliament, i, 420; committee on abolition of the death-penalty, 421; its abolition, ii, 410; attitude on the Eastern question, i, 420, 421; Garibaldi, 421; measures toward the church, 422; foreigners exempt from taxation, 422; church congress at Bologna, 422; conviction and sentence of the forger of the king's name, Montegazza, 422; capture of Sajera, the Sicilian brigand, 422; capture of Foster Rose by brigands, 423; death of the Duke de Galliera, 423; penalties on priests attacking the government, ii, 408; the Eastern question, 409; clerical abuse hill rejected, 410; change of policy in France, 410; change of ministry, 411; discovery of coins, 411; anniversary celebrations, 411; death of Victor Emmanuel and accession of Humbert, iii, 456; the king's speech, 456; proposed reforms, 456; Cairoli ministry, 456; railways, 457; attempt to assassinate the king, 458; speech of Minghetti on the closing of Barsanti clubs, 458; agitation on the action of the Berlin congress, 458; demonstration at the residence of the Austrian consul in Venice, 458; question of repeal of the grist-tax, iv, 524, 525; civil marriage act, 526; foreign relations, state railroads, 526; measures against Republicans, 526; expressions of Garibaldi, 527; excitement over Baron Haymerle's pamphlet, "Italicæ Res," 527; eruption of Mount Etna, 527; "Italia Irredenta," or Irredentist agitation, v, 408, 410; viii, 452; dissolution of parliament and ministry sustained in elections, v, 409; Tunis question, 409; vi, 449; resignation of Garibaldi, 410; decline of the merchant navy, 410; Mentana monument unveiled, 410; foreign policy, conditions of, vi, 447, 448; electoral reform, taxation, 449; Marsilles riot, 450; anti-clerical ferment, and disturbances at the burial of Pius IX, 450; the papal guarantees, 451; royal meeting at Vienna, 451; the newspaper press, its growth, 451; earthquake at Casamicciola, 451; extradition of a bandit, 452; the people and the church, vii, 434; confiscated church property, 434; relations with other powers, 437; African schemes, 438; commercial treaties, 438; death of Garibaldi, 438; anniversary of Sicilian vespers, 438; the Austrian envoy attacked, 438; inundations, 438; resumption of specie payments,

viii, 451; cabinet crisis, 453; recclamation of the Campagna, 454; interpretation of the guarantee law, 454; the Ischian earthquake, 454; geodetic conference, 454; the Red Sea Expedition, ix, 413; x, 504; the German steamers, ix, 414; silk-manufacture, 415; cholera, 415; cyclone, 416; Turin exhibition, 416; commercial failures, 416; occupation of Massowah, in Africa, x, 505; xii, 397; the madonna of Corano, 506; sanitary conference, 506; equalization of land-tax, xi, 453; parliamentary conflict, 453; dissolution, 454; conflict between church and state, 455; quarrel with Colombia, 455; colonies, 455; xii, 396; Massowah disaster causes a ministerial crisis, 397; the Crispi ministry, 398; the Pope claims the sovereignty of Rome, 399; commercial treaty with Austria and new triple alliance, 399; difficulty with the United States, xvii, 362; bank scandals, xviii, 413.

Itata, the, xvi, 183.

Ithaca incorporated, xiii, 608; xv, 130.

Itzel, Adam, Jr., obit., xviii, 557.

Iuka, battle of, x, 424.

Ivens, R., explorations by, iv, 405; v, 293; x, 394.

Ives, J. C., x, 401.

Iverson, Henry, obit., ix, 608.

Ivory, Artificial, iii, 458; monopoly of, in Soudan, x, 316.

Ivory-nuts, xi, 305; xiii, 287.

Iwakura, T., obit., viii, 600.

Iwasaki Yataro, obit., x, 662.

Izard, J. A. S., obit., iv, 693.

Iztacchuatl, ascent of, xiii, 550.

Jahlochkoff, inventions by, i, 520; ii, 497; iii, 273, 307.

Jack, Alexander B., obit., xi, 685.

Jack, R. L., x, 576.

Jackson, Mich., xv, 131.

Jackson, Miss., capture of, x, 425.

Jackson, A. R., obit., xvii, 553.

Jackson, Bishop, x, 20.

Jackson, C. T., sketch, v, 410; x, 402.

Jackson, Helen, obit., x, 650.

Jackson, I. W., obit., ii, 582.

Jackson, R. H., obit., xvii, 553.

Jackson, Tenn., xviii, 161.

Jackson, Thomas, obit., xi, 718.

Jackson, Thomas P., obit., i, 619.

Jackson, Timothy L., obit., vi, 684.

Jackson Monument Funds, i, 802; xviii, 464.

Jacksonville, Fla., xiii, 165.

Jacksonville, Ill., xv, 131.

Jacob, B., v, 714.

Jacobini, Cardinal, obit., xii, 630.

Jacobs, J. A. M., obit., v, 600.

Jacoby, J., obit., ii, 603.

Jacquel, P., invention by, vi, 250.

Jacques, D. H., obit., ii, 582.

Jade, xviii, 646.

Jaguary, i, 78.

Jahn, Dr., x, 138.

Jalapa, Mexico, view of, iii, 554.

Jamaica, viii, 820; ix, 801; xiii, 839; xiv, 403; xvi, 863; xvii, 792; political excitement in, 802; sugar-trade of, 802; x, 781; xii, 801.

Jamba, the god, x, 396.

James City dispute, xviii, 534.

James, Daniel, obit., i, 619.

James, Sir H., obit., ii, 604.

James, Henry, sketch, vii, 438.

James, Mr., xii, 310.

Jameson, J. A., obit., xv, 651.

Jameson, Major, xiii, 296.

Jameson oven, the, x, 580.

Jameson, Senar E., obit., xi, 685.

Jamestown, N. Y., xv, 132.

James-Watt dock at Greenock, the, x, 332.

Jamieson, Prof., of Glasgow, ix, 477.

Jamin, Jules Celestin, inventions by, vi, 258; obit., xi, 718.

Jaminet, observations, vi, 753.

Jamshidi tribe, the, x, 7, 8.

James, Bishop E. S., sketch, i, 423.

Janet, Henri A., x, 363.

Janin, theory of, vi, 240.

Janja, Peru, battle of, x, 687.

Jan Mayen, Austrian Expedition to, vii, 335.

Jannay, experiments by, viii, 111.

Janney, A. M., obit., ii, 582.

Jannsen, M., ix, 54; xi, 54.

Janson, Paul, ix, 78.

Janssen, J., obit., xvi, 675.

Japan, statistics, government, etc., in every volume; views in, i, 425, 427, 429; ii, 413, 414; ix, 418, 419; exchange of Saghalien for the Kurile Islands, i, 423; embassy to Spain and Portugal, 425; settlement with and embassy to Corea, 425, 426; insurrection incited by nobles, 428; the Mikado's journey in northern provinces, 428; Buddhist temple in Mondseki restored, 428; Sunday made a holiday, 428; commercial disturbance, 429; Protestant missions, 429, 430; the Russian church, 430; reactionary insurrection, ii, 413, 414; government success, 414: national exhibition, 414; effects of the revolution, iii, 461; political assassination, 462; singular disturbance in Yokohama, 462; discontent of the Samurai, 462; exhibits at Paris, 463; native editions of the Bible, 463; silk culture and exportation, iv, 529; viii, 457; annexation of Loochoo Islands, iv, 529, 530; defiance of quarantine regulations, by the British minister, 530; education, v, 412; vii, 441; x, 508; xi, 459; industrial enterprises, v, 413; settlements in Fusan, Corea, Gensan, 413; discussion of Korean treaty, 413; social and political changes, vi, 453; the Daimios and Samurais, 453; Shintoism, 453; Tokio University, 453; telegraphy system, 454; marbles, 456; volcanoes and earthquakes, vii, 440; geology, climate, flora, 441; Fukusawa, 441; dissatisfaction with English commercial treaty, 441, 442; case of O'Neil, 442; treaty with Corea, viii, 455; Prussian administration, 456; merchant marine, 456; cabinet woods, 456; stagnation in trade, ix, 417; riots, 417; dissolution of Liberal party, 417;

- fighting in Corea, 418; perfect religious toleration, 419; death of the last Tycoon, 419; improvements in the condition of the people, x, 507, 508; art industries, 509; treaty with China, 510; three thousand laborers go to Hawaii, 510; money-order convention with United States, 511; purchase of iron-clads, 511; reception of United States minister, 511; cholera, 511; xi, 458; extradition treaty with United States, xi, 456; fashion and industries, 457; representative government, 457; literature and religion, 459; the navy and commercial marine, 458; xii, 402; toast of new rice, xi, 459; foreign trade, xi, 457; morals, education, and religion, xvi, 393; salt-making in, xviii, 417; organized charity, 417.
- Japanese, social and political changes of, vi, 452; tools used by, ix, 418, 419; bath, illustration, i, 425; bronzes, illustration, 427.
- Jar, found at L'Argar, illustration, xii, 23.
- Jardine, David, obit., xvii, 553.
- Jardine, Edward, obit., xviii, 557.
- Jarves, James J., sketch, xiii, 640.
- Jarvis, T. J., sketch, iv, 650; v, 586.
- Jasper, invention by, vi, 258.
- Jaumont, Gen., x, 31.
- Jauner-Kuffler, frauds, x, 72.
- Jaureguiberry, Admiral, iv, 386; obit., xii, 630.
- Jaures, Constant, sketch, xiv, 663.
- Java, eruption in, viii, 286; insurrection in, xi, 608; xiii, 589.
- Jay, John C., obit., xvi, 631.
- Jeannette, the, voyage of, iv, 417; v, 288; vi, 322; vii, 331; map showing the route, 332.
- Jeannette Island, vii, 331.
- Jebu, xvii, 328.
- Jeffcoats, skate invented by, ix, 735.
- Jeffers, W. N., obit., viii, 590.
- Jefferson City, xv, 132.
- Jeffreys, John G., obit., x, 662.
- Jeffries, Dr. John, obit., i, 619.
- Jeffries, Richard, obit., xii, 630.
- Jejeebhoy, Jamsetjee, obit., ii, 604.
- Jelenck, Prof., xi, 49.
- Jeliaboff, trial of, vi, 796, 797.
- Jelinek, Karl, obit., i, 636.
- Jellett, John H., sketch, xiii, 664.
- Jemshidis, the, x, 4.
- Jenckes, Thomas A., ix, 690.
- Jenkin, Fleeming, invention, viii, 679; ix, 729; obit., x, 662.
- Jenkins, George, invention, ii, 497.
- Jenkins, Thornton A., obit. and port., xviii, 557.
- Jenkins, Timothy, obit., i, 619.
- Jenks, F. H., sketch, xiii, 640.
- Jennings, L. J., obit., xviii, 581.
- Jennings, Russell, sketch, xiii, 640.
- Jenson, explorations by, iii, 358; ix, 348.
- Jequirity, ix, 271.
- Jerome, David H., v, 523.
- Jerome, Lawrence R., obit., xiii, 640.
- Jerome, Leonard W., obit., xvi, 632.
- Jerrold, W. B., obit., ix, 617.
- Jersey City, N. J., xi, 171.
- Jerusalem, Aqueduct at, xi, 26; walls of, xiii, 31.
- Jervis, Sir W. F. D., ix, 60.
- Jessel, Sir George, obit., 600.
- Jessen, investigations, viii, 636.
- Jesuits in Peru, xi, 750; cause of their expulsion from Germany, x, 712; incorporation of, in Quebec, xii, 708; estates settlement, xiii, 710; xiv, 275, 723.
- Jeter, J. B., sketch, v, 413.
- Jetty System, the, v, 533.
- Jevons, W. S., sketch, vii, 442.
- Jewell, James S., obit., xii, 592.
- Jewell, Marshall, sketch, i, 204; viii, 457.
- Jewett, Col. Ezekell, obit., ii, 582.
- Jew-fish, xii, 756.
- Jewitt, Llewellyn, obit., 718.
- Jews, i, 430; iv, 530; xii, 403; xiii, 455; xiv, 475; xv, 464; xvi, 393; xvii, 367; xviii, 418; restrictions on, in Servia, ii, 691; in Roumania, iii, 740; vii, 729; ix, 703; x, 714; persecution in Morocco, v, 546, 644; anti-Semitic movement in Prussia, v, 640; agitation against, in Hungary, vi, 403; viii, 48; numbers of, and persecutions in Germany and Russia, vi, 456; vii, 735; ix, 711; in Austria, viii, 47; relief measures, vii, 35; increase of, in Austria, vii, 51; ritual murder case, viii, 47; outrages against, viii, 709; disabilities, ix, 703; x, 511; convention of reformed, x, 511; relief for persecuted, 606; colonies of, in United States, xi, 459; Rabbinical Seminary at Rome, 460; immigration to Spain, 460; literature, educational institutions of, xii, 403, 404; exhibition in London, 404; edict against, xvi, 783; colony, xviii, 16.
- Joachim III, Patriarch of Constantinople, ix, 278.
- Joachimsen, Priscilla J., obit., xviii, 558.
- Joachimson, P. J., obit., xv, 651.
- Jobbins, E. H., ix, 477, 478.
- Johann, Archduke, obit., xv, 681.
- Johannis, Negus of Abyssinia, sketch, xiv, 663.
- Johannsen, E., island discovered by, iii, 354.
- John, Franz, sketch, i, 434.
- John, King of Abyssinia, i, 2, 3; ii, 2; iv, 2; v, 236; ix, 276; xi, 1; xii, 1.
- John Gilpin, the, catamaran, illustration, ix, 117.
- Johnite, x, 343.
- Johns, John, obit., i, 619.
- Johns Hopkins University, administration of, vii, 508.
- Johnson, A. L., obit., xv, 651.
- Johnson, Abram, sketch, vi, 461.
- Johnson, A. S., obit., iii, 640.
- Johnson, Alice, observations by, viii, 437.
- Johnson, Alvin J., obit., ix, 608.
- Johnson, Andrew, Southern policy of, x, 431, 432.
- Johnson, B., obit., v, 593.
- Johnson, Bradish, obit., xvii, 553.
- Johnsou, E. A., obit., xvi, 632.
- Johnson, H. V., sketch, v, 414.
- Johnson, J. C., nominated, xiii, 764.
- Johnson, Oliver, sketch, xiv, 636.
- Johnson, Reverdy, sketch, i, 434.
- Johnson, Rowland, obit., xi, 685.
- Johnson, S. W., investigations by, v, 92; ix, 122.
- Johnson, W., obit., xv, 651.
- Johnston, Alexander, sketch, xiv, 636.
- Johnston, A. Keith, African journey of, iii, 362; iv, 402; obit., iv, 700.
- Johnston, Albert Sidney, x, 424.
- Johuston, Amos R., obit., iv, 693.
- Johnston, Archibald, obit., xii, 592.
- Johnston, H. H., ix, 347, 544.
- Johnston, John Taylor, obit., xviii, 558.
- Johnston, Joseph E., x, 426, 427, 431; sketch and port., xvi, 395.
- Johnston, J. W., sketch, xiv, 636.
- Johnstown flood, xiv, 476.
- Johonnot, James, sketch, xiii, 640.
- Joint Rules of Senate and House, i, 153-158.
- Joint-stock companies, new Connecticut law on, v, 195; law in Germany, ix, 358.
- Joliet, xv, 132.
- Jolly, P., experiments by, vii, 35; obit., x, 663.
- Jonas, Carl, x, 72.
- Jones, Charles C. obit., xviii, 558.
- Jones, E. Lloyd, observations by, v, 36; xii, 673.
- Jones, Evan, nominated, xiii, 766.
- Jones, Francis C., prize awarded to, x, 367.
- Jones, George, obit., xvi, 632.
- Jones, John B., sketch, vi, 461.
- Jones, John Glancy, obit., iii, 640.
- Jones, Joseph, discoveries by, iii, 320.
- Jones, Joseph S., obit., ii, 582.
- Jones, Justin, sketch, xiv, 636.
- Jones, Owen, obit., iii, 640.
- Jones, Rogers, sketch, xiv, 636.
- Jones, Samuel, obit., xvii, 553.
- Jones, Thomas R., obit., v, 600.
- Jones, W. A., x, 402.
- Jones, W. M., nominated, xiii, 609.
- Jones, William R., ix, 472.
- Jonker Afrikander, x, 138.
- Joplin, Miss., xvi, 157.
- Jordan, Rowland, ix, 474.
- Jordan valley, proposal to flood, viii, 307.
- Joseph, Chief, ii, 40.
- Josephine, ex-Queen of Sweden, obit., i, 636.
- Josh Billings. See Shaw, H. W.
- Josstown, Africa, x, 121, 122.
- Joubert, Piet, President of the Boer republic, ix, 114.
- Joule, James P., sketch, xiv, 663.
- Journalism, improvements in, xi, 633.
- Journalists, expulsion of foreign, from France, xviii, 321.
- Journey of Death, the, x, 633.
- Jovanovich, Gen., vii, 57, 58; obit., x, 662, 730.
- Jovellary, Soler, obit., xvii, 595.
- Jowett, Benjamin, obit., xviii, 581.
- Joy, Charles A., obit., xvi, 632.
- Joy, E. L., obit., xvii, 553.
- Joyce case, the, ix, 377.
- Jubilee Exhibition, Berlin, xi, 345.
- Juborn, Mount, ix, 544.
- Judd, D. W., sketch, xiii, 641.
- Judd, J. W., x, 47; xi, 45.
- Judd, Orange, obit., xvii, 554.



- Judd, Orin B., obit., xvii, 554.  
 Judges, investiture, tenure, and removal of; salaries of, xvi, 214. See Criminal Jurisdiction, vii, 179.  
 Judicature, reform of, French, viii, 370.  
 Judiciary celebration, xv, 630.  
 Judson, Ed. Z. C., obit., xi, 685.  
 Juongling, F., sketch, xiv, 627.  
 Juggernaut, temple of, illustration, ii, 392.  
 Jühlke, Dr., x, 796; xi, 370.  
 Julian Year, the, vii, 372.  
 Julien, Alexis A., ix, 45.  
 Julio, E. D. B., sketch, iv, 532.  
 Jumel trial, the, ix, 627.  
 Jumpers, the, ix, 554.  
 Junction City, Kan., xiv, 151.  
 Juneau, Solomon, statue of, xii, 280.  
 Jung, M. E., observations by, viii, 526.  
 Jung, Sir Salar, in England, i, 366; obit., viii, 600; xii, 382.  
 Jungfleisch, experiments by, viii, 113; x, 157.  
 Junior Carlton Club-House, explosion at, ix, 377.  
 Junker, Dr., explorations by, ii, 330; iii, 362; x, 394; xi, 371; xii, 251.  
 Junker, W., obit., xvii, 595.  
 Jupiter, xiii, 54; xv, 40; satellites of, ii, 44; xviii, 42; physical condition of, *ibid.*; spots on, iv, 51; v, 34; vi, 38; viii, 22; x, 50; period and light, v, 34; its resemblance to the sun, ix, 50; red spot upon, x, 50; fifth satellite of, xvii, 38.  
 Jupiter Olympius, temple, xii, 21.  
 Jurgan, Jeanne, obit., iv, 774.  
 Juries, grand, iii, 447; Indiana law, vi, 425; negroes in, see Negroes.  
 Jurisdiction, disputed, of Greer County, Texas, xii, 760.  
 Jurisprudence, recent works on. See Literature, in every volume.  
 Juste, Theodore, sketch, xiii, 664.  
 Justice boxes, in Persia, i, 660.  
 Jute, vi, 462; cultivation of, iii, 682; v, 64; vii, 485; ix, 787; machine for, vii, 485; illustration, vi, 462.  
 Jute and Jute-Butts, viii, 458.  
 Juvenile reformatories, xvii, 761.  
 Kabru, Mount, ix, 544.  
 Kabyles, insurrection of, iv, 15; campaign against, xiv, 574.  
 Kachyens, operations against, xiv, 431.  
 Kadesh, ix, 28.  
 Kadesh-Barnea, ix, 27.  
 Kahnweiler, invention by, vi, 266.  
 Kailas, Mount, iv, 400.  
 Kairene, ix, 271.  
 Kaiserfeld, M., vii, 49.  
 Kakar Tribes, the, ix, 7.  
 Kalakaua, reign of, xii, 351; death of, xv, 415; obit. and port., xvi, 675.  
 Kalamazoo, xv, 133.  
 Kalisch, Isidor, obit., xi, 685.  
 Kalish, Marcus M., obit., x, 663.  
 Kalloch, I. S., impeachment of, v, 77; obit., xii, 592.  
 Kalnoky, Count, sketch, vi, 463; x, 111.  
 Kanakas, labor of the, x, 62, 63; xvii, 45.  
 Kangaroo, the great, illustration, ii, 52.  
 Kanawha River, improvement of, iii, 827.  
 Kane, Sir R., obit., xv, 681.  
 Kanitz, F., ix, 23.  
 Kankakee, Ill., xviii, 162.  
 Kankakee Survey, the, vii, 421.  
 Kansas, State officers, statistics, legislative proceedings, etc., in each volume; view in, i, 416; Osage land decision, i, 437; lead discovered, ii, 416; election of Senator Plumb, 416; libel case decision, 417; invasion of Cheyennes, iii, 463; suit of bondholders, 466; iv, 537; patrol guard on the Indian frontier, v, 416, 417; removal of colored people from Mississippi to, 417; droughts, cattle disease, and chinch-bugs, v, 417; vi, 463, 467; x, 514; Oklahoma raid, v, 417; telegraph war, 417, 418; drive-well dispute, 418; validity of registry-law, 418; title to seat in legislature, iii, 466; re-election of Senator Ingalls, iv, 532; v, 419; bribery charges, 532; question of obligation of telegraph companies to produce messages in court, 533, 534; prohibition amendment ratified, v, 420; coal-production, vi, 468; sketch of G. W. Glick, vii, 447; Senator Plumb re-elected, viii, 460; sorghum sugar industry, ix, 422; growth and development, x, 514; population, xv, 467; xvi, 401; mortgage debts, xvi, 403; prohibition in, xviii, 423.  
 Kansas City, Kan., xvii, 112.  
 Kansas City, Mo., xi, 171.  
 Kaolin, discovery of, viii, 641, 642.  
 Kaposi, Prof., ix, 272.  
 Kappes, Alfred, xi, 346; xii, 278.  
 Karategrin, state of, x, 2.  
 Karavaleff ministry, the, in Bulgaria, ix, 102; x, 102, 111.  
 Karanee expedition, xiv, 431.  
 Kargé, Joseph, obit., xvii, 554.  
 Karnak, musical rocks at, x, 608.  
 Karond, massacres in, vii, 415.  
 Karr, A., obit., xv, 681.  
 Karrack, island of, x, 1.  
 Kars, surrender of, ii, 743.  
 Kart-eff, Gen. A. P., i, 323.  
 Kashgaria, war of, with China, i, 109, 776; ii, 417; iii, 96; iv, 145. See also Turkistan.  
 Kassai, Prince. See John, King of Abyssinia.  
 Kassai River, the, x, 392.  
 Kassala, ix, 296; xv, 459; siege of, x, 315.  
 Kassatkine, N., v, 348.  
 Kasyapa, the Buddha, x, 39.  
 Katanga, xvii, 169; expeditions, xviii, 189.  
 Katkoff, Michel Nikipphorovich, obit., xii, 630.  
 Kauffmann, C., obit., vii, 646.  
 Kauffmann, Ulrich, ix, 543, 545.  
 Kaulbars, Gen., xi, 106, 110.  
 Kava-kava, xi, 291.  
 Kavanagh, Julia, obit., ii, 604.  
 Kavvadias, Prof., observations by, ii, 32.  
 Kay, Sidney de, obit., xv, 651.  
 Kaye, Sir John W., sketch, i, 438.  
 Kayser, Dr., experiments by, x, 583; xi, 389.  
 Kearney, Dennis, trial of, v, 77.  
 Kearney, Neb., xviii, 163.  
 Keatinge, Richard, obit., i, 636.  
 Kedes (Kadesh), ix, 28.  
 Kedzie, experiments by, vi, 352.  
 Keegan, W., obit., xv, 651.  
 Keely, George W., obit., iii, 640.  
 Keeley, John Worrall, xii, 407.  
 Keeley motor, the, xii, 407; illustrations, 408, 409.  
 Keene, xv, 133.  
 Keene, C. S., obit., xvi, 675.  
 Keet, Rev. H., use of title by, i, 25.  
 Keewatin, xviii, 473.  
 Keifer, experiments by, viii, 121.  
 Keil, Ernst, obit., iii, 656.  
 Keil, Prof. M., ix, 475.  
 Keiley, A. M., appointment of, to Italy and Austria, x, 70.  
 Keim, Theodor, obit., iii, 656.  
 Kekulé, theory of, vi, 92.  
 Keller, Father, xii, 339.  
 Keller, Ferdinand, obit., vi, 694.  
 Keller, George, xi, 347.  
 Kelley, B. F., obit., xvi, 632.  
 Kelley, W. D., obit., xv, 652.  
 Kelline, xi, 291.  
 Kellogg, Albert, obit., xii, 593.  
 Kellogg, Ensign H., obit., vii, 639.  
 Kellogg, Stephen W., i, 204.  
 Kellogg, William P., impeachment, i, 482; protest, v, 479.  
 Kelly, John, obit., xi, 686.  
 Kelly, William, sketch, xiii, 641.  
 Kelso, James J., sketch, xiii, 641.  
 Kelso, Thomas, obit., iii, 640.  
 Kelton, John Cunningham, obit., xviii, 558.  
 Kelung, capture of, ix, 139-143.  
 Kemble, Frances A., obit. and port., xviii, 581.  
 Kemble, W. H., v, 621.  
 Kemen, Mary J., obit., xii, 593.  
 Kemp, invention by, vi, 265.  
 Kemper, I. de B., obit., i, 636.  
 Kendall, Henry, obit., xvii, 554.  
 Kendrick, H. L., obit., xvi, 632.  
 Kendrick, James Ryland, obit. and port., xiv, 637.  
 Kenia, Mount, ix, 347.  
 Kenly, John R., obit., xvi, 633.  
 Kenna, John E., obit., xviii, 558.  
 Kennaway, Sir John, xiii, 13.  
 Kennedy, Anthony, obit., xvii, 554.  
 Kennedy, B. H., sketch, xiv, 664.  
 Kennedy, Hugh, sketch, xiii, 641.  
 Kennedy, James, obit., xi, 719.  
 Kennedy, J. C. G., obit., xii, 593.  
 Kennedy, R. W., invention by, xi, 537.  
 Kennion, John W., obit., xi, 686.  
 Kent, Edward, obit., ii, 583.  
 Kentucky, statistics, State officers, etc., in each volume; views in, i, 439, 440; ii, 420, 421; viii, 463; Louisville registration act vetoed, i, 438; resources, geological surveys, ii, 420; iii, 470; navigation of the Kentucky River, ii, 421; strike and riots, 421; iii, 473; election of senator, ii, 422; six per cent. rate of interest adopted, iii, 463; bill for re-establishment of the whipping-post, 469; monument to J. C. Breckinridge, 470; act on concealed weapons, 470; crop of

- ehufas, 472; extradition case in court, 473, 475; the State prison, iv, 539; contract system, vi, 470; Buford trial, iv, 541; agricultural college founded, v, 422; exclusion of negro jurors, 424; negro voters, vii, 451; prosecution of lottery advertisers, v, 425; regulators, 425; lynching attempt, vii, 453; southern exposition, viii, 464; coal-mining, x, 516; school, xi, 467; tobacco and liquors, 467; atrocities in Rowan County, xii, 410, 411; population, xv, 472; xvi, 404; constitutional convention, xv, 474; xvi, 405; the new constitution, xvii, 373; local option, xviii, 424.
- Keogh, W., obit., iii, 656.
- Keokuk, xv, 133.
- Kep, or Lang Kep, battle at, x, 24, 25; attacked by Chinese, 27.
- Kephir, fermented milk, ix, 121.
- Keren, xi, 1; xii, 1.
- Keridee, Count de, obit., iii, 656.
- Kerkapoly, K., obit., xvii, 596.
- Kerki, Russian occupation, xii, 7.
- Kermadec islands, annexation of, by Great Britain, xi, 60.
- Kernan, Francis, obit., xvii, 554.
- Kerner, Dr., death of, xii, 217.
- Kerosene, improved test for dangerous, viii, 464; illustrations, 464, 465.
- Kerr, Col. James K., obit., i, 619.
- Kerr, Dr., experiments by, vi, 239.
- Kerr, John B., obit., iii, 640.
- Kerr, Michael C., sketch, i, 441.
- Kesem, x, 36.
- Keteltas, Eugene, obit., i, 619.
- Ketteler, W. E., obit., ii, 604.
- Key, Sir A. C., sketch, xiii, 664.
- Key, David M., sketch, ii, 422.
- Key West, illustration, i, 300.
- Keyhole, luminous, xvi, 706.
- Keyser, Ephraim, xi, 347.
- Keyt, Dr. A. T., ix, 656.
- Khafra, pyramid of, ix, 21.
- Khalifah-ben-Said, obit., xv, 681.
- Khame, Chief, x, 88.
- Khan of Khelat, deposed, xviii, 404.
- Khartoum, x, 309, 318; fall of, ix, 299-304; x, 319; xi, 310; views of, viii, 299; ix, 289.
- Khedive, private debt of the, i, 245; decree on commission of inquiry, iii, 264.
- Kheimis neropolis, the, ix, 22.
- Kheta, the, or Hittites, ix, 28.
- Khiva, Russian protectorate over, x, 2.
- Khoja-Saleh, x, 4.
- Khokan, annexed to Russia, i, 44, 775, 776; discoveries, ii, 325.
- Khorassan, people of, in favor of annexation to Russia, x, 10.
- Khotan River, exploration of the, xii, 309.
- Khuenaten, palace of, xvii, 13.
- Kidd, J., invention by, iii, 88.
- Kidder, D. P., obit., xvi, 633.
- Kiddle, H., obit., xvi, 633.
- Kiel, naval station at, ii, 279.
- Kiel, Friedrieb, obit., x, 663.
- Kierulf, impeachment of, ix, 751.
- Kiessling, K. I., observations by, x, 581, 582; xi, 54.
- Kiev, disturbance at the University of, ix, 711.
- Kilauea, Mount, eruption, ix, 389.
- Kilimandjaro, Mount, ix, 347, 544; x, 796; station on, xviii, 337.
- Kilpatrick, Gen. See Peru, Chili, etc., vi, 738.
- Ki-Lua, battle at, x, 26.
- Kimball, C. P., obit., xvi, 633.
- Kimball, E. E., nominated, xiii, 566.
- Kimball, Eugene, obit., vii, 639.
- Kimball, R. B., obit. and port., xvii, 555.
- Kimberley, Earl of, sketch, v, 426.
- Kimberley, South Africa, x, 135.
- Kina-balü Lake, xii, 312.
- Kindergartens, xii, 232; free, and workingman's school, New York, 234.
- Kindler, Albert, sketch, i, 441.
- King, Clarence, explorations by, v, 297; x, 402, 403.
- King, E. A., inventions by, iii, 275; iv, 339.
- King, Francis T., obit., xvi, 633.
- King, John H., sketch, xiii, 642.
- King, John P., sketch, xiii, 642.
- King, Louisa W., obit., iii, 641.
- King, R. H., obit., xv, 652.
- King, Richard, i, 323; obit., 636.
- King, Rufus, obit., i, 619.
- King Karl Land, x, 398.
- King of Prussia, power of, manifest, vii, 354.
- King William's Land, New Guinea, x, 59.
- Kingdom, J. M., obit., i, 620.
- Kinglake, A. W., obit., xvi, 675.
- Kingsbury, Benj., obit., xi, 687.
- King's Daughters, xiii, 464.
- Kingsland, A. C., obit., iii, 641.
- Kingsley, Henry, sketch, i, 441.
- Kingsley, W. C., viii, 311; obit., x, 650.
- King's Sons, the, xiii, 464.
- Kingston, Canada, view of, i, 234; xv, 134.
- Kingston, N. Y., xii, 123.
- Kinipple, W. R., x, 332.
- Kinloch, Eliza, obit., xii, 593.
- Kinloch, R. A., obit., xvi, 633.
- Kinney, Elizabeth C., obit., xiv, 637.
- Kinney, explorations by, iv, 400.
- Kinney, W. B., obit., v, 593.
- Kinny, Mary C., obit., ii, 583.
- Kinsella, T., obit., ix, 608.
- Kip, William I., obit. and port., xviii, 558.
- Kirby, Timothy, obit., i, 620.
- Kirchhoff, Gustav Robert, spectroscopic observations, vi, 242; sketch and portrait, xii, 412.
- Kirkbride, T. S., obit., viii, 590.
- Kirkham, R. W., obit., xviii, 559.
- Kirkland, scheme of, ix, 632.
- Kirkwood, S. J., sketch, i, 412.
- Kirsner, L., obit., i, 636.
- Kirwan, D. J., obit., i, 620.
- Kissam, Agnes A., sketch, xiii, 642.
- Kitchen, W. K., obit., i, 620.
- Kitchener, Lieut., survey of Palestine, ii, 325; x, 319, 320; xiii, 293.
- Kitson, H., xi, 346.
- Kjeldahl, x, 156.
- Klapka, Georg, obit., xvii, 596.
- Klebs, experiments, iv, 414.
- Klein, Dr., investigations by, iv, 442.
- Klein, Julius L., sketch, i, 441.
- Klein, Tobias, xii, 326.
- Kleiner, Dr., invention by, iii, 482.
- Kleist-Retzow, obit., xvii, 596.
- Klenze, H. von, obit., xvii, 596.
- Klinkerfuss, W., obit., ix, 617.
- Klossofsky, M., xi, 545.
- Klutshak, H. W., obit., xv, 652.
- Knapp, M. M., obit., xvii, 555.
- Knaus, Ludwig, x, 367; xi, 347.
- Knebel, Baron, obit., xv, 681.
- Knight, C. F., obit., xvi, 634.
- Knight, E. C., obit., xvii, 555.
- Knights of Industry, xvii, 374.
- Knights of Labor, x, 516; xii, 524.
- Knights of Pythias, x, 518.
- Knit cloths, viii, 466; illustrations, 466, 467.
- Knoodt, F. P., sketch, xiv, 664.
- Knorr, Admiral, x, 122.
- Knorr, Ludwig, x, 298.
- Knorre, discoveries, i, 46; v, 34.
- Knowles, Kaye, collection of, xii, 278.
- Knox, J. J., obit., xvii, 555.
- Knox, John J., obit., i, 620.
- Knox, Samuel R., obit., viii, 591.
- Knoxville, Tenn., xii, 123.
- Knutsen, K., x, 398; xi, 373.
- Koeh, Dr. Robert, experiments by, iii, 388; iv, 442; vii, 799; ix, 93, 143, 495, 497, 663; x, 800; sketch and port., xv, 474.
- Koeh, H. A., obit., i, 636.
- Köchly, Hermann, sketch, i, 442.
- Kohat Pass, opened, ii, 5.
- Kohl, Friedrich, obit., i, 636.
- Kohl, Johann G., obit., iii, 656.
- Kohn, invention by, iii, 275.
- Kokomo, Ind., xvi, 157.
- Kola-nut, caffeine in the, viii, 118.
- Kolbe, A. W. H., ix, 424.
- Kollmann, experiments by, x, 691.
- Komaroff, Gen., x, 5, 6, 8, 9.
- Kompert, Leopold, obit., xi, 719.
- König, F., experiments by, vi, 670.
- König, G. A., discovery by, vi, 98.
- König, Herbert, obit., i, 637.
- Königgratz, battle of, x, 382.
- Königsmark-Plaue, obit., i, 637.
- Konn, invention by, iv, 339.
- Konovaloff, M., xii, 103.
- Köppen, Prof., xii, 489.
- Koppnagel, C., obit., xvi, 634.
- Korb-Weidenheim, Baron, iv, 60.
- Kossel, experiments by, viii, 119; xii, 671.
- Kostenko, Col., explorations in Khokan, ii, 325.
- Kostomarov, N. L., obit., x, 663.
- Kovalensky, D. E., i, 323.
- Krabbe, N. C., obit., i, 637.
- Kraieffski, A., sketch, xiv, 664.
- Krakatoa, eruption of, viii, 526; possible connection with the red light, 526; ix, 53; x, 48, 401, 582.
- Krapotekkin, assassination, iv, 683.
- Krapotkine, Prince, imprisonment of, vii, 326; trial, viii, 368.
- Krasezewski, Joseph Ignatius, trial of, for high treason, ix, 358; obit., xii, 632.
- Kraton, capture of, x, 625.
- Kratsehner, experiments, vi, 750.
- Krauel, Dr., x, 420.
- Krause, G. A., explorations by, viii, 386; xii, 305.
- Krekel, Arnold, sketch, xiii, 642.
- Kreling, August, sketch, i, 442.
- Kremlin, the, illustration, ii, 687.
- Kremsier, Dr., x, 582.



- Kremsier, Moravia, meeting of two emperors at, x, 69; reason for absence of the third, x, 70.
- Kriegk, G. L., obit., iii, 656.
- Kries, experiments, vi, 748.
- Krikor, Odian E., obit., xii, 632.
- Kronecker, H., ix, 654.
- Krüdener, Baron, sketch, ii, 422; obit., xvi, 675.
- Krueger, Dr., ix, 52.
- Krueger, S. J. P., ix, 113.
- Krug, Anna C., obit., ii, 604.
- Krüger, K. W., obit., i, 637.
- Krupp, Alfred, obit., xii, 632.
- Krüss, G., xii, 101, 111.
- Kruzof Island, volcano on, xi, 381.
- Krzyzanowski, W., obit., xii, 594.
- Kuang-Tri, massacre at, x, 31.
- Kubuchu, Prof., ix, 45.
- Kuechler, ix, 358.
- Kuenen, A., obit., xvi, 675.
- Kufelt, battle at, x, 319.
- Kuh, Emil, obit., i, 637.
- Kühne, observations, viii, 635.
- Kühner, R., obit., iii, 657.
- Kukenam, Mount, illustration, ix, 539.
- Ku-klux, law, vii, 457; cases, viii, 474.
- Kula, engagement at, x, 728.
- Kuligan, Fort, taken, x, 117.
- Kulja, restoration of, to China, iv, 144; v, 101; vi, 107, 800; revolt in, x, 173.
- Kumunduros, i, 367, 368.
- Kuntz, Dr., xii, 674.
- Kuo-Tung-tao, recalled, iv, 145.
- Kurds, insurrection of, v, 623; vi, 731; rescue of Obeidullah by, vii, 805.
- Kurile Islands, exchanged for Saghalien, i, 427.
- Kuro-Siwo, the. See Gulf Stream, Pacific.
- Kurupatkin, Capt., explorations of, ii, 326.
- Kusaic Island, ruins in, x, 139, 140.
- Kushan, destroyed by earthquake, picture of, xviii, 614.
- Kutsehker, Cardinal, obit., vi, 695.
- Kwangsi, revolt in, iii, 101; iv, 143.
- Kwangsu, Emperor, ix, 136. See under China.
- Labastida, P. A., obit., xvi, 676.
- Labels, x, 683.
- Labiche, E. M., sketch, xiii, 664.
- Labor, Chinese. See Chinese.
- Labor, Church, xviii, 426.
- Labor Day, xiii, 509.
- Laborers' Lien Act, iv, 845.
- Labor Legislation, in France, viii, 369; in Germany, vii, 354, 356; in England, 411; in the United States, xi, 260; xii, 85, 444; in Belgium, xii, 66; limit of working-day, ix, 59, 68.
- Labor, movements and agitations of, iii, 73; v, 77; vii, 453; x, 72; xi, 83, 173, 260, 359, 389, 405; xv, 54, 396, 786; foreign contract, x, 231; for the unemployed, x, 147; black, in the Southern Pacific, x, 62; wages of, in Japan, 507; Convention, xiv, 791; xvi, 89; of Colorado, xviii, 178; disturbances, xvi, 389; Exchange, the, xviii, 324; interests in Missouri, xviii, 499; riot in Illinois, xviii, 398.
- Labor Statistics, Missouri, Bureau of, iv, 641; New York, viii, 570; Michigan, vii, 540; national, ix, 192; xiii, 509.
- Labor Strikes, i, 649; ii, 421, 423, 530, 636, 750; iii, 407; iv, 714, 717; v, 119; vi, 516; vii, 506, 614; x, 672; xi, 432, 455; xii, 66, 376, 742 *et seq.* See also Labor, vii, 453.
- Labor troubles, xiii, 747; xiv, 419, 471; xvii, 514; in Spain, xvi, 805; in Austria-Hungary, xviii, 65; in New York, xviii, 522; in Oregon, xviii, 598; in Pennsylvania, 610; in Tennessee, 710.
- Labor, United States Department of, established, xiii, 234.
- Laboring-men, idle, in San Francisco, iii, 69.
- Labor-traffic in the Pacific, x, 62.
- Laboulaye, E. R. L., obit., viii, 600.
- Labrador, xiii, 464; map of, 465; Grand Falls of, xvi, 570.
- Labre, Alexander, obit., xvii, 556.
- Labuan, xiv, 399; xv, 404; xvi, 343; xvii, 326.
- Labye, L., invention by, vi, 258.
- Lace, iron-casting upon, xii, 486.
- Lachat, Eugène, obit., xi, 719.
- Lachner, F., obit., xv, 682.
- Lacoste, M., obit., x, 663.
- La Cour, telephone, i, 740.
- Lacressonnière, obit., xviii, 582.
- Lacrosse, x, 518; illustrations, 519.
- La Crosse, Wis., xvi, 158.
- Lacroix, P., obit., ix, 617.
- Lactate of quinine, x, 299.
- Lactic acid, xii, 678.
- Ladd, William S., obit., xviii, 559.
- Ladoue, T. C. F. de, obit., ii, 604.
- Ladreyt, Cassimer, obit., ii, 583.
- Ladronc Islands, xii, 313.
- Laessoë, F., observations, x, 38.
- La Farge, John, ix, 242, 243.
- La Fayette, Ind., xvi, 158.
- Lafayette, Osear de, obit., vi, 695.
- La Flesche, Frank, ix, 45.
- Lafin, Luther, obit., i, 620.
- Lager, M., x, 5.
- La Hitte, Vicomte, obit., iii, 657.
- La Horie, Gen., x, 480.
- Lahrush, Capt. F., obit., ii, 583.
- Laiug, Maj., murder of, vi, 328.
- Laidley, T. T. S., obit., xi, 687.
- Laighton, Albert, obit., xii, 594.
- Laird, James, sketch, xiv, 638.
- Lake Chad, the race for, xviii, 331.
- Lalla Rookh, Queen of Tasmania, i, 53.
- Lalo, Édouard, obit., xvii, 596.
- Lajoux, H., x, 156.
- Lake Crater, xi, 381.
- Lake Suai, outlet, xii, 304.
- Lama, the, x, 396.
- Lamar, L. Q. C., sketch, x, 757; portrait, 764; obit. and port., xviii, 559.
- Lamarmora, Marchese di, obit., iii, 657.
- Lanater, De, John, obit., ii, 583.
- Lamb, Martha J., obit., xviii, 559.
- Lamberton, R. A., obit., xviii, 559.
- Lambert, Sir J., obit., xvii, 596.
- Lambeth Conference, xiii, 16.
- Lambkin, J. R., sketch, xiv, 638.
- Lambros, M., x, 37.
- Lamington, Baron, obit., xv, 682.
- Lamont, Daniel S., sketch and port., xviii, 735.
- Lamont, George D., obit., i, 620.
- Lamon, Ward H., obit., xviii, 559.
- La Motte, C. E., obit., xii, 594.
- Lamperti, F., obit., xvii, 596.
- Lamport, W. H., obit., xvi, 634.
- Lamps, electric, ix, 304, 305. See also Electric Lighting.
- Lamson, W. S., invention by, xii, 94.
- Lamu question, the, xiv, 832.
- Lamy, John B., sketch, xiii, 642.
- Lancaster, Pa., growth of, xi, 171.
- Lanciani, Rodolfo, xi, 35.
- Land Bill, in California, v, 71.
- Landerer, F. X., obit., x, 663.
- Land Grant Forfeitures, x, 244; xi, 263; xv, 236.
- Land Grant Railroads, xii, 202.
- Land-Grants, in Oregon, v, 612; old, in New Mexico, viii, 565; to railroads, ix, 214; xii, 202; revoked, ix, 214; xii, 777. See Land Grant Railroads.
- Land, Harvey B., sketch, xiii, 642.
- Landholt, xii, 103.
- Landing stage, a novel, xiv, 292.
- Land Laws, in Denmark, vi, 211; in India, vi, 422; viii, 441; in New South Wales, viii, 35; in Roumania, viii, 698; in Russia, viii, 706; in Great Britain, x, 521; in Ireland, 525; in Scotland, 527; in Australia, ix, 58, 59; in Bengal, x, 8, 495, 527; in Bosnia, ix, 64, 65; in United States, x, 523; xi, 577. See Land Tenure.
- Land League, arrest of leaders, vi, 367, 368; clergy on, vi, 367; viii, 413; Ladies', vii, 368.
- Landlord and Tenant, English law of, x, 526.
- Land-owner ministry, the, in Denmark, x, 290.
- Land-purchase act, xiii, 398.
- Land Reform, in Great Britain, x, 456-458.
- Landsborough, W., obit., xi, 719.
- Landseer, C., obit., iv, 700.
- Landseer, Sir Edwin, xi, 345.
- Landseer, Thomas, obit., v, 600.
- Lands, laws on mineral, vi, 76; public, i, 84; iv, 830; v, 25, 271; vi, 300, 597; xiii, 466; xvii, 746; in Mexico, x, 590; alleged title frauds in West Virginia, vii, 835; unlawful occupancy of public, x, 241; allotment of, to Indians, xii, 205; measures to restrict the ownership of, in the territories, to American citizens, xii, 206.
- Land system, Torrens, x, 674.
- Land-tax, equalization of the, in Italy, xi, 453.
- Land Tenure in Europe, vi, 472.
- Land-transfer, system of, x, 674.
- Landwehr, the, in Austria, ix, 63.
- Lane, Charles, xiii, 11.
- Lane, Edward W., sketch, i, 442.
- Lane, Henry S., obit., vi, 684.
- Lane, James C., sketch, xiii, 642.
- Lane, Joseph, sketch, vi, 475.
- Lane-Fox Electric Lamp, vii, 275.
- Lanfrey, P., obit., ii, 604.
- Lang, Heinrich, obit., i, 637.
- Lang, Louis, obit., xviii, 560.
- Langdon, C. C., sketch, xiv, 638.
- Langenbeck, B., obit., xii, 632.
- Langer, Karl, obit., xii, 632.
- Laniewicz, Marian, obit., xii, 632.

- Lang Kep, battle at, x, 24, 25.  
 Langley, J. N., experiments by, vi, 749, 750.  
 Langley, J. W., x, 149; xi, 44.  
 Langley, S. P., observations by, iii, 35; vii, 33; viii, 526; ix, 48, 539; xi, 49, 55, 57; xii, 31, 45; address, xiii, 44.  
 Langlois, M., ix, 344.  
 Langson, battle at, x, 25, 26.  
 Language question, the, xiii, 86.  
 Language-war in Austria-Hungary, xii, 52.  
 Lanier, Sidney, obit., vi, 685.  
 Lanigan, George T., obit., xi, 687.  
 Lanoline, xi, 291; xii, 105, 670.  
 Lansdowne, Marquis of, viii, 83; sketch, with portrait, viii, 468; xii, 338.  
 Lansing, Mich., capitol at, illustration, i, 552; xvii, 112.  
 Lantaine, xi, 291.  
 Lanza, Gen., xiii, 3.  
 Lanza, Signor, obit., vii, 646.  
 La Perouse, ix, 275.  
 Lapham, Elbridge G., sketch, vi, 648; obit., xv, 652.  
 Lapps, the, proposal to remove, to Greenland, ix, 348.  
 Larabit, M. D., obit., i, 637.  
 Laramie City, xiv, 152.  
 Larcom, Lucy, obit. and port., xviii, 560.  
 L'Argar, discoveries at, xii, 23.  
 Largeau, explorations, i, 332.  
 Larivière, P. C., sketch, i, 442.  
 Larkin, observations, vii, 34.  
 La Rochette, E. de, obit., i, 637.  
 Larremore, R. L., obit., xviii, 560.  
 Larsen, experiments, viii, 113.  
 L'Artigue's single railway, illustration, xi, 320.  
 Larynx, intubation of, ix, 748; x, 743.  
 Lasagni, Cardinal, death of, x, 713.  
 Lasgird, ix, 5; illustration, 5.  
 Lasker, Eduard, retirement of, viii, 395; sketch, viii, 468; incident in Congress, ix, 225, 359.  
 Lassalle, Charles, sketch, xiii, 642.  
 Lassen, Christian, sketch, i, 442.  
 Lasteyrie, Marquis, obit., viii, 601.  
 Las Vegas, xv, 134.  
 Latch, gravity, ill., xii, 653.  
 Latham, R. G., sketch, xiii, 664.  
 Latitude, variation of, xvii, 39.  
 Latrobe, B. H., obit., iii, 641.  
 Latrobe, J. H. B., obit. and port., xvi, 634.  
 Latour, Isidore, obit., ii, 604.  
 Laube, H., obit., ix, 617.  
 Lauderdale, Earl of, obit., iii, 657.  
 Launay, Count, obit., xvii, 596.  
 Launches, electric, xviii, 282.  
 Laurens, J. P., x, 359; xi, 343.  
 Laurent, Francis, obit., xii, 633.  
 Laurentie, P. S., sketch, i, 443.  
 Laurie, A. P., xii, 110.  
 Lauzanne, de Vaux-Roussel, Chevalier de, obit., ii, 604.  
 Laval, University of, difficulty concerning, viii, 695.  
 Laveleye, E. L., obit., xvi, 676.  
 Laveau, Marie, obit., vi, 685.  
 Laviegie, C. A., obit., xvii, 596.  
 Lavesium, new metal, ii, 502.  
 Law and Order League of the United States, xii, 413.  
 Law, Constitutional, International Arbitration, viii, 469; Weil and La Abra cases, *ibid.*; Legal Tender Acts, 471; power of Congress in elections, 474; recent progress, vi, 475; vii, 457; ix, 425; constitutional, xi, 467.  
 Law, practice of, by women. See Women.  
 Law, recent books on. See Literature, in every volume.  
 Lawes, explorations of, i, 330.  
 Lawrance, Albert Gallatin, obit., xii, 594.  
 Lawrence, Effingham, obit., iii, 641.  
 Lawrence, George A., obit., i, 637.  
 Lawrence, J. L. M., Baron, sketch, iv, 543.  
 Lawrence, Kansas, xi, 172.  
 Lawrence, Mass., xi, 172.  
 Lawrence, W. B., sketch, vi, 483.  
 Laws against Foreigners in Russia, xii, 724.  
 Laws, Charles A., obit., xii, 595.  
 Laws of War, and Red Cross Societies, vii, 715.  
 Laws, State, codification of New York, iii, 615; revision of Vermont, v, 708; compilation of Michigan, vi, 575.  
 Lawson, D. T., experiments of, vi, 259; theory of boiler explosions, vii, 296.  
 Lawson, James A., obit., xii, 633.  
 Lawson, Sir Wilfrid, ix, 372.  
 Lawsuits against United States, vii, 460.  
 Lay, Henry C., obit., x, 650.  
 Lay, Mr., invention by, ii, 719.  
 Lay, O. I., obit., xv, 652.  
 Layard, Sir A. H., x, 140, 143.  
 Laycock, Thomas, obit., i, 637.  
 Laymen's League, xi, 21.  
 Layton, Caleb R., obit., xii, 595.  
 Lazarus, Emma, sketch and portrait, xii, 414.  
 Lazarus, J. H., obit., xvi, 634.  
 Lazeano, Admiral F., x, 138.  
 Lea, Albert, obit., xvi, 635.  
 Lea, Carey, x, 153; xii, 105.  
 Lea, Isaac, obit., xi, 637.  
 Lead and silver process, viii, 531.  
 Lead-poisoning, iv, 4; viii, 116; x, 161.  
 Lead, use of, in prehistoric times, ix, 23; market, 481; xviii, 484. See also under Metallurgy.  
 Leadville, growth of, iv, 161; mines, vi, 118; xv, 135.  
 League of the emperors, xi, 391.  
 League of Patriots, xiv, 335.  
 Leake, Martin, ix, 25.  
 Leaming, J. R., obit., xvii, 556.  
 Leander McCormick Observatory, vii, 41.  
 Learned, A. F., obit., xvi, 635.  
 Leather-board, iv, 662.  
 Leavenworth, xi, 172.  
 Leavenworth, Eliza Warner, obit., xii, 595.  
 Lebancn, Pa., xviii, 163.  
 Lebel, N., obit., xvi, 676.  
 Leblanc, Louis, obit., xi, 719.  
 Leblond, Désiré Médéric, obit., xi, 720.  
 Lebeuf, Edmond, sketch and portrait, xiii, 472.  
 Le Bon, experiments, viii, 116.  
 Lebranc's process for carbonate of soda, xii, 108.  
 Lebreton, E. C., obit., i, 637.  
 Lecense, J. N. A., obit., iii, 657.  
 Lechesne, xii, 483.  
 Leclercq, M., sketch, xiv, 664.  
 Leconte, S. D., sketch, xiii, 642.  
 Le Conte, John, obit. and port., xvi, 635.  
 Le Conte, John L., obit., viii, 591.  
 Le Conte, Joseph, port., xvii, 20.  
 Lecoq, discovery by, vi, 93.  
 Ledebur, observations of, xi, 534.  
 Lederer, Joachim, obit., i, 637.  
 Ledochowski, Cardinal, ix, 356.  
 Ledochowski, M., sketch, xiv, 664.  
 Lee, Alfred, obit., xii, 595.  
 Lee, Charles T., x, 156.  
 Lee, Henry, sketch, xiii, 664.  
 Lee, John D., obit., ii, 583.  
 Lee, Mary W., obit., xviii, 560.  
 Lee, Robert E., estate of, vii, 460; monument to, i, 802; x, 427, 429; indictment, 431.  
 Lee, S. S., obit., xvii, 556.  
 Lee, W. H. F., obit., xvi, 635.  
 Lec, William R., obit., xvi, 636.  
 Leeds, experiments, viii, 111.  
 Leeward Islands, the, xii, 801; xiv, 403; xvi, 863; xvii, 793.  
 Le Faure, A., obit., vi, 695.  
 Lefebvre, Jules, x, 358; xii, 276.  
 Lefebvre-Duméfry, obit., ii, 605.  
 Leferts, Col. Marshall, obit., i, 620.  
 Le Flô, A. E. C., obit., xii, 633.  
 Lefranc, experiments by, viii, 118.  
 Lefranc, P. J., obit., ii, 605.  
 Lefroy, E. C., obit., xvi, 676.  
 Legagneur, H. M. F., obit., i, 638.  
 Legal Tender, United States notes as, iv, 367; legality of their issue, iv, 835; during the rebellion, vii, 399; acts on, viii, 471.  
 Le Gendre, Léonce, obit., xviii, 582.  
 Leger, M., ix, 473.  
 Leggett, Francis A., obit., i, 620.  
 Legislative Assemblies, how created, and Disciplinary Power of. See Disciplinary Power, etc., vii, 194.  
 Legislative authority, contempt of, x, 261.  
 Legislative, Executive, and Judicial Appropriation Bill, iv, 234-249; in extra session, 274-288; President's veto, iv, 289; amended bill, 291, 292; judicial appropriation bill, 292; vetoed, 294.  
 Lehmann Pasha, obit., ii, 605.  
 Leidy, J., obit. and port., xvi, 636.  
 Leigh, Egerton, obit., 638.  
 Leighton, Sir Frederick, x, 309; xi, 344, 345; xii, 276.  
 Leinster, Gerald Fitzgerald, Duke of, obit., xviii, 582.  
 Leitrim, Earl of, murder of, iii, 406.  
 Leland, Henry, obit., ii, 583.  
 Leland, George S., obit., vii, 639.  
 Leleiohoku, W. P., obit., ii, 605.  
 Lemaire, Philippe, obit., v, 600.  
 Lemaire, Pierre Auguste, obit., xii, 633.  
 Lemaître, Frédéric, sketch, i, 443.  
 Lemnos, inscriptions in, xi, 34.  
 Lemoine, J., obit., xvii, 597.  
 Lemon-juice as an antipyretic, ix, 271.  
 Lena Delta, the, ix, 348.  
 Lendenfeld, Dr. von, ix, 545.  
 Lennox, Lord, obit., ii, 605.  
 Lenormant, F., obit., viii, 601.  
 Lenox, James, sketch, v, 426.  
 Lenox, Samuel, obit., i, 620.  
 Lenox Library, v, 427.  
 Lenström, experiments, viii, 29.  
 Lent, Lewis B., obit., xii, 596.



- Lenz, Oscar, explorations by, v, 293; vi, 327; viii, 386; classification of tribes by, ii, 334; ix, 395.  
 Leo XIII, elected, iii, 732; encyclicals, iii, 733; vii, 723; correspondence with German Emperor, vii, 725; arbitration by, x, 144. See also Pecci and Papacy; sketch and port., xiv, 488.  
 Leo, Heinrich, obit., iii, 657.  
 Leonard, J. E., obit., iii, 641.  
 Leonard, W. H., obit., xvi, 637.  
 Leopold I, statue of, v, 55.  
 Leopold II, African expeditions due to, v, 295; ix, 80, 166, 167; x, 192, 392; silver wedding of, iii, 56; iv, 76.  
 Leopold, Prince, marriage of, vii, 369; obit., ix, 618.  
 Lepage, Bastien, obit., ix, 618; sale of works of, x, 364.  
 Lepanto, the, illustration, vii, 574.  
 Lepère, E. C. P., sketch, iv, 386.  
 Lepers, mission to, xiv, 250.  
 Le Plongeon, Augustus, explorations of, v, 298; xi, 24.  
 Leprosy, in Colombia, xii, 140.  
 Lepsius, K. R., obit., ix, 618; his theory of the pyramids, ix, 21; x, 35, 36.  
 Lequesne, E. L., obit., xii, 633.  
 Leray, F. X., obit., xii, 596.  
 Lerdo, President, defeated, ii, 512.  
 Lerothodi, chief, x, 85.  
 Le Roy, W. E., sketch, xiii, 643.  
 Le Royer, M., x, 376.  
 Leschjanin, Gen., x, 728, 729.  
 Lesley, J. P., ix, 44; x, 45.  
 Leslie, Frank, sketch, v, 427.  
 Leslie, T. E. C., obit., vii, 646.  
 Lesquercux, Leo, sketch and port., xiv, 493.  
 Lessar, M., x, 5, 7, 16, 17.  
 Lesseps, F. de, vi, 714; viii, 307, 308; x, 178.  
 Lessing, Karl F., obit., v, 600.  
 Lester, C. E., obit., xv, 652.  
 Lester, George, sketch, xiv, 638.  
 Letcher, John, obit., ix, 603.  
 Letellier de St. Just, L., sketch, vi, 485.  
 Letellier-Valazé, sketch, i, 444.  
 Lethcby, H., obit., i, 638.  
 Letrange, zinc process of, vii, 532.  
 Letsie, chief, vi, 85; x, 84.  
 Letters, opening of, decision concerning, iii, 809; immediate delivery, x, 251; postage on, 252.  
 Leuchtenberg, Duke, obit., ii, 605.  
 Levee Convention, a, viii, 495.  
 Levces, xiii, 500; xiv, 512; xv, 509.  
 Levee System, the, v, 532.  
 Leven, Earl of, obit., i, 638.  
 Leverich, C. P., obit., i, 620.  
 Leveridge, John, obit., xi, 688.  
 Leverrier, U. J. J., obit., ii, 605; xi, 539.  
 Le Vert, Octavia W., obit., ii, 583.  
 Levi, Leone, sketch, xiii, 664.  
 Levy, Calmann, obit., xvi, 676.  
 Levy, Joseph M., sketch, xiii, 664.  
 Lewal, General, x, 25.  
 Lewald, Fanny, sketch, xiv, 664.  
 Lewes, George H., obit., iii, 658.  
 Lewin, invention by, x, 345.  
 Lewis, Dio, obit., xi, 688.  
 Lewis, Estela A., sketch, v, 429.  
 Lewis, E. P. C., obit., xvii, 556.  
 Lewis, Edward, sketch, xiv, 638.  
 Lewis, Harriet, obit., iii, 641.  
 Lewis, H. C., researches of, vi, 19; sketch, xiii, 643.  
 Lewis, Ida, v, 455.  
 Lewis, John F., sketch, i, 444.  
 Lewis, J. L., will case, xiii, 375.  
 Lewis, Tayler, sketch, ii, 432.  
 Lewis, Winslow, lantern, v, 444.  
 Lewiston, Idaho, xvi, 158.  
 Lewiston, Me., xiv, 152.  
 Lewthwaite, J., invention, ix, 471.  
 Lexington, Ky., College of Arts at, illustration, ii, 421; xiv, 152.  
 Lexington, Mass., monument at, illustration, ii, 487.  
 Lexington, Va., Washington and Lee University at, illustration, ii, 761.  
 Ley, W. Clement, xi, 543.  
 L'Hôte, x, 154.  
 Libbey, Prof., xi, 381.  
 Liberation Society, xi, 17; xiv, 12; xv, 12; xvi, 10; xvii, 8; xviii, 12.  
 Liberia, i, 9; v, 429; viii, 387; schools in, xii, 416; slavery and polygamy in, 417; colonization, 417; inducements to emigration, 417; coffee-culture in, 417; xvii, 374.  
 Liberty, statue of, xi, 323, 649.  
 Librarians, convention of, xi, 475.  
 Libraries, the vice-regal, in Egypt, i, 247; the Corvina, ii, 379; discovered at Sippara, vii, 262; free circulating, xi, 649; township, in Wis., xviii, 758.  
 Library Economy and Statistics, xi, 474; catalogues, classification, selection of books, buildings, 476; legislation concerning, in the various States and territories, xii, 418; incorporation of company, 418; progress of, xviii, 426.  
 Libyan Desert, journey in the, xii, 304.  
 License question, the, viii, 663. See also Temperance.  
 Licensing system, Gothenburg, xv, 790.  
 Liehens, iii, 476; ix, 94.  
 Lichtenfels, T. P., obit., ii, 605.  
 Lick, James, sketch, i, 444.  
 Lick Observatory, v, 36; viii, 28; ix, 46; x, 54; xi, 57; xii, 39; xiii, 47, 48, 51.  
 Licóna River, discovery of, iv, 401.  
 Liddon, H. P., obit., xv, 682.  
 Lidgiwidgi Tancannini. See Lalla Rookh.  
 Lidy, C. M., experiments by, iv, 136.  
 Liebermann, invention by, viii, 465.  
 Liebig, F., ix, 273, 808; xii, 101.  
 Liebknecht, Herr, imprisonment of, x, 418.  
 Liebreich, Prof., xii, 670.  
 Liebschutz, Morton, x, 154.  
 Liep-Bril, J. J., obit., xi, 720.  
 Life-Saving Service, United States, iii, 749; illustrations, 759-766; i, 592-594.  
 Light, sound produced by, apparatus showing, illustration, vi, 788; xiv, 694; xvi, 729; xviii, 618; comparisons, xviii, 45.  
 Lightfoot, J. B., sketch, xiv, 664.  
 Light-house establishment, the United States, v, 430; illustrations, 438-446.  
 Light-houses, Tillamook, illustration, v, 443; Fowey Rocks, illustration, 439; screw-pile, in Hampton Roads, 438; Paris Island and St. Augustine, illustration, 440; Spectacle Reef, 442; Eddystone; see Eddystone; in Chili, xi, 151; in Cojuntó, Nicaragua, 653.  
 Light-house, steam-tender, illustration, v, 453.  
 Lightning, effects of, on species of trees, i, 250; Arago's classification, xii, 492; lightning-balls, 492; globular, 494; extent of flash, 494; conditions of danger from, 494; statistics of damage from, 494; lightning-rods, xvi, 733.  
 Light-ship, illustration, v, 450.  
 Ligne, Prince de, obit., v, 601.  
 Li-Hung-Chang, x, 29, 174; xviii, 145.  
 Likwa, or Hikwa, Lake, v, 297.  
 Lilienberg, N., x, 580.  
 Lima, earthquake at, ix, 649.  
 Lima, Ohio, xvi, 159.  
 Limairac, J. de, obit., i, 638.  
 Limbang, xv, 404.  
 Limnater de Nieuwenhove, Baron, obit., xvii, 597.  
 Limouzin, Madame, xii, 294.  
 Lincoln, Abraham, statue of, xii, 280; obit., xv, 652.  
 Lincoln, Mary T., obit., vii, 639.  
 Lincoln, Neb., xiii, 166.  
 Lincoln, Robert T., sketch and portrait, vii, 808.  
 Lincoln, Roman relics at, ix, 22.  
 Lincoln, T. B., sketch, xiii, 643.  
 Lind, Bertha, ix, 365.  
 Lind, Jenuy, sketch and portrait, xii, 420.  
 Lindblad, A. F., obit., iii, 658.  
 Linderman, H. R., sketch, iv, 543.  
 Lindsay, David, exploration by, in Australia, xii, 311.  
 Lindsay, J. W. S., obit., ii, 605.  
 Lindsay, Thomas N., obit., ii, 584.  
 Lindstrom, Gustav, ix, 636.  
 Line guide for fishing rods, xvi, 710.  
 Linen, George, sketch, xiii, 643.  
 Linsly, Jared, obit., xii, 596.  
 Lippe, Adolph, sketch, xiii, 643.  
 Lippincott, J. B., obit., xi, 688.  
 Lippitt, H., i, 700; obit., xvi, 637.  
 Lippinan, experiments, viii, 111.  
 Lipsey, A. B., invention by, viii, 381.  
 Liquefaction of Gases, ix, 434.  
 Liquidation law, in Egypt, ix, 287, 291.  
 Liquids, evaporation of, xi, 429; xiv, 692; xvi, 726; xviii, 617.  
 Liquor laws, in Virginia, ii, 758; the Moffett Register, 759; in Ohio, xii, 643.  
 Liquor question. See Temperance and Prohibition.  
 Lisbon, view of, illustration, i, 665.  
 Lisgar, Baron, sketch, i, 444.  
 Lista, Ramon, exploration by, xii, 315.  
 Lister, Dr., ix, 746.  
 Liszt, F., obit. and port., xi, 478.  
 Litchfield, E. B., sketch, xiv, 638.  
 Literary Congress, iii, 314; x, 746.  
 Literary Property, xii, 140.  
 Literature, American, British, and Continental, in every volume.

- Lithium, discoveries of, iv, 419.  
 Lithofracteur, x, 345.  
 Lithotripsy, viii, 752.  
 Litloff, H., obit., xvi, 676.  
 Little, E. T., x, 362.  
 Little, James L., obit., x, 651.  
 Littlefield, Alfred H., vi, 789; obit., xviii, 560.  
 Littlefield, D. M., obit., xvi, 637.  
 Littlejohn, DeW. C., obit., xvii, 556.  
 Little Popo, ix, 365.  
 Little Rock, view of capitol at, ii, 37; xv, 135.  
 Littrow, K. L. von, obit., ii, 605.  
 Liver, operations on, viii, 751; nerves in the, ix, 654.  
 Liversidge, A., investigation by, vi, 97, 98.  
 Livron, C., experiments, vi, 751.  
 Li-Yung-Choi, or Li-Yung-Tsai, revolt led by, iii, 101; iv, 143.  
 Llewellyn Park, N. J., xviii, 169.  
 Lloyd, Clifford, ix, 283, 285, 286; x, 455.  
 Lloyd, David D., sketch, xiv, 638.  
 Lloyd, E., obit., xv, 638.  
 Loan associations, xiii, 245.  
 Loa viaduct, xiv, 292.  
 Lobbying, in Georgia, iv, 421.  
 Local-government act, xiii, 389.  
 Local option. See articles on States of the Union.  
 Loch, Sir H. B., ix, 57.  
 Lock Prisso, x, 121, 122.  
 Locke, David R., sketch, xiii, 643.  
 Locke, F. T., obit., xviii, 560.  
 Locke, J. H., obit., xvii, 556.  
 Locker, A. E., obit., xviii, 582.  
 Lockport, N. Y., xiv, 143.  
 Lockroy, M., xi, 354.  
 Lockwood, Cape, ix, 35.  
 Lockwood, discovery by, ii, 325.  
 Lockwood, F. F., obit., i, 620.  
 Lockwood, S., obit., xviii, 560.  
 Lockyer, J. N., observations by, iii, 35; iv, 133; vi, 243; vii, 33, 37; viii, 526, 528.  
 Locomotive, first, built in America, see Cooper, i, 212; compressed-air, i, 478; illustrations, 478, 479; vi, 512; with duplex driving-wheels, vi, 511; Fontaine, illustration, vi, 511; engineers' licenses, xiii, 9; electric, xviii, 281.  
 Lodge, at North Easton, illustration, xii, 363.  
 Lodge, J. O., ix, 46.  
 Lodyguine, invention by, iii, 275.  
 Loew, discovery by, vi, 99.  
 Loew, Charles E., obit., xi, 688.  
 Loewe, Ludwig, obit., xi, 720.  
 Loewy, Dr., xii, 35, 375.  
 Loftus, Lord, A. W. F. S., iv, 55; ix, 58.  
 Logan, G. W., sketch, xiv, 638.  
 Logan, John Alexander, sketch, v, 477; obit. and steel plate portrait, xi, 504.  
 Logan Stephen J., obit., v, 593.  
 Logansport, xv, 136.  
 Log-rolling, iv, 718.  
 Löhle, Emil, obit., i, 638.  
 Lomakin, Gen., iv, 776.  
 Loménie, L. L. de, obit., iii, 658.  
 London and its environs, map of, ii, 360; illustrations: Trafalgar Square, 361; St. Paul's, 362; Westminster Abbey, 363; the Tower, 364; Buckingham palace, 366; Albert memorial, 367.  
 London, Canada, xv, 136.  
 Long and Rook islands, x, 681.  
 Long, A. L., obit., xvi, 637.  
 Long, Charles C., sketch, iii, 493.  
 Long, Edwin, x, 360; xi, 345; obit., xvi, 676.  
 Long, John D., sketch, v, 501.  
 Longevity, ix, 568.  
 Longfellow, Henry Wadsworth, sketch, vii, 478; portrait, vi, 485.  
 Longfellow, Samuel, obit., xvii, 557.  
 Longman, William, obit., ii, 606.  
 Lonlay, Diek de, obit., xviii, 528.  
 Lonsdale, Earl of, sketch, i, 480; collection of pictures of, xii, 278.  
 Loochoo Islands, claimed by China and Japan, iv, 147, 529; v, 413.  
 Look Tin Sing, case of, ix, 427.  
 Loom, positive-motion, vii, 479.  
 Loonis, Elias, sketch and port., xiv, 638.  
 Looms, carpet, viii, 94.  
 Loon Lake, engagement at, x, 129.  
 Lopez, A., Marquis of Comillas, obit., viii, 601.  
 Lopez, P. M., obit., ii, 584.  
 Lord, Jarvis, obit., xii, 596.  
 Lord, Rev. John C., obit., ii, 584.  
 Lord, Samuel, sketch, xiv, 639.  
 Lore, Charles B., sketch, vii, 189.  
 Lorencez, C. L., Comte de, obit., xvii, 597.  
 Lorillard, Pierre, x, 391.  
 Loring, E. G., sketch, xiii, 644.  
 Loring, G. B., obit., xvi, 637.  
 Loring Pasha, William Wing, i, 3; obit. and portrait, xi, 506.  
 Loris-Melikoff, Gen., sketch, ii, 455; attempt on life, v, 663; letter to, from Nihilists, 664.  
 Lorne, Marquis of, Governor-General of Canada, iii, 12, 246.  
 Lorquet, L. M. P., sketch, i, 480.  
 Lorson, King, ix, 365.  
 Los Angeles, Cal., xi, 172; xii, 123.  
 Lossing, B. J., obit., xvi, 637.  
 Lothrop, Daniel, obit., xvii, 557.  
 Lothrop, Samuel K., obit., xi, 689.  
 Lott, J. A., obit., iii, 641.  
 Lotteries in Kentucky, v, 425; xviii, 425; State and private, in Germany, x, 417; in Mexico, x, 589; in Brazil, xii, 71; xv, 238, 507; in Louisiana, xviii, 464.  
 Lottery amendment, xvi, 444.  
 Lottimer, William, obit., i, 620.  
 Lot-vases, xiii, 26.  
 Lotze, H., obit., vi, 695.  
 Lough, J. G., sketch, i, 481.  
 Loughlin, John, obit., xvi, 638.  
 Loughridge, W., obit., xiv, 639.  
 Louis IV, of Hesse, ii, 352.  
 Louisiade Islands, x, 681.  
 Louisiana, statistics, State officers, legislative proceedings, etc., in each volume; views, i, 483; proposed constitutional amendments, i, 481; removal of Judge Hawkins, 481, 482; charges of misappropriation, 482; question of impeachment of Gov. Kellogg, 482, 483, 484; asserted violence, intimidation, etc., 485, 486; address of Nicholls, 491; of clergymen, 491; rival legislatures, and governors, 493; Dubuclet confirmed, 493, 494; decision of electoral commission ii, 208; the two governments, ii, 455-465; Senator Spofford elected, 465; immigration, 467; case of J. C. Moncreo, 467; constitutional convention, iii, 561; reorganization under the new constitution, v, 478; constitution of 1879, vii, 483; suit of State of New Hampshire, v, 479, 480; vi, 516; of New York, vi, 516; viii, 493; labor riots, and strikes, v, 482; vi, 516; colored university, v, 484; other schools, vii, 481, 482, 484, 485; financial embarrassment of New Orleans, vi, 517; culture of Perique tobacco abandoned, and new products introduced, 517, 518; jetties and railroads, 518; vii, 485, 486; overflows, vii, 480; ix, 453, 455; sugar, jute, rice, viii, 485, 496; canal improvement, ix, 455; State lands, viii, 495; levees, 495; cotton trade; ix, 456; Petite Anse or Salt Island, x, 549; iron discovered, 549; New Orleans committee of one hundred, 549; Tulane University, 549; Sunday law, xi, 509; ten-hour law, xii, 444; sugar-planters' association, 444; population, xv, 505; xvi, 443; State lottery, xv, 507; xvi, 444; xviii, 464; Constitutional commission, xviii, 465.  
 Louis Philippe, xi, 481.  
 Louisville, Ky., growth, xi, 172; illustrations, bridge at, i, 439; City Hall, ii, 420; exposition building, viii, 463.  
 Lourdes, basilica of, i, 705.  
 Loutin, M., invention by, iii, 271.  
 Louvain, reformatory prison at, viii, 497.  
 Louvre, court of the, illustration, xi, 344.  
 Love, J. M., obit., xvi, 638.  
 Lovell, Mansfield, obit., ix, 608.  
 Lovering, Joseph, obit. and port., xvii, 557.  
 Low, Abiel A., obit., xviii, 560.  
 Low, John G., ix, 248.  
 Lowder, observations by, vii, 39.  
 Lowe, Viscount, obit., xvii, 597.  
 Lowe, water-gas process, viii, 274.  
 Lowell, Mass., growth of, xi, 173.  
 Lowell, James Russell, ii, 467; sketch and port., xvi, 446.  
 Lowell, R. T. S., obit., xvi, 638.  
 Lowenstein, S., sketch, xiv, 655.  
 Lower California, Americans in, xii, 503.  
 Lowry, Robert, vi, 600.  
 Loyal Legion, the, xii, 445; badge of, 329.  
 Loyola, Ignatius, anniversary, v, 673.  
 Lozère, xi, 379.  
 Lozier, Clemence Sophia, xiii, 501.  
 Lualaba River, the, ii, 331; iii, 363, 364.  
 Lubbock, Lady E. F., obit., iv, 700.  
 Lübke, W. von, obit., xviii, 582.  
 Lucan, G. O. B., sketch, xiii, 664.  
 Lucas, C., obit., xv, 683.  
 Lucas, Louis A., i, 322.  
 Luce, A. S., obit., xvii, 598.  
 Luchsinger, Prof., ix, 658.  
 Lucius, R., sketch, iv, 740.  
 Ludeking, Charles, xii, 679.  
 Luder, M., invention by, ix, 737.



- Lüderitz, F. A., ix, 362, 363; x, 137; xii, 306.  
 Ludington, fl., xvi, 639.  
 Ludlow, N. M., obit., xi, 689.  
 Ludlow, Capt. William, expedition of, x, 402.  
 Ludwig II, of Bavaria, sketch, xi, 511.  
 Ludwig III, Grand Duke of Hesse, obit., ii, 606.  
 Ludwig, IV, obit., xvii, 598.  
 Ludwig, Dr., experiments by, x, 694.  
 Luh Vinh Phuoc, x, 27.  
 Luis I, sketch, xiv, 665.  
 Luitpold, Prince, xi, 392.  
 Luiz I, King of Portugal, iii, 690.  
 Lukjanon, Dr., experiments by, xii, 674.  
 Lull, Edward P., obit., xii, 597.  
 Lumber-flumes, xv, 285.  
 Lumber, in Alabama, xviii, 7; in Arizona, 21; in British Columbia, 107; in Louisiana, 463; in Minn., 496; in Mo., 499; in Oregon, 597; in Washington, 755.  
 Luminais, Evariste, x, 358.  
 Lumsden, Sir Peter, ix, 6; x, 4, 5, 6, 8, 16.  
 Luna, Juan, xi, 343.  
 Lunaey, the Lyman case, ix, 676.  
 Lunatic asylums, commitments to, in Illinois, iv, 479.  
 Lunge, G., experiments by, vi, 94.  
 Lung-Plague of Cattle, vii, 486.  
 Lungs, operations on the, ix, 748; x, 742.  
 Lunt, George, obit., x, 651.  
 Lupton Bey, discovery by, viii, 386; x, 394; death of, xiii, 293; sketch, 665.  
 Lupton, N. T., obit., xviii, 561.  
 Lushington, Sir S., obit., ii, 606.  
 Luther Quadricentennial, viii, 498; statue in Eisleben, illustration, 501.  
 Luther, Prof., discovery by, ii, 44.  
 Lutherans, statistics, councils, societies, etc., in each volume; pulpit and altar fellowships, discussion of the "Galesburg rule," i, 471; ii, 496; iv, 574; vi, 521; Free Diet, i, 472; iii, 507; marriage with a deceased wife's sister, iii, 506; division on doctrine of predestination, vi, 521; movement for institution of bishops, viii, 505; church standards, ix, 458; order of service, x, 552; xi, 515; union in the south, x, 553; xi, 514; gifts to Philadelphia hospital, xii, 448; Muhlenberg centenary, xii, 450; xiii, 502; xiv, 519; xv, 509; xvi, 465; xvii, 425.  
 Lutz, Baron, obit., xv, 683.  
 Lutz, Dr. von., xi, 392.  
 Luxembourg, xiv, 582; xv, 587.  
 Luxor, temple of, x, 32.  
 Lyall, J., invention by, vii, 479.  
 Lycosura, sculptures at, xvi, 19.  
 Lyle, invention by, iii, 754, 762.  
 Lyman, C. S., obit., xv, 653.  
 Lyman, David B., obit., ix, 608.  
 Lyman, J., obit., xv, 653.  
 Lyman lunaey case, ix, 676.  
 Lyman, Samuel P., obit., i, 620.  
 Lyman, T. B., obit., xviii, 561.  
 Lynch, Patrick, obit., xi, 720.  
 Lynch, Patrick, vi, 735, 739; viii, 64.  
 Lynch, Patrick W., sketch, vii, 491.  
 Lynehburg, growth of, xii, 124.  
 Lyndon, P. F., obit., iii, 641.  
 Lynn, Mass., growth of, xi, 173.  
 Lynne, T. A., obit., xv, 653.  
 Lyons, illustration, iii, 346.  
 Lyons, Iowa, xvii, 114.  
 Lyons, Rev. J. J., obit., ii, 584.  
 Lyons, Richard Bickerton Pennell, Lord, sketch and portrait, xii, 450.  
 Lyre-bird, illustration, ii, 52.  
 Lyttleton, Baron, sketch, i, 498.  
 Lytton, Lord, sketch, i, 406; Viceroy of India, i, 44, 402; attempt on the life of, iv, 494; v, 389; resignation of, v, 384; sketch and port., xvi, 470.  
 Maamtrasna murders, the, ix, 376; x, 451.  
 Mabery, C. F., experiments by, x, 578; xi, 535.  
 MacAdam's Fins, ill., xi, 471.  
 McAllister, Julian, obit., xii, 598.  
 McAllister, R., obit., xvi, 639.  
 McAllister, W. K., sketch, xiii, 644.  
 McAlpine, W. J., obit., xv, 653.  
 Macao, claim on, by China, v, 103; illustration, 103.  
 MacBain, Sir J., obit., xvii, 598.  
 McBryde, Margaretta M., obit., xviii, 561.  
 MacCabe, Cardinal, obit., x, 663.  
 McCall, R. W., obit., xviii, 582.  
 McCance, observations, iii, 37.  
 McCandless, W., obit., vii, 640.  
 McCarroll, James, obit., xvii, 558.  
 McCarter, L., sketch, xiii, 644.  
 McCarthy, Patrick, obit., ii, 584.  
 McClay, W. B., obit., vii, 640.  
 McClellan, George B., sketch, ii, 492, 556; obit. and portrait, x, 553.  
 McClelland, Robert, sketch, v, 503.  
 McCloskey, John, Cardinal, sketch, ii, 493; obit. and steel plate portrait, x, 562.  
 McCloskey, John, obit., v, 594.  
 McCook, George W., obit., ii, 584.  
 McCormick, C. H., obit., ix, 609.  
 McCormick Observatory, ix, 47.  
 McCosh, James, quoted, xiii, 7.  
 McCoskrey, S. A., Bishop, deposed, iii, 704.  
 McCoun, W. T., obit., iii, 641.  
 McCoy and Hatfield feud, the, xiii, 463.  
 McCoy, W. D., obit., xviii, 561.  
 McCrady, Edward, obit., xvii, 558.  
 McCrary, G. W., sketch, ii, 493; obit., xv, 653.  
 McCreery, T. C., obit., xv, 653.  
 McCue, A., sketch, xiv, 639.  
 McCullough, J. E., obit., x, 651.  
 McCurdy, C. J., obit., xvi, 639.  
 Maedonald, invention by, ii, 719.  
 Maedonald, A., obit., vi, 695.  
 Maedonald, A., v, 211; sketch and portrait, vii, 492.  
 Maedonald, J. C., obit., xiv, 665.  
 McDonald, Joseph E., ix, 396; obit. and port., xvi, 639.  
 Maedonald, J. M., obit., i, 620.  
 Maedonald, Sir John A., sketch, xvi, 474.  
 McDonald, W. J., obit., iii, 641.  
 Maedonnell, D. J., trial, i, 672.  
 McDowell, Irvin, x, 557 *et seq.*; obit., x, 652.  
 McDowell, Katherine S., obit., ix, 609.  
 Maedo Costa, obit., xvi, 676.  
 Maedo, Henrique de, xii, 683.  
 Maedo, M. B. de, obit., vi, 695.  
 Macedonia, x, 108, 109, 726, 727.  
 Macedonia, outrages in, ix, 764.  
 Maedonian question, the, xiii, 404, 768.  
 McElrath, T., sketch, xiii, 644.  
 McElroy, John, ii, 584.  
 McElroy, Joseph, obit., i, 621.  
 McElroy, W. H., xi, 2.  
 McEnery, J., obit., xvi, 639.  
 McEntee, J., obit. and port., xvi, 640.  
 Macfarlane, Robert, obit., viii, 591.  
 Macfarlane, S., explorations of, i, 330; ii, 335.  
 MacGahan, J. A., obit., iii, 658.  
 McGee, W. J., x, 404.  
 McGill, A. T., sketch, xiv, 639.  
 McGlynn, Rev. Dr., excommunication of, xii, 716, 717; xiii, 20.  
 McGowan, J., obit., xvi, 640.  
 McGrath, H. P., obit., vi, 686.  
 McGraw, John, obit., ii, 584.  
 MacGregor, Sir Charles Metcalfe, obit., xii, 633.  
 MacGregor, discovery, ii, 325.  
 MeHale, J., obit., vi, 695.  
 Maehobœuf, J. P., sketch, xiv, 639.  
 MeHenry, H. D., obit., xv, 653.  
 Machias, Me., xviii, 471.  
 McIntosh, J. B., sketch, xiii, 644.  
 McIntosh, W. C., x, 47, 690.  
 Mackay, A. M., obit., xv, 683.  
 McKay, C. F., sketch, xiv, 639.  
 McKay, Henry Kent, obit., xi, 689.  
 McKee, G. C., obit., xv, 654.  
 McKennal, Alexander, xii, 152.  
 McKennan, W., obit., xviii, 561.  
 McKenney, Gerald, obit., xi, 689.  
 Maekenzie, A., obit., xvii, 598.  
 Maekenzie, D., xi, 374.  
 Maekenzie, G. H., obit. and port., xvi, 640.  
 Mackenzie, Rev. J., in South Africa, ix, 112, 113; x, 86.  
 Maekenzie, Sir M., obit., xvii, 598.  
 Mackenzie, P. W., obit., xvi, 641.  
 Mackenzie, R. S., sketch, xiv, 639.  
 Maekenzie, R. Shelton, sketch, vi, 522.  
 McKeon, J., obit., viii, 591.  
 Mackey, Consul Bedford, imprisoned, x, 104.  
 McKibbin, D. B., obit., xv, 654.  
 McKinley bill, the, xv, 205 *et seq.*  
 McKinley, D. A., obit., xvii, 558.  
 Mackonoehie, Rev. A. H., viii, 6.  
 McLaren, A. A., obit., xvii, 598.  
 Maelay, M., sketch, xiii, 665.  
 Maelay, Nicholas de M., xii, 647.  
 McLean, Sir D., obit., ii, 607.  
 McLean, G. M., obit., xi, 690.  
 McLean, James H., obit., xi, 690.  
 McLean, John, obit., xi, 690.  
 McLean, W., obit., xv, 654.  
 McLean, William, x, 129.  
 McLeneghan, S. B., x, 400.  
 MeLin, S. B., i, 298; testimony of, iii, 718.  
 McLoughlin, Louise, ix, 249.  
 McMahon, L. S., obit., xviii, 561.  
 MacMahon, Marie E. P. M., Comte de, sketch and port., xviii, 468.

- MacMahon, President, on cabinets, ii, 308, 310; on prolonging his tenure of office, 310; opposition to, 311-318; resignation of, iii, 338; iv, 388.
- McManus, J. T., obit., xv, 654.
- MacMaster, James D., obit., xi, 790.
- McMichael, W., obit., xviii, 561.
- McMullen, J., obit., viii, 591.
- MacMunn, C. A., experiments by, ix, 658; x, 692.
- McNary, W. H., obit., xv, 654.
- McNeil, J., obit., xvi, 641.
- McNeil, trial of, ix, 638.
- McNeill, observations by, viii, 21.
- Macomb, Capt. J. N., x, 401.
- Macomber, F. A., obit., xviii, 561.
- Macon, Ga., illustration, ii, 340; xviii, 164.
- McPherson, E. H., obit., xi, 690.
- MacPherson, Sir Robert Taylor, obit., xi, 721.
- Macpherson, W., obit., xviii, 582.
- McQuade, James, obit., x, 652.
- McRae, J. E., obit., xvii, 538.
- McShane, J. A., nominated, xiii, 587.
- McTyeire, H. N., sketch, xiv, 640.
- McVickar, W. A., obit., ii, 584.
- MacWhorter, A., obit., v, 594.
- Maey, Josiah, Jr., obit., i, 621.
- Maey, R. H., obit., ii, 584.
- Madagascar, vii, 492; map, 493; viii, 505; explorations in, viii, 387; new tribes, *ibid.*; French in, ix, 458; the Hovas, x, 564; diplomatic negotiations with the French, 565; storming of Tarafat by Admiral Miot, 565; repulse of the French, 565; peace negotiations, 565; xi, 516; treaty of peace, xi, 517; secret convention, 518; fresh disputes, 518; xii, 452; French colonization, xi, 519; commerce, xii, 452; xv, 336; xvi, 314; xvii, 295; xviii, 332.
- Madden, E. M., obit., x, 652.
- Maddox, R. L., ix, 651.
- Maddox, Samuel T., obit., i, 621.
- Madge, the yacht, x, 790.
- Madier de Montjau, Alfred, obit., xvii, 598.
- Madison, capitol at, illustration, i, 808; xvi, 159.
- Madisonville, Indian relics at, ix, 15.
- Mädler, Herr, xi, 585.
- Madonna of Corano, the, x, 506.
- Madou, J. B., obit., ii, 606.
- Madras, new harbor at, iii, 287; breakwater, vi, 250; riots in, vii, 415.
- Madrid, palace at, illustration, ii, 679; revolt in, xi, 808.
- Madrid, Marguerite, Princess, obit., xviii, 582.
- Madrig, Jean N., obit., xi, 721.
- Madura, xiii, 589.
- Maeder, F. G., obit., xvi, 641.
- Maeder, Gaspard, obit., xvii, 558.
- Maffei, Andrea, obit., x, 663.
- Magdala, view near, i, 4.
- Magee, W. C., obit., xvi, 677.
- Maggiora, Dr., experiments by, xii, 676.
- Magliani, A., obit., xvi, 677.
- Magne, Pierre, obit., iii, 658.
- Magnesite, in furnaces, x, 581.
- Magnesium, carbonate, new, xi, 139.
- Magnetic apparatus, ill., vi, 405.
- Magnetism, xiv, 702; xv, 719; xvi, 733. See Electricity.
- Magnin, Joseph, sketch, iv, 386.
- Magnus, Baron, v, 208.
- Magoon, Elias L., obit., xi, 690.
- Magoon, H. S., sketch, xiv, 640.
- Magrath, A. G., obit., xviii, 561.
- Magyars, the, v, 369, 370; demonstrations against, viii, 49.
- Mahan, Asa, sketch, xiv, 640.
- Maharero, Chief, x, 137, 138.
- Mahdi, El, sketch, viii, 507; vi, 444; vii, 255; viii, 298, 299; first reverse, 300; capture of El Obeid, *ibid.*; victory over Gen. Hicks, viii, 301; ix, 301, 297 *et seq.*; nicknamed "the bridegroom," 301; x, 310, 313, 315; sketch of, 316. See also Hicks, viii, 430.
- Mahdists, invasion by, xiv, 1.
- Mahmoud, Sami Pasha, el Barubis, vi, 236.
- Mahogany, xi, 423; forests, xiv, 413.
- Mahon, J. P. O., obit., xvi, 677.
- Mahoney, P. P., sketch, xiv, 640.
- Mahrattas, the, ix, 345.
- Maief, explorations of, iii, 359.
- Maignau, Albert, x, 363.
- Maillardet, invention by, x, 613.
- Mail-matter, distribution, etc. See Postal Facilities, xii, 684-690.
- Maimene, district of, ix, 5; x, 48.
- Maine, Sir Henry J. S., xiii, 665.
- Maine, statistics, State officers, elections, legislative proceedings, etc., in each volume; views in, i, 474; ii, 500; statue of Gov. King, i, 475; abolition of capital punishment, ii, 500; election of Senator Blaine, ii, 501; tramp act, iii, 508; schools, 511; Penobscot Indians, iv, 576; vi, 524; operation of the liquor law, iv, 579, 580; xi, 520; election disputes, iv, 582-587; v, 486, 487, 488; constitutional amendments, v, 490; ix, 463; railroad taxation act, vi, 523; fish-culture, 525-526; railroad statistics, vii, 496; lumber industry, viii, 511; population, xv, 513; prohibition, 515; revision of laws, xviii, 472.
- Maipu, battery of, ix, 131.
- Maison de France, x, 32.
- Maitland, Capt., xi, 36.
- Maitre Ambrose opera, xii, 520.
- Majlath von Szekhely, obit., viii, 601.
- Major, John R., sketch, i, 501.
- Makart, Hans, sketch and portrait, ix, 464; xii, 279.
- Maklay, Dr. M., observations of, in Papua, ii, 335.
- Makoffsky, Konstantin, xii, 279.
- Maksut Ali Khan. See Alikhanoff.
- Malaga, view of, ii, 700.
- Malagasy race of Madagascar, the, x, 564, 565.
- Mala vita, the, xvi, 389.
- Malay Peninsula, troubles in, i, 404.
- Malcolm, W., obit., xv, 654.
- Malden, Henry, sketch, i, 501.
- Malden, Mass., xi, 173.
- Mallet, Sir E., x, 120.
- Malietoa, King, deposition of, xii, 731.
- Malleable castings, experiments with, xii, 48.
- Mallet, J. W., researches by, vi, 92, 93; xi, 535.
- Mallet, Sir L., obit., xv, 683.
- Mallory, C. E., obit., xv, 654.
- Malmesbury, Earl of, sketch, xiv, 665.
- Malon ministry, the, ix, 78, 80.
- Malow, Jules, obit., xi, 721.
- Malta, xv, 403; xvi, 342.
- Mälzel, invention by, x, 613.
- Mamiani, Count, obit., x, 663.
- Mammoth Cave, fish of, i, 440.
- Manassas, Confederate evacuation of, x, 557.
- Manchester, N. H., xi, 174.
- Manchester, Art Exhibition, xii, 278; ship-canal, the, ix, 373, 376, 377; xv, 281.
- Manchester-by-the-Sea, house at, xii, 366.
- Manchester, Va., xvi, 160.
- Mancini, P. S., sketch, xiii, 665.
- Mandalay, capture of, x, 115.
- Mandeville, J., death of, xiii, 397.
- Mandolin, xiv, 525.
- Manet, Edouard, obit., viii, 601.
- Manetho, vii, 257.
- Manganese, new compounds of, iii, 85; new mineral, vii, 87; bronze, vii, 529; viii, 525; ores in Chili, xi, 151; xii, 115; estimation of, ix, 123; xiv, 541; xviii, 484.
- Mangin projector, the, ix, 310; illustration, 309.
- Manhès, P., inventions by, x, 576, 577.
- Manica question, xv, 739.
- Manilius, quoted, ix, 600.
- Manistee, Mich., xvii, 114.
- Manisty, Sir H., obit., xv, 683.
- Manitoba, ministerial crisis in, iv, 319; new route for merchandise of, iv, 321; growth of, iv, 321; land laws, v, 217; boundaries, vi, 216, 222; history, etc., viii, 511; ix, 465; x, 567; exemption law in, x, 567; provincial claims, 568; mounds in, xi, 23; Mennonites in, xi, 532; railway charters in, xii, 455; flax-culture in, xi, 523, 532; xiii, 511; xvi, 478; xvii, 432; xviii, 473.
- Manitou, xii, 124.
- Mankato, xv, 136.
- Mankoroane, Chief, ix, 112; x, 85, 89.
- Manly, B., obit., xvii, 558.
- Manly, M. E., sketch, vi, 527.
- Mann, Dr. George, obit., i, 651.
- Mann, W. J., obit., xvii, 558.
- Manners, Lord John, x, 450.
- Manning, Amos R., sketch, v, 491.
- Manning, Daniel, sketch and portrait, x, 757; obit., xii, 597.
- Manning, Henry E., obit. and portrait, xvii, 599.
- Maunung, T. C., obit., xii, 597.
- Mannsfeld, Count, obit., vi, 696.
- Mansfield, xv, 137.
- Mansfield, E. D., sketch, v, 491.
- Mansfield, W. R. See Sandhurst.
- Manstein, G. von, obit., ii, 606.
- Mantell, Dr., viii, 436, 437.
- Manteucci, P., explorations by, vi, 326; death of, vi, 327.
- Manteuffel, Baron, obit., x, 664.
- Mantiueia, excavations at, xiii, 27.
- Manual training, xvi, 481; in colleges, xii, 235; in schools, 235; schools of St. Louis, Chicago, Toledo, Baltimore, Philadelphia, Montclair, and Cleveland, 236, 237, 238.



- Manuey, Bishop, death of, x, 713.  
 Manufactures of the United States, vii, 498; in foreign markets, ii, 126; iv, 187; v, 512; vi, 854, 857; of States, see under names of States.  
 Manufacturing industries, viii, 334; xvii, 275; 766.  
 Manuscripts, deciphering of Mexican, xii, 16.  
 Maoris, the, difficulty with, iv, 57; decrease of, v, 37; vii, 45; peace with, viii, 37; ix, 60; x, 66; xi, 66.  
 Maple sugar, xvi, 857.  
 Maracaybo, Lake, survey, xii, 790.  
 Marais, L. H., obit., xvi, 677.  
 Marathon tumulus, ix, 24.  
 Marble, large fields of, in California, xi, 129; xv, 520; xvi, 541.  
 Marcano, experiments by, x, 154.  
 Marc Dufraisie, obit., i, 638.  
 Marcère, Emile, sketch, ii, 320.  
 Marchal, J. J., obit., xvii, 599.  
 Marchaud, Count, obit., i, 638.  
 Marche, A., explorations by, ii, 333, 334; xii, 313.  
 Marcke, Emile van, xi, 347; obit., xvi, 677.  
 Marcus Aurelius, dedicatory tablet of, ix, 22.  
 Marcy, Randolph Barnes, x, 401, 554; obit., xii, 597.  
 Margarine act, xii, 344.  
 Margarita Island captured, x, 776.  
 Margary, H. J., obit., i, 638.  
 Margary murder, the, i, 44, 108.  
 Maria of Saxony, obit., ii, 606.  
 Maria of Spain, obit., i, 638.  
 Maria, Grand-Duchess of Russia, obit., i, 638.  
 Maria Anna, Empress, obit., ix, 618.  
 Maria Christina, regent of Spain, x, 656; sketch, 738.  
 Marie Luise Alexandrine, Princess of Prussia, obit., ii, 606.  
 Marie of Bavaria, sketch, xiv, 665.  
 Mariette, Auguste, researches of, vii, 256, 260; ix, 19, 22; obit., vi, 696.  
 Marnage, discoveries by, iii, 87; iv, 137.  
 Marigny, M., obit., xv, 654.  
 Mariley, Bishop, sketch, xiv, 666.  
 Marine Bank failure, ix, 329.  
 Marine Conference, International, xiv, 525.  
 Mario, G., sketch, with portrait, viii, 514.  
 Marion, xv, 137.  
 Maritime Canal Company, the, xii, 563.  
 Maritime Engineering, xii, 257; lumber raft abandoned at sea, 257.  
 Maritime exhibition, xiv, 528.  
 Markevitch, B., obit., ix, 618.  
 Markham, A. H., excursion of, iv, 417.  
 Markham, C. R., quoted, vii, 682.  
 Markland, A. H., obit., xiii, 645.  
 Marks, A. S., sketch, iii, 784.  
 Marlborough, Duke of, obit., xvii, 599.  
 Marmaduke, J. S., obit., xii, 598.  
 Marno, E., African journey of, iii, 362; obit., viii, 601.  
 Marquardt, L., experiments by, viii, 113.  
 Marquesas Islands, relics in, ix, 275.  
 Marquette, xv, 137.  
 Marr, Carl, picture by, xi, 346.  
 Marriage, laws on, in Austria, i, 57; with a step-daughter, i, 510; with a sister-in-law, iv, 454; v, 111, 411; kinship in, iv, 690; between whites and negroes, ii, 714; iv, 845; vii, 459; x, 369; Catholics and Protestants in Chili, iii, 96; x, 164; of unfrocked priests in France, iii, 848; polygamous, iii, 813, 814; civil, in Italy, iv, 526, 773; in Denmark, vi, 209; in Hungary, ix, 69; in India, xii, 382; international, x, 20, 91; reform, xiii, 433; xv, 434.  
 Marriages, Hindu, xvi, 371.  
 Marriott, W., xii, 489.  
 Mars, satellites of, ii, 43; iii, 35; ix, 49; ellipticity of, v, 33; canals of, xi, 54; recent studies of, xiii, 53, 511; map, 512; xv, 40; opposition of, xvii, 39.  
 Marsegg, H. M., obit., xii, 634.  
 Marsh, C. W., experiments by, viii, 118.  
 Marsh, George P., sketch, vii, 504; on forests, viii, 356.  
 Marsh, O. C., observations by, vi, 304; viii, 437; x, 404; port., xv, 578.  
 Marsh, Sylvester, obit., ix, 609.  
 Marshall, A. M., obit., xviii, 582.  
 Marshall, O. H., obit., ix, 610.  
 Marshall Islands, German protectorate over, x, 138, 415.  
 Marshals, U. S., proposed appropriation for compensation and expenses of, v, 152-167.  
 Marshes, drainage, in Italy, i, 255.  
 Marshman, Newman R., invention by, x, 617.  
 Marston, John, obit., x, 653.  
 Marston, W., obit., xv, 683.  
 Martel, L. J., obit., xvii, 599.  
 Marthon, J., obit., xvi, 641.  
 Martigny, G., death of, i, 659.  
 Martin, B. N., obit., viii, 592.  
 Martin, C. H., xii, 312.  
 Martin, Henri, obit., viii, 601.  
 Martin, John, nominated, xiii, 460.  
 Martin, John A., sketch, xiv, 640.  
 Martin, Joseph, journeys of, in Siberia, xii, 311.  
 Martin, J. B., ix, 45.  
 Martin, Konrad, obit., iv, 700.  
 Martin, M., nominated, xiii, 766.  
 Martin, Nicolas, obit., ii, 606.  
 Martin des Pallières, obit., i, 638.  
 Martineau, Harriet, sketch, i, 501; statue of, xi, 347.  
 Martinelli, T. M., sketch, xiii, 665.  
 Martinez, A., obit., xvi, 677.  
 Martinho, A. S. C., vii, 61.  
 Martinique, viii, 821; ix, 804; x, 783; xvii, 840; xiv, 824; xvi, 865; xiii, 794.  
 Martins, experiments by, viii, 632.  
 Martinucci, case of, vi, 724.  
 Martos, Christino, obit., xviii, 583.  
 Marvin, Enoch M., obit., ii, 584.  
 Marvin, R. P., obit., xvii, 559.  
 Marvine, A. R., obit., i, 621.  
 Marx, Karl, obit., viii, 602.  
 Maryland, State officers, government, legislative proceedings, etc., in each volume; views in, i, 503, 505; ii, 479; arbitration of the North Carolina boundary, i, 502; establishment of Johns Hopkins University, 506; prison inspection, ii, 478; refusal of applications for admission to the bar, 481; election of Senator Broome, iii, 520; proposed canal to connect Baltimore with the ocean, 521; trial of judges of elections for disregard of U. S. marshals, 521; artificial propagation of the oyster, iv, 591; inauguration of Gov. W. T. Hamilton, v, 492; Senator Gorman elected, 492; anniversary of the founding of Baltimore, 494; coal-miners' strike, vii, 506; McDonough school of farming, 507; Johns Hopkins University, 508; Pratt Public Library, 509; gift of Mr. Wilson, 510; election of Governor McLane, viii, 516; claim of the State against the Chesapeake and Ohio Canal, xii, 456; population, xv, 516, and xvi, 493; boundary, xv, 520; Australian ballot in, xvi, 495; valuations, xvii, 432; constitutional amendment, xviii, 475.  
 Masai, the tribe of, ix, 347.  
 Mashonaland, xiv, 108.  
 Masius, Hermann, obit., xviii, 583.  
 Mason, discovery by, iii, 362.  
 Mason, Lowell, ix, 543.  
 Mason, Sir J., obit., vi, 696.  
 Mason, Sergeant, trial of, vi, 548.  
 Masonry dam, Austin, Tex., xvii, 252; in India, xvii, 254.  
 Masonry, emblems of, in the obelisk, ix, 595, 600.  
 Maspero, Prof., discoveries by, vi, 21; vii, 260; ix, 21, 22; x, 32; report, xi, 29-32; xii, 18.  
 Mass, Joseph, obit., xi, 720.  
 Massachusetts, statistics, legislative proceedings, elections, State officers, etc., in each volume; views in, i, 510, 512, 513; ii, 483, 485, 486, 487, 490, 491; iii, 524, 526; bank legislation, i, 508; family-bank scheme of Elizur Wright, 509; eastern railroad relief, 509; election acts, 509; constitutional amendment relating to Harvard College instructors, proposed, 510; veto of act confirming a marriage of stepfather and daughter, 510; election of Governor Rice, 514; prohibitory law defeated, ii, 482; reform-school and hospital investigation, 482, 483; coroner system abolished, 483; opening of reformatory prison for women, 485; State charities report, 486; act for new board, iv, 596; meaning of "money-bill," iii, 523; Hoosac tunnel, 524; vi, 537; xi, 529; child-labor bill, iii, 524; proposed woman suffrage amendment, 525; statistics of color-blindness, 526; new charities, 528; vi, 537; election of Governor Talbot, iii, 537; constitutional amendment, iv, 597; worship in public institutions, 597; taxation, 597, 598; discussion of the place of women in public affairs, 598, 599; civil-damage bill, 599; contract-labor system, 600; v, 495; success of societies for prevention of cruelty

- to animals, iv, 601; railroad commissioners, 601; constant circuit rail system, 602; election of Governor Long, 605; sketch, v, 501; re-election, vi, 541; 250th anniversary of the founding of Boston, v, 501; divorce laws, vi, 535; viii, 519; screen-law, the, vi, 539; decision against admitting a woman to practice at the bar, 539; fish-culture, 540; railroad legislation, vii, 511; election of Governor Butler, 519; his recommendations on woman-suffrage and education, 516, 517; Tewksbury almshouse investigation, viii, 517; women in office, 519; election of Governor Robinson, ix, 471; re-election, x, 573; civil-service system, x, 572; xi, 529; Normal Art School, xi, 528; Sunday law, xii, 458; proposed division of the town of Beverly, 459; election of Governor Ames, 463; population, xv, 520; bribery investigation, 521.
- Massai, Cardinal, sketch, xiv, 666.
- Massari, explorations by, vi, 526.
- Massowah, i, 3 *et seq.*; Italians at, ix, 296; x, 312, 505; xi, 1; xii, 1; xiii, 3, 4; xiv, 2; xv, 453.
- Mastiff, the English, ix, 260.
- Masupha, Chief, x, 54.
- Matabele, the war with, xviii, 123; lady, xviii, 124; warrior, 125.
- Matabele-land described, iv, 403; xiv, 106; xv, 95.
- Matagong Island seized by France, iv, 16.
- Matamoros, cathedral of, illustration, ii, 512.
- Matanzas, illustration, ii, 701.
- Maté, exportation of, xii, 72.
- Mather, R. H., obit., xv, 655.
- Mathews, C., sketch, xiv, 640.
- Mathews, J. N., sketch, xiii, 545.
- Mathushek, F., obit., xvi, 641.
- Matière-noire, experiments with, vii, 93.
- Matout, Louis, sketch, xiii, 665.
- Mattell, George W., obit., ii, 584.
- Matson, C. C., nominated, xiii, 441.
- Matt-sudaira, obit., xv, 634.
- Matta, M. A., obit., xvi, 599.
- Matteson, O. B., sketch, xiv, 640.
- Matthews, H. M., i, 803.
- Matthews, Julia, obit., i, 621.
- Matthews, Mason R., invention by, x, 617.
- Matthews, Stanley, trials before, x, 268 *et seq.*; sketch and port., xiv, 640.
- Mathieu, Henri, sketch, xiv, 641.
- Matto Grosso, the, x, 104; revolt of, xvii, 66.
- Mattoon, Stephen, sketch, xiv, 641.
- Mattson, Hans, obit., xviii, 562.
- Maturin, E. S., sketch, vi, 541.
- Matzerath, J., obit., i, 639.
- Mauch Chunk, ill., ii, 636.
- Maudsley, A. P., xi, 24.
- Maumené, discovery by, iii, 90.
- Mauna Loa, ix, 389.
- Maupassant, Guy de, obit. and port., xviii, 583.
- Maurau, J. E., sketch, xiii, 645.
- Maurice, Jules, obit., i, 639.
- Mauritius, xiv, 400; xvi, 344; xvii, 327.
- Maus, Henri, obit., xviii, 583.
- Maverick, A., sketch, xiii, 645.
- Maxim, H. S., inventions by, v, 239; vi, 259; vii, 275; his electric lamp, ix, 305.
- Maxwell, Lady, obit., ii, 606.
- Maxwell, J. C., theory of electricity of, vi, 239.
- May, Abby W., sketch, xiii, 645.
- May, Sir T. E., obit., xi, 721.
- Maya, hieroglyphic inscriptions, xi, 24; inscriptions, xvii, 12.
- Mayer, Joseph, obit., xi, 721.
- Mayer, J. R. von, obit., iii, 658.
- Mayer, Karl, sketch, xiv, 666.
- Mayer, L., experiments by, v, 87.
- Mayhew, Henry, obit., xii, 634.
- May Laws, the, amended, xii, 325.
- Maynard, E., obit., xvi, 642.
- Maynard, Horace, obit., vii, 640.
- Mayne, R. C., obit., xvii, 600.
- Mayo, Lord, x, 2.
- Mazade, Charles de, obit., xviii, 583.
- Mazatlan, illustration, i, 547.
- Maze, H., obit., xvi, 677.
- Mazzanovich, John, obit., xi, 691.
- Mead, Larkin G., x, 361.
- Mead, William C., obit., iv, 694.
- Meade, Edwin R., sketch, xiv, 641.
- Meade, George G., x, 428; statue of, xii, 280.
- Meadville, Pa., xvi, 160.
- Meany, Stephen Joseph, xiii, 645.
- Mears, Frederiek, obit., xvii, 559.
- Meaux, Viscount de, ii, 319.
- Mechanic Arts, School of, xii, 233.
- Mechanical Engineering, progress of, vi, 541.
- Mechanical Improvements and Inventions, i, 515; ii, 494.
- Mechanics, xiv, 691; xvi, 725; xviii, 616.
- Mechi, J. J., obit., v, 601.
- Mecklenburg Declaration Celebration, vii, 634.
- Medal of Honor, the United States, xii, 463; illustration, 329; the naval, 473.
- Medals, astronomical, xiii, 58.
- Medical congress, xv, 382.
- Medical Diplomas, unlawful sale of, v, 622.
- Medical Science and Practice: its Progress, vi, 549.
- Medicine, recent advances in, xviii, 701; recent works on. See Literature, in every volume.
- Medina, territory of, xii, 415.
- Medjidie Order, the, ix, 279.
- Medley, John, obit., xvii, 600.
- Medum, pyramid of, xvi, 20.
- Meendeleef, M., xi, 540.
- Megalopolis, ruins at, xvi, 18.
- Megaphone, the, iii, 537.
- Meheddin Buhran, obit., i, 639.
- Mehemet Ali Pasha, sketch, ii, 499; obit., iii, 659.
- Mehemet Ali Square, ill., i, 245.
- Meigs, Henry, obit., ii, 585; bridge built by, viii, 317.
- Meigs, Col., survey by, viii, 309.
- Meigs, M. C., obit. and port., xvii, 559.
- Meinicke, K. E., sketch, i, 521.
- Meissner, experiments by, iv, 36.
- Meissner, A., x, 664.
- Meissonier, J. L. E., collected works of, x, 359; the vidette, xi, 347; sketch and port., xvi, 500.
- Mejillones, territory of, x, 400.
- Mékariski, invention by, i, 516.
- Melbourne, Australia, exposition at, v, 39; post-office at, illustration, iv, 57.
- Melchisedek, Bishop, ix, 764.
- Meldola, B., xii, 670.
- Melgund, Lord, x, 126.
- Melikoff, Count Loris, xiii, 521.
- Melin, Joseph, x, 363.
- Melines, F. J., viii, 367.
- Melinger, Gaston, xii, 276.
- Melinite, xi, 355; scandal, the, xvi, 311.
- Melkarth, temple at, ix, 28.
- Mell, Patrick H., sketch, xiii, 646.
- Melland, B., experiments x, 695.
- Mellin, Henrik, sketch, i, 521.
- Mellish, Sir G., obit., ii, 606.
- Melville, G. W., portrait, vii, 334.
- Melville, Herman, sketch and port., xvi, 503.
- Melville, H. D., Viscount, obit., i, 639.
- Memnon, statue of, x, 607.
- Memorial Arch, xv, 620; xvii, 522.
- Memorial Day, xii, 475.
- Memphis, xi, 174; illustration, ii, 711; debt of, iv, 829; vi, 832; unsanitary condition of, iv, 380; yellow fever in, iv, 359, 829. See also Fever, Yellow.
- Memphis colossi, xiii, 30.
- Mendana, ix, 275.
- Mendelieff, invention by, iii, 545; classification of elements by, v, 87; law of atomic weights discovered by, vi, 40; ix, 118; xii, 100.
- Mendelssohn Centenary, xi, 459.
- Mendenhall, James W., obit., xvii, 559.
- Mendenhall, John, obit., xvii, 559.
- Mendenhall, T. C., xi, 46, 47; port., xiv, 36.
- Mendes, A. P., obit., xviii, 562.
- Meuclek, King of Shoa, ii, 2; iv, 2; viii, 386; xi, 1; xii, 2; proclaimed ucuq, xiv, 1.
- Menendez, Gen., x, 467.
- Menephthah, King, ix, 20; x, 36.
- Menes, vii, 260.
- Menier, invention by, vi, 255.
- Mennonites, iii, 50; xi, 531; xv, 66; colony, the, xviii, 473.
- Menominee, Mich., xviii, 165.
- Mentana monument unveiled, v, 410.
- Menthol, ix, 272; influence of, xii, 673.
- Mercadier, experiments by, vi, 787.
- Mercantile Agencies, xiv, 537.
- Mercedes, Maria de las, Queen of Spain, obit., iii, 658; x, 656.
- Merchant Marine of the United States, vii, 520; ix, 198.
- Mercie, Antonin, xi, 343; xii, 276.
- Mercur, Ulysses, sketch and portrait, xii, 478.
- Mercury, mass and density of, ii, 43; transit of, iii, 35; xvi, 50; brightness, *ibid.*; spots, viii, 20; xv, 39; rotation of, xvii, 39.
- Meredith, Joseph H., obit., xi, 691.
- Meriden, xiv, 154.
- Meridian, common prime, vii, 150; ix, 54.
- Meriten, A. C., experiments by, xi, 524.
- Mermillod, G., obit., xvii, 600.
- Meriwether, D., obit., xviii, 562.
- Merivale, Charles, obit., xviii, 583.
- Méritens, invention by, vii, 265.



- Merodach, ix, 18, 19.  
 Merriam, George, obit., v, 594.  
 Merriam, W. R., nominated, xiii, 560.  
 Merrick, P. B., sketch, xiii, 646.  
 Merrick, Richard T., obit., x, 653.  
 Merrick, W. M., sketch, xiv, 641.  
 Merrill, Margaret M., obit., xviii, 562.  
 Merrill, S., explorations of, i, 328; ii, 324.  
 Merrill, W. E., obit., xvi, 642.  
 Merriman, C. S., invention by, iii, 752, 766.  
 Merriman, T. A., obit., xvii, 560.  
 Merrimon, A. S., obit., xvii, 560.  
 Merry, Francisco, sketch, i, 521.  
 Mersey Tunnel, viii, 311; x, 331.  
 Merson, Luc Olivier, x, 362.  
 Merv. decay of, i, 7; importance of, iv, 775; x, 7; Russian annexation, viii, 706; ix, 6; x, 2; chief of, x, 19.  
 Merv Turkomans, the, submission of, to Russia, x, 4.  
 Merwede Canal, the, xvii, 488.  
 Meshed, ix, 648; x, 14.  
 Meskovich, Gen., x, 731.  
 Message, President's, xiii, 190; xiv, 183; xv, 171; xvi, 201; xvii, 178.  
 Messersmith, J. S., obit., xvi, 642.  
 Messiah, prediction of the Moham-medan, vi, 444; vii, 804; viii, 507. See also Mahdi, El.  
 Messner, Joseph, obit., xi, 722.  
 Metallic sodium, new process for, xii, 107.  
 Metallurgy, vii, 528; viii, 520; ix, 471; x, 574; xi, 533; xii, 479; xiii, 522; xiv, 538; xv, 525; xvi, 505; xvii, 439; xviii, 479.  
 Metals, i, 522; ii, 499; new, ii, 90, 502; vi, 93; detection of alloys, iv, 502; new compound, v, 93; annealing, vi, 542; melting-points, ii, 501; viii, 91; production of the precious, ii, 240; specific gravity, ix, 120; electric conductivity of, xi, 538; market in 1884, ix, 479.  
 Metemnah, taken, ix, 301.  
 Meteoric Showers, vii, 39; x, 56; in 1893, xviii, 46.  
 Meteorograph, the, vi, 258.  
 Meteorology, international observations, i, 525; iii, 537; viii, 525; stations for observations, iii, 538; vii, 335; map showing annual rainfall, viii, 527; x, 581; xi, 539; congress and stations, xi, 545-547; xii, 487; popular errors in, xii, 487; xiii, 531; xiv, 546; xv, 532; xvii, 447.  
 Meteors. See Astronomical Progress, in every volume.  
 Methodist Ecumenical Congress, vi, 557.  
 Methodists, statistics, meetings of conferences, boards, societies, committees, missions, etc., in each volume; proposed union with Colored Methodist Church, i, 533; question of lay representation in Wesleyan conference, 535; embarrassment of publishing-house of M. E. Church South, iii, 547; new denomination of, iv, 608; ecumenical council, v, 509; vi, 557; lay representation in Canadian conference, vii, 538; union of Canadian, ix, 268; question of extension of ministerial term, ix, 483; doctrine concerning bishops, 483 secession in Tonga from Wesleyans, x, 588; resolution on divorce, 483; xi, 549; endowment of King's College University at Toronto, 549.  
 Methyl alcohol, etc., v, 89.  
 Metis, rebellion of the, in Canada, ix, 124; x, 711.  
 Metronome, electric, with illustration, xi, 740.  
 Metropolitan Bank, ix, 329.  
 Metropolitan Museum. See under Fine Arts.  
 Metz, illustration, ii, 352.  
 Meuse, fortification of the valley of the, xii, 64.  
 Mexican manuscript, deciphered, xii, 16.  
 Mexican War, the, see Santa Anna, i, 715; bill for pensions to veterans of, debated, viii, 248.  
 Mexico, City of, illustration, i, 543, 545; incident of its capture, x, 421, 533.  
 Mexico, statistics, government, etc., in each volume; views in, i, 543, 545, 547; ii, 511, 512, 514; iii, 554; silver trade, i, 542; industrial development needed, 542, 543; the revolution, 544; Escobedo's expedition to suppress disturbances in Michoacan, 545; revolutionary plan of Tuxtepec—constitution of 1857, 545; Diaz head of provisional government, 545; uprising in Oajaca, 546; re-election of Lerdo, 546; sketch of Diaz, 547; the only railroad, ii, 511; end of military operations, 512; suppression of raids, 513; manufacturers' association, iii, 553; need of means of communication, 555; United States recognition of Diaz government, 555; condition of the republic, 555; new Episcopal church, iv, 611; deputation to promote commerce, 614; Tehuantepec ship-railway, 614; vi, 569; election of Gonzalez, v, 510; new steamship lines, vi, 569; submarine cable, 569; telegraphs, 569; new railways, 569; xii, 502; geography, vii, 540; relations with United States, viii, 535; discovery of tin, 537; of gold and silver, x, 591; mines of Sonora, viii, 537; resources of Michoacan, 537; tunneling a volcano, 537; petroleum, 537; grape and banana culture, 537; the toloachi-plant, 538; immense estates, 538; American goods in, ix, 492; orchilla-weed, zapote-wood, 493; need of paper-mills, 493; pearl-fisheries, 493; mission work, 494; lottery of divine providence and others, x, 589; reaction in favor of ecclesiasticism, 589; opposition to Mormons, 589; Indian hostilities, 590; natural phenomena, 590; xi, 557; interference with Central America, x, 465, 590; riot of students, 590; unemployed capital and taxes, xi, 554; cotton and silk, 555; volcanic eruptions, 557; sulphur-mines, 556; steamer lines, xii, 502; objections to Jewish colonists, 503; Protestantism in, 503; immigration and American enterprise, 503; relations with Guatemala, 503; drainage of the valley, 504; iridescent stone-ware, 504; earthquakes, 504; the French in, x, 431; attempt to send Gen. Grant to, 432; pyramid discovered, viii, 536; the Aztec calendar-stone, viii, 536; Aztec remains found in, ix, 17; church work in, 709; population, xv, 548; relations with the United States, xvi, 524; insurrections, xvi, 524 and xviii, 492.  
 Meydum, pyramid of, illustration, vii, 262.  
 Meyer, H., observations vi, 303.  
 Meyer, H. A., sketch, xiv, 666.  
 Meyer, J. G., obit., xi, 722.  
 Meyer, L., table by, vi, 41; observations, ix, 18.  
 Meyer, Lothar, x, 148; xii, 100.  
 Meyer, Lucas, x, 136, 137.  
 Meyer, M. W., researches, vii, 38.  
 Meyer, V., observations by, viii, 111; invention by, viii, 465; ix, 119, 120; xii, 100, 104.  
 Meyer, W., observations, viii, 23.  
 Meyrowitz, A., obit., xii, 598.  
 Mezzacapo, L., obit., x, 664.  
 Miall, E., obit., vi, 696.  
 Mica powder, x, 345.  
 Michael, Grand Duke, sketch, ii, 514.  
 Michaelovsk-Askraabad railroad, x, 7.  
 Michel, F. X., obit., xii, 634.  
 Michel, Louise, trial of, viii, 369; xii, 296.  
 Michelis, Friedrich, obit., xi, 722.  
 Michell, Dr., obit., ii, 607.  
 Michel-Levy A., experiments by, x, 156.  
 Michelson, A. A., ix, 49.  
 Michigan, statistics, government, elections, legislative proceedings, industries, etc., in each volume; views in, i, 552; ii, 519, 520; State reform school, i, 549; election of Gov. Croswell, 553; re-election, iii, 562; fish-culture, ii, 519; State public school, iii, 557; communication with the upper peninsula, 559; proposed constitutional amendments, iv, 616; vi, 574; vii, 557; ix, 495; election of Senator Chandler, 616; election of Gov. Jerome, v, 523; re-election, vii, 557; revision of laws, vi, 574-576; railroad lands, 576; public lands, 579; University report, 582; election of Senator Conger, 576; tax and assessment act, vii, 547; charitable institutions, 553; election of Senator Palmer, viii, 540; State census, ix, 494; election of Gov. Alger, 495; population of cities, x, 593; election of Gov. Luce, xi, 560; election of Senator Stock-bridge, xii, 504; salt manufacture, 506; local-option law in operation, 506; fires, vi, 586; population, xv, 550; judicial decisions, 552, and xvi, 527; farm mortgages, xv, 552, and xvi, 527; electoral law, xvii, 464; State lands, xviii, 494; constitutional amendments, 495.

- Michigan City, Ind., xvi, 160.  
 Microcoeci, ix, 496.  
 Micrometer-telescope, i, 554.  
 Micro-organisms, ix, 495; x, 149, 160.  
 Micro-polariscope, ix, 516.  
 Microphone, the, iii, 562.  
 Microscopical Society, American, xviii, 31.  
 Microscopy, ix, 499; in botany, ix, 90; in chemical analysis, x, 155.  
 Microtasmeter, the, iii, 563; illustration, 563.  
 Middleton, Gen., x, 125 *et seq.*; knighted, 129.  
 Middleton, J. C., sketch, xiii, 646.  
 Middletown incorporated, xiii, 608.  
 Midhat Pasha, sketch, i, 774; trial of, vi, 841; obit., ix, 618.  
 Midian, the land of, theory concerning, iii, 361.  
 Midwinter Exposition in California, xviii, 120.  
 Mikoslavski, L., obit., iii, 659.  
 Miers, J., obit., iv, 700.  
 Mignet, F., obit., ix, 619.  
 Mignonette case, ix, 522.  
 Mihlinovieh, Col., x, 729.  
 Miklosich, F., obit., xvi, 677.  
 Miklucho-Malay, journey in New Guinea, iii, 364.  
 Milan IV of Servia, sketch of, ii, 520; vii, 738; x, 109, 112, 727; divorced, xiii, 739; abdicates, xiv, 760.  
 Miles, M., experiments x, 690.  
 Miles, Marcus H., obit., ii, 585.  
 Miles, W. R., obit., xv, 655.  
 Milford Haven, docks, vii, 279.  
 Millau, J. J., obit., xvi, 642.  
 Milline, xi, 140.  
 Military defenses, of Denmark, v, 207; of Austria, vii, 51.  
 Military interference at elections, bill on, iv, 835.  
 Military Order of America, xv, 553.  
 Militia, bill on, in Georgia, iv, 421; in Illinois, report, iv, 485; v, 380; improvements in New Jersey, iv, 668; needed in Nebraska, v, 552; laws for, in Canada, viii, 83; State laws, xi, 471.  
 Milk, impure, ix, 2.  
 Mill, Mr., observations by, xi, 540.  
 Millais, Sir John, x, 359, 364; xi, 345; xii, 277.  
 Millard, H. B., obit., xviii, 562.  
 Millaud, Albert, obit., xvii, 600.  
 Miller, Emmanuel, obit., xi, 722.  
 Miller, George J., obit., i, 639.  
 Miller, John, obit., xi, 691.  
 Miller, John L., sketch, xiv, 641.  
 Miller, J. Warren, obit., i, 621.  
 Miller, Robert, obit., i, 639.  
 Miller, Samuel F., obit., xvii, 560.  
 Miller, S. F., obit. and port., xv, 655.  
 Miller, W., nominated, xiii, 609.  
 Miller, Warner, sketch, vi, 648.  
 Miller, William, preaching of, xi, 2.  
 Miller, William H. H., sketch and port., xiv, 803.  
 Miller, W. R., i, 39, 40; iv, 38.  
 Millet, Aimé, obit., xvi, 678.  
 Millet, Frank D., xi, 346.  
 Millet, J. F., xi, 347.  
 Mills bill, the, xiii, 206.  
 Mills, Clark, obit., viii, 592.  
 Mills, J. E., xi, 136.  
 Mills, Robert, ix, 798; sketch, xiii, 646.  
 Mills, T. W., investigations by, viii, 636.  
 Mills, Zophar, obit., xii, 598.  
 Milman, Robert, sketch, i, 554.  
 Milmore, Joseph, obit., xi, 691.  
 Milmore, Martin, obit., viii, 592.  
 Milns, William, sketch, xiv, 641.  
 Milow, P. S., obit., xii, 599.  
 Milroy, J. B., nominated, xiii, 443.  
 Miltzin, Mount, vi, 327.  
 Milwaukce, view of, i, 807; growth of, xi, 174.  
 Min River, fighting on the, ix, 139, 141; illustrations, 139, 141.  
 Minehin, J. B., survey in South America by, ii, 336.  
 Mindeleff, Dmetri, obit., xvii, 566.  
 Mindoo, xi, 114.  
 Mind-reading, xii, 506. See Telepathy.  
 Mineral exhibition in Peru, xi, 752; land convention, xiii, 569; mineral wool, xvi, 528.  
 Minerals, in Tennessee, i, 742; new, vi, 98, 401; x, 153; xi, 139; in Florida, xii, 287; obtained artificially, x, 156.  
 Mineral waters, x, 593.  
 Miners, convention of, vii, 77; congress, xv, 71; xvi, 311; congress of, in Belgium, xviii, 78.  
 Mines, J. F., obit., xvi, 642.  
 Mines, of Mexico, i, 542; v, 18; viii, 537; side-lines of, iii, 112; v, 119; draining of, iii, 280; Sutro Tunnel, iii, 288; in Peru, iii, 291, 688; in Arabia, iii, 361; gold, in Georgia, iii, 371; iv, 428; *débris* from, iv, 119; v, 71, 73; vi, 78; vii, 75; of Colombia, iv, 149; of Nevada, iv, 658; in Arkansas, vi, 33; in Alabama, vi, 8; of Colorado, vi, 118; viii, 143; xii, 142; new, v, 119; xvii, 16; coal, in Kentucky, v, 425; decreased value of Nevada, vi, 628; laws on claims to, vi, 628; United States, vi, 853, 856; iron, in Minnesota, vii, 560; in Tennessee, vii, 789; in South Carolina, vi, 814; of Chili, viii, 124; of Honduras, viii, 432; of Montana, viii, 547; xii, 519; tin, in Dakota, viii, 523; xii, 219; quicksilver, of Siena, viii, 523; gold, of Russia, viii, 700; Chinese superstition concerning, vii, 101; Bureau of, in California, v, 71; inspector of, in Indiana, iv, 501; in Bolivia, xii, 69; in Idaho, xii, 273; nickel, in New Caledonia, xii, 485; anti-mony, in Portugal, xii, 485; ruby, in Burmah, xii, 84; salt, in New York, xii, 725; laws of, in Australia, ix, 58. See articles on the States.  
 Minghetti, Mario, xi, 453; obit., xi, 722.  
 Mining, Poetsch method of, xi, 320; congress, xvii, 475; law, xiii, 552; statistics, xvi, 846; towns, new, xvii, 126; in Arizona, xviii, 20; in Colorado, 176; in Utah, 744.  
 Minneapolis, Minn., growth of, xi, 175; its mills, vi, 588.  
 Minnesota, statistics, State officers, industries, legislative proceedings, elections, etc., in each volume; views in, ii, 522, 524; act allowing women to vote at school elections, i, 555; limited divorce act, 556; constitutional amendments, 557; vi, 595; viii, 542; xi, 564; xviii, 495; railroad bonds, 558; ii, 521; iii, 564; v, 524; their history, vi, 590; sketch of Governor Pillsbury, i, 558; his re-election, iv, 632; grass-hopper plague, i, 558; proposed amendment, ii, 525; vi, 595; re-election of Senator Windom, ii, 526; re-election, vi, 592; tax-law, iii, 564; school text-books, 565; office of Public Examiner created, 565; his report, iv, 624; sugar-cane industry, iii, 568; commercial convention, 569; seven per cent. the legal rate of interest, iv, 623; inspection of wheat, 623; swamp-lands, 625; vi, 596; homestead laws, iv, 627; analysis of waters, 628; effect of severe cold, 628; mildness of climate in the extreme northwest, 628; second centenary of the discovery of the Falls of St. Anthony, v, 527; forests, vi, 592; election of Governor Hubbard, 595; re-election, viii, 543; iron-ore in the Vermilion Lake region, vii, 560; prohibitory amendment rejected, viii, 542; cyclone at Rochester, viii, 543; fish-culture, ix, 527; gold discoveries, 527; railroad commission, x, 601; repeal, xii, 510; census, 602; election of Governor McGill, xi, 563; Senator C. K. Davis elected, xii, 510; convict-labor, 510; garnishment law, 511; high license, 512; iron-mines, 512; population, xv, 554; judicial decisions, 555; railroad and warehouse commission, xvi, 531; grain inspection, xvii, 468; mortgage indebtedness, xviii, 496.  
 Minor Planets. See Astronomical Progress, in every volume.  
 Minor, W. T., sketch, xiv, 641.  
 Mint, United States, statistics of, vii, 484.  
 Minto, William, obit., xviii, 583.  
 Minton tiles, ix, 248.  
 Minzaing, Prince, xii, 81; campaign against, 82.  
 Miot, Admiral, x, 565.  
 Mirage, xi, 565; illustrations, 566, 568, 569.  
 Miranzai expedition, xvi, 376.  
 Miribel, Marie F., obit., xviii, 583.  
 Mirsky, Leon, iv, 777.  
 Miryachit, ix, 554.  
 Mirza Ataula Khan, x, 12.  
 Missionaries, civil relations of, vi, 566, 768; case of Rev. G. Brown, *ibid.*; starved to death, viii, 695; in the Soudan, 695; in China, x, 169; massacre of French, in Tonquin, x, 31; expelled from the Caroline Islands, xii, 741; massacre of, in Egypt, xi, 312; doctrinal tests for, xii, 148; outrage on, xvii, 744.  
 Missions, Foreign, i, 559; in Denmark, iv, 312; xiv, 520, 521; American Board of, xiv, 180; London Society, xiv, 181; International Conference of, xiii, 560. See also the articles on the Re-



- ligious denominations. See under titles of Churches.
- Mississippi, statistics, State officers, legislative proceedings, elections, etc., in each volume; view in, i, 562; proposed impeachment of Governor Ames, and his resignation, i, 561; constitutional amendments, i, 561; ii, 527; iii, 571; iv, 637; improvement in finances, i, 562; election of Governor Stone, ii, 527; murder of J. W. Gully, and mob attack on Judge Chisolm, 528; organization for suppression of lawlessness, 528; free-school system, iii, 569; xi, 571; health precautions, iii, 570; cause of disturbances in the southwest, 570; Confederate archives, 571; Vicksburg Landing threatened by sandbars, 571; railroads, 572; v, 527; x, 603; convention of fruit-growers and railroad men, iii, 573; natural features of the State, 574; prevalence of yellow fever, 575; need of a constitutional convention, iv, 632; v, 528; cotton-industry, iv, 633; negro-exodus, 634; xi, 571; protection from inundation, iv, 635; insurance laws, 636; acts regarding rights of women, 636; the faculty of the University on spelling reform, 637; invention for converting seed-cotton into yarn, 638; revised code, v, 527; census returns, 529; vi, 599; public lands, vi, 597; xii, 514; election of Governor Lowry, vi, 600; re-election, x, 604; education, vii, 561; ix, 529; xii, 514; manufactures, vii, 563; viii, 545; re-election of Senator Lamar, vii, 564; disputed congressional election, 564; re-election of Senators George and Walthall, xi, 570; local-option act, 570; levees, xii, 514; population, xv, 557, and xvi, 532; constitutional convention, xv, 559; the new constitution, xvii, 471.
- Mississippi River, celebration of La Salle's discovery, vii, 486; source of, x, 399.
- Mississippi River Improvement, i, 634; ii, 279; iii, 502; iv, 344, 635; v, 530; vi, 600, 610; deepening of the mouth of, xii, 229.
- Missouri, statistics, State government, legislative proceedings, elections, etc., in each volume; view in, i, 567; election of Governor Phelps, i, 567; bonds declared void, 568; census, ii, 528; strike, 530; alleged irregularities in State Treasurer's office, iii, 575; iv, 641; v, 538; proposed constitutional amendment, iii, 579; iv, 639, 643; viii, 546; x, 604; xi, 576; railroads, iii, 579; rat-bounty law, iv, 639; bill to establish the whipping-post, 639; tiff, or baryta, used for paint, 639; inadequacy of State revenues, 640; immigration bureau, 641; v, 539; insurance law, iv, 642; fish-bill, 642; temperance movement, 642; ix, 532; defaulting counties, cities, and towns, iv, 643; Cottey-tax law, 644; inability for railroad subsidy bonds, v, 540; election of Governor Crittenden, 241; improvement of rivers, vi, 610; local indebtedness, vii, 564; State claims, 565; notorious band of robbers, 567; election of Governor Marmaduke, ix, 532; re-election of Senator Vest, x, 604; high-license, xi, 573; re-election of Senator Cockrell, xii, 515; the Bald-Knobbers, 516; local option, 516; population, xv, 562; geological survey, xvi, 535; government lands, xviii, 499; sale of vagrants in, 499.
- Missouri River, convention on improvement of, vi, 610; xvi, 801.
- Mistassini Lake, ix, 349, 350; x, 399.
- Misti Arequipa, volcano of, illustration, i, 661.
- Mitchell, A., obit., xii, 599.
- Mitchell, C. L. M., obit., xv, 655.
- Mitchell, C. W., x, 365.
- Mitchell, Lucy M., sketch, xiii, 646.
- Mitchell, Maria, sketch and port., xiv, 641.
- Mitchell, S. Weir, xii, 679.
- Mitchell, Sir W., obit., iii, 659.
- Mitchell, William, obit., xi, 692.
- Mitchelstown, riot at, xii, 341.
- Mivart, St. George, quoted, xiii, 7.
- Mizner, L. B., xv, 412, 414.
- Mizon, exploration of, vii, 336.
- Mlongo Mlako, King, portrait of, ix, 170.
- Moab, survey of, ix, 27.
- Moak, N. C., obit., xvii, 560.
- Moberly, Dr., Bishop of Salisbury, death of, x, 21.
- Mobile, Ala., charter repealed, iv, 20; debt of, v, 12; in the war of the Rebellion, x, 431; xiii, 167.
- Möbius, Prof., observations of, vi, 712, 714.
- Mobs, crimes by, in Kentucky, iii, 473; in Louisiana, iii, 501; in Mississippi, iii, 570; in Alabama, xviii, 7.
- Modigliani, E., explorations of, xi, 382.
- Modulator, illustration, ix, 549.
- Moeller, Louis, x, 361.
- Moen, P. L., obit., xvi, 642.
- Moeris Lake, xvii, 14; monuments, xiii, 29.
- Moewe, Wilhelm, obit., xi, 722.
- Moffat, J. C., obit., xv, 655.
- Moffat, Robert, obit., viii, 602.
- Mohammed Sultan Pasha, obit., ix, 619.
- Mohammed Taha, viii, 299.
- Mohammed Tewfik, proclaimed Khedive, iv, 333; sketch, 335; vii, 233.
- Mohammedanism, iii, 581; iv, 647; v, 541; reported danger to, ii, 5; institutions of, x, 316. See also Islam, vi, 440.
- Mohammedans, races of, in Turkey, i, 571; supposed movement to excite discontent among, v, 689; excitement of, in Turkey, vii, 804; treatment of, in China, x, 174; xiii, 567.
- Mohl, Julius von, sketch, i, 568.
- Mohr, Eduard, explorations of, i, 331; death of, ii, 320.
- Moigno, Abbé, obit., ix, 619.
- Moissan, H., experiments by, xii, 107.
- Moknawcweo, ix, 389.
- Molbech, C. K. F., sketch, xiii, 665.
- Moleschott, Jacob, obit., xviii, 584.
- Molesworth, W. N., obit., ii, 607.
- Molesworth, W. N., obit., xv, 684.
- Moleva, E., researches of, viii, 526.
- Molière, Dr., ix, 747.
- Moline, xv, 137.
- Molino del Rey, battle of, x, 421.
- Molisch, Dr. Hans, xii, 110.
- Mollenda, experiments, viii, 112.
- Mollendorf, Herr, x, 174, 266.
- Möller, Axel, medal to, vi, 40.
- Moltke, Helmuth K. B., on war, vii, 716; obit. and port., xvi, 535.
- Momotombo, volcano of, eruption, xi, 653.
- Monaco, Prince, sketch, xiv, 666.
- Monahan, J. H., obit., iii, 659.
- Monal, Mount, ix, 544.
- Monastery, first, in Scotland since the Reformation, i, 706.
- Monastic Association Bill, in Austria, i, 57.
- Monastic Order, in the Anglican Church, ii, 22.
- Moncasi, Juan Oliva y, iv, 822.
- Moncrieff, Scott, x, 307, 319.
- Moncton, xiv, 154.
- Monell, C. L., obit., i, 621.
- Monetary Congress, International, iii, 314; conferences, vi, 60.
- Monetary Union, Latin, x, 379.
- Monetite, vii, 88.
- Money, xvii, 275.
- Money of Yap Islands, the, x, 139.
- Money-Bills, definition of, iii, 523.
- Money-Market, the. See Finances and Financial Review.
- Money-Orders, xii, 637; international, xiv, 230.
- Mongolia, exploration in, xi, 377; disturbances in, xvii, 93.
- Mongredien, A., obit., xiii, 665.
- Monite, vii, 88.
- Monitor, the original, xiv, 298.
- Monmouth Monument, x, 362.
- Monnier, H., obit., ii, 607.
- Monoliths, perforated, xiii, 28.
- Monrad, Ditlev G., obit., xii, 634.
- Monro, H. A. J., obit., x, 665.
- Monroe Doctrine, vii, 813; x, 431, 436. See also Panama Canal; in Africa, a, ix, 363.
- Monroe, J. A., obit., xvi, 643.
- Monselet, Charles, sketch, xiii, 666.
- Montague, C. H., sketch, xiv, 642.
- Montague, Henry J., obit., iii, 641.
- Montana, statistics, etc., ii, 531; viii, 547; ix, 533; x, 604; xi, 576; xii, 517; Mormons in, viii, 548; Indians, viii, 548; ix, 533; xi, 577; constitutional convention, ix, 534; tax-exemption, 536; land-surveys, xi, 577; drought, 576; gag-laws, xii, 517; admitted as a State, xiv, 569; constitutional convention, 569; population, xv, 565; mineral lands and railroads, xvi, 540; State lands, xviii, 502.
- Montano, Dr., explorations by, vi, 330.
- Mont Cenis railway, ill., i, 422.
- Mont de Piété, proposal concerning, ix, 344.
- Montefiore, Sir Moses Haim, obit. and portrait, x, 606.

- Monteith, J., obit., xv, 655.  
 Montenegro, ii, 532; iii, 586; iv, 468; v, 542; viii, 548; revolts in, viii, 549; map, i, 754; articles on, in the Berlin Treaty, iii, 257; ix, 536; forts built in, ix, 537; frontier of, 764; boundary, xii, 774; xiii, 569; xiv, 572.  
 Monterey, battle of, x, 421.  
 Montero, Gen., vi, 738; viii, 64.  
 Montevideo Breakwater, x, 772.  
 Montgomery, capitol at, illustration, ii, 12; xiii, 167.  
 Montgomery, H. C., obit., iii, 659.  
 Montpellier, xiii, 168; xvii, 114.  
 Montpensier, Due de, obit., xv, 684.  
 Montreal, carnival and ice-palace at, ix, 676; growth of, xii, 124; art exhibition at, 280; illustrations, iii, 248; xii, 131; charter remodeled, xiv, 723.  
 Monts, Count, sketch, xiv, 666.  
 Montsioa, ix, 112, 113, 114; x, 85, 87.  
 Montizambert, Col., x, 125 *et seq.*  
 Monuments, preservation, xiii, 24; in New York city, xviii, 527.  
 Moody, Granville, obit., xii, 599.  
 Moon, the crater Plato, viii, 21; diameter of, viii, 21; heat of, xi, 55; recent observation and study of, 578; illustrations, 579, 581, 584, 586, 587, 588; influence of, on weather, xii, 487; xvii, 36; xviii, 42.  
 Moore, Albert, obit., xviii, 534.  
 Moore, B. F., obit., iii, 641.  
 Moore, D. D. T., obit., xvii, 560.  
 Moore, George, obit., i, 639.  
 Moore, G. H., obit., xvii, 560.  
 Moore, James S., obit., xvii, 560.  
 Moore, Joseph G., obit., i, 621.  
 Moore, Orren C., obit., xviii, 562.  
 Moore, S. P., sketch, xiv, 642.  
 Moore, T., invention by, vi, 95.  
 Moore, Tredwell, obit., i, 621.  
 Moore-Greenhow Case, the, x, 272.  
 Mora, M., ix, 246.  
 Moraine, terminal, of the second glacial epoch, x, 404.  
 Moran, Archbishop, x, 455.  
 Moran, Benjamin, obit., xi, 692.  
 Moran, Percy, xi, 346.  
 Moravia, Socialist riot in, x, 72.  
 Moravians, i, 569; ii, 532; iii, 587; iv, 649; vi, 611; ix, 537; xiii, 570; xiv, 572; house of the sisterhood, 573.  
 Morazan, harbor of, xiv, 409.  
 Mordecai, B., obit., xviii, 562.  
 Morehouse, A. P., obit., xvi, 643.  
 Morelli, Giovanni, obit., xvi, 678.  
 Moreno, in Patagonia, ii, 335.  
 Moreno, J. I., obit., ix, 620.  
 Moresby, Sir F., obit., ii, 607.  
 Moresnelt, partition of, xv, 70.  
 Morey, F., obit., xv, 656.  
 Morey Letter, the, x, 576.  
 Morford, J. C., sketch, xiii, 646.  
 Morgan, Campbell de, obit., i, 639.  
 Morgan, D. H., statue of, vi, 815.  
 Morgan, E. D., sketch, viii, 552.  
 Morgan, G. D., obit., xvi, 643.  
 Morgan, G. W., obit., xviii, 562.  
 Morgan, G. W., obit., xvii, 561.  
 Morgan, J., nominated, xiii, 847.  
 Morgan, J. S., obit. and port., xv, 656.  
 Morgan, Lewis H., sketch, vi, 613.  
 Morgan, Maria, obit., xvii, 561.  
 Morgan, Mary J., art collection of, xi, 347.  
 Morgan, M. S., obit., xv, 656.  
 Morgan, W. F., sketch, xiii, 646.  
 Moriarty, Bishop D., obit., ii, 607.  
 Moriarty, Dr., obit., xii, 718.  
 Morier, D., obit., ii, 607.  
 Morison, J. C., sketch, xiii, 666.  
 Morley, E. W., xii, 488.  
 Morley, Samuel, obit., x, 723.  
 Morley, Thomas, obit., xii, 599.  
 Mormonism, xiv, 415, 817; xv, 21, 263, 424; church property, xvi, 853; xvii, 773.  
 Mormons, the, emigration of, iv, 837; President Hayes on, v, 642; missions of, vi, 869; monogamy, vi, 860; viii, 548; in Mexico, x, 590; in Arizona, ix, 41; x, 42, 43; in Idaho, ix, 400; xii, 373; xviii, 396, 536. See Polygamy.  
 Mormon temple, the first, xviii, 745; the new, 746.  
 Morocco, i, 569; v, 545; persecution of Jews in, 546; trade of, viii, 386; ix, 339; xiii, 571; xiv, 574; xv, 567; xvi, 541; xvii, 477.  
 Morocco, city of, illustration, i, 570.  
 Moroko, S., Chief, ix, 115; x, 84.  
 Morot, Aimé, x, 363.  
 Morphine, laetate of, xi, 291.  
 Morphy, Paul, obit., ix, 610.  
 Morrill, Anson P., obit., xii, 599.  
 Morrill, Lot M., sketches, i, 571; viii, 553.  
 Morris, Charles D., obit., xi, 692.  
 Morris, E., obit., xvi, 643.  
 Morris, J., experiments, viii, 524.  
 Morris, L. B., nominated, xiii, 240.  
 Morris, Philip R., x, 365.  
 Morris, W., designs of, viii, 616.  
 Morrison, John I., obit., vii, 640.  
 Morrison, M. J., observations by, xi, 540.  
 Morrison, Piteairn, obit., xii, 600.  
 Morrison, Robert F., obit., xii, 600.  
 Morrison, W. R., tariff bill, ix, 203.  
 Morrissey, John, obit., iii, 641.  
 Morrow, H. A., obit., xvi, 643.  
 Morse, Charles W., obit., xii, 600.  
 Morse, E. S., discovery by, vi, 453.  
 Morse, Judge, opinion by, x, 325.  
 Morse, Justinian, invention by, x, 614, 615.  
 Morse, Nathan B., obit., xi, 692.  
 Mortara, Edgar, abduction of, x, 606.  
 Mortemart, René de Rochehouart, Due de, obit., xviii, 584.  
 Mortgages, farm, xv, 552.  
 Morton, Prof., observations by, iii, 34.  
 Morton, John P., sketch, xiv, 642.  
 Morton, Levi Parsons, sketch and port., xii, 576.  
 Morton, Louis M., obit., xviii, 563.  
 Morton, M., obit., xvi, 643.  
 Morton, Oliver P., sketch, ii, 533.  
 Mosaics, Athenian, xi, 34.  
 Moseow, illustrations, ii, 687.  
 Moseow, Idaho, xvi, 161.  
 Moseley, Henry N., obit., xvi, 678.  
 Mosenthal, S. H., obit., ii, 607.  
 Moser, H., xi, 376.  
 Moser, J., experiments, vi, 257.  
 Moses, monuments of the time of, vii, 258.  
 Moses, Chief Justice, obit., ii, 585.  
 Moschetto, Chief, i, 89.  
 Mosler, Henry, prize to, x, 367.  
 Mosques, illustrations of; of Mehemet Ali, i, 247; ruined, 247; grand, of Ispahan, 660.  
 Mosquito territory, the, xiv, 610.  
 Moss, J. C., obit., xvii, 561.  
 Moss, L., observations, iv, 53.  
 Moss, Dr., experiments, xii, 676.  
 Motors, experiments in, i, 515, 516.  
 Mott, A. B., sketch, xiv, 642.  
 Mott, A. J., observations, viii, 26.  
 Mott, H. A., experiments by, iii, 86; vii, 663.  
 Mott, Lueretia, sketch, v, 547.  
 Motte, Henry Paul, xi, 343.  
 Motte, Janvier de la, v, 285.  
 Mouchot, solar boiler of, iii, 722; experiments by, vi, 251.  
 Moufang, C., obit., xv, 684.  
 Mougél Bey, obit., xv, 684.  
 Mould, Jacob Wray, obit., xi, 692.  
 Moule, Rev. Mr., ix, 722.  
 Moulton, C. W., sketch, xiii, 646.  
 Mound-builders, funeral rights of certain, xii, 16; works, xiii, 22, 23; xiv, 17; xvi, 12; civilization of, xvii, 11.  
 Mound of the statue, the, x, 35.  
 Mounds, exploration of. See Archaeology, illustration, ix, 15.  
 Mountain railways—Mts. Washington, Rigi, Pilatus, xii, 258; illustration, view of Mont Cenis, i, 422; xiv, 295.  
 Mountains, formation of, illustrations, iv, 380, 381, 382.  
 Mountains, of Central Asia, ii, 325, 326; iii, 359, 360; iv, 399, 400; in Africa, ii, 328; altitude of high, vi, 332; exploration, ix, 538; highest, vi, 322; ix, 349, 543; formation of, see Formation of Mountains.  
 Mountain sickness, ix, 541, 542, 543, 544.  
 Mount Brace, highest point in Connecticut, ii, 227.  
 Mount Chester A. Arthur, ix, 34.  
 Mount Hood, xvii, 613.  
 Mount Nanda Devi, ix, 543.  
 Mount Owen Stanley, xii, 312.  
 Mountpleasant, Caroline, obit., xvii, 561.  
 Mount Ptoom, temple at, x, 87.  
 Mount Schoda, xii, 313.  
 Mount-Temple, W. F. Cowper-Temple, sketch, xiii, 666.  
 Mount Vernon, illustration, ii, 759.  
 Mount Vernon, N. Y., xvii, 115.  
 Mount Wollaston, lost whaler, vi, 323.  
 Mount Yule, xii, 312.  
 Moustier, explorations by, v, 290.  
 Mowbray, invention by, x, 345.  
 Mowbray, G. W., obit., xvi, 644.  
 Mowett, James A., obit., i, 621.  
 Moya, Gen. C. N. de, xii, 733.  
 Moyano, Lieut. C., xii, 315.  
 Moynahan, C., obit., iv, 694.  
 Mozafer-ed-Din, Ameer of Bokhara, x, 98; obit., x, 665.  
 Mozley, J. B., obit., iii, 659.  
 Mozley, Thomas, obit., xviii, 584.  
 Msiri, Chief, x, 393, 394.  
 Mtesa, Emperor of Uganda, obit., viii, 602; his conversion through Stanley and his death, x, 316.  
 Muhlenberg, Rev. W. A., sketch, ii, 535.  
 Muhlenberg centenary, the, xii, 450; taxes, xviii, 425.



- Muir, Pattison, on the nature of the elements, iii, 91.  
 Muirhead, J., obit., x, 665.  
 Mukanes, "high places," ix, 27.  
 Mukhtar Pasha, sketch, ii, 535; iv, 649.  
 Mulder, G. J., obit., v, 601.  
 Mulford, Elisha, obit., x, 653.  
 Mulford, J. L., sketch, xiii, 647.  
 Mulford, P., obit., xvi, 644.  
 Mullaney, P. J., obit., xviii, 563.  
 Mullany, J. R. M., obit., xii, 600.  
 Mulledy, Joseph, death of, v, 659.  
 Müller, C. L., obit., xvii, 600.  
 Müller, J., obit., iii, 659.  
 Müller, John F., obit., xi, 723.  
 Müller, Karl Ottfried, xii, 22.  
 Müller, R., xii, 492.  
 Mulready, Mr., xi, 345.  
 Mumford, Thomas J., obit., ii, 585.  
 Mummies, xi, 29; discovery of, vii, 261; xi, 32.  
 Muncie, xiii, 168.  
 Municipalities, indebtedness of, iii, 680, 685, 772; vi, 832; liability of, for damages in riots, iv, 769; New Jersey laws on, v, 562; Florida act on dissolution of, vi, 297.  
 Munipore, Chunder Kirtce Sing, obit., xi, 723.  
 Munk, experiments by, ix, 653.  
 Munkacsy, Mihail, x, 359, 367; xi, 344; xii, 279.  
 Munster, Count, x, 419.  
 Munster, bank of, failure, x, 455.  
 Munster, William F., obit., ii, 607.  
 Muntz, M. A., experiments by, iii, 83; vii, 83; viii, 120; x, 154.  
 Munzinger Bey, i, 3; ii, 2.  
 Murad V (Effendi), attempt to bar from succession, i, 2; sketch, i, 774.  
 Murat, Prince, obit., iii, 659.  
 Murat, Princess, obit., iv, 701.  
 Murchison, C., sketch, iv, 650.  
 Murchison letter, the, xiii, 269.  
 Murdock, J. E., obit., xviii, 563.  
 Murdock, S. K., obit., xvi, 644.  
 Murghab River, view on, x, 17; cave-dwellings on, 38.  
 Murillo, sale of pictures by, x, 361.  
 Murphy, Lady B., obit., vi, 794.  
 Murphy, Col., x, 424.  
 Murphy, J. F., x, 367; xii, 279.  
 Murphy, John K., obit., i, 621.  
 Murray, A., obit., x, 665.  
 Murray, John, obit., xvii, 600.  
 Murska, Ilma di, sketch, xiv, 666.  
 Muscatine, Iowa, xviii, 165.  
 Muscles, observations on, vi, 753; xi, 761; muscular sense, the, xii, 672; muscular system, the, x, 695.  
 Muscular system, the, xiii, 694; xiv, 708; xv, 726; xvi, 741; xviii, 634.  
 Musgrave, Sir A., ix, 60; obit., xiii, 666.  
 Mushketof, explorations, iii, 359.  
 Mushrooms and Toadstools, xi, 590; illustrations, 590, 592, 593; bibliography of, 595.  
 Music, i, 571; Tonic Sol-fa, ix, 545; recent progress in, xi, 596; xii, 519; in 1888, xiii, 578; in 1889, xiv, 575; in 1890, xv, 568; instrumental, in churches, ix, 669. See Churches.  
 Music-boxes, x, 608; illustrations, 608, 609, 610.  
 Musical bed, a, x, 613.  
 Musical Instruments, automatic, x, 607; illustrations, 608, 609, 610, 612, 615, 616, 617, 619, 620, 621.  
 Musical sand, ix, 45; x, 608.  
 Musical telephone, iii, 588.  
 Musicians, eminent, xi, 596-602; lists of recent works of, 597-602; xii, 519-523.  
 Muskegon, Mich., xviii, 166.  
 Musk-ox, illustration, iii, 353.  
 Muspratt, James, obit., xi, 723.  
 Musset, Paul de, obit., v, 601.  
 Mussey, R. D., obit., xvii, 562.  
 Mutiny, Japanese, iii, 462.  
 Mutkuroff, Sara, obit., xvi, 678.  
 Muts-Hito, Mikado, iii, 460.  
 Muybridge, electro-photograph of, iii, 723.  
 Muzaffer-ed-Din, Prince of Persia, x, 686.  
 Muzzey, A. B., obit., xvii, 562.  
 Mycenæ, Schliemann's explorations in, i, 28; tombs at, xiii, 27.  
 Myer, Albert J., sketch, v, 548.  
 Myers, A. C., sketch, xiv, 642.  
 Myrtol, xi, 291.  
 Myopia. See Eye-sight, vi, 271.  
 Mysore, native rule in, vi, 422.  
 Nabonidus, cylinder of, ix, 18.  
 Nachtigal, G., ix, 364, 365; x, 119, 120, 122; his death, 395; obit., x, 665.  
 Nagas, of India, revolt of, iv, 494; v, 388.  
 Nagasaki, illustration, ii, 413.  
 Nageli, experiments by, ix, 36; x, 695.  
 Naglee, Henry Morris, obit., xi, 692.  
 Naib Salar, x, 9.  
 Nain Sing, explorations of, i, 329.  
 Nairne, C. M., obit., vii, 641.  
 Nakamura, Masanao, obit., xvi, 678.  
 Names of Places, xi, 382.  
 Nampa, image found at, xiv, 18.  
 Nance, Albinus, iii, 594.  
 Nanda Devi, Mt., ix, 543.  
 Naphtha, in Russia, viii, 701; xii, 307.  
 Naphtha motors, xii, 524; illustrations, 525.  
 Naphthalin, ix, 272.  
 Napier, Lord, obit., xv, 685.  
 Napier, Maj., x, 4.  
 Napoleon III, xi, 482.  
 Napoleon, Jerome, portrait, vii, 321; obit. and port., xvi, 679.  
 Naransin, ix, 18.  
 Nares, Sir G., voyage of, iii, 352.  
 Narragansett, loss of the, v, 580.  
 Narragansett Indians, tribal relations abolished, v, 654.  
 Narrey, Charles, obit., xvii, 600.  
 Nashua, N. H., xvi, 161.  
 Nashville, Tenn., xi, 175; battle, x, 428; illustration, i, 744.  
 Nasmyth, J., observations, iii, 35; obit., xv, 685.  
 Natal, colony of, v, 80; vii, 84; ix, 111; xiii, 122; xiv, 104; xv, 93; xvi, 103; xvii, 75; xviii, 122.  
 Natalie, expulsion of, xvi, 790.  
 Natches, Miss., xvii, 115.  
 Natchez-on-the-Hill, illustration, ii, 526.  
 National Academy of Design. See under Fine Arts.  
 National Academy of Sciences, xv, 572; xvi, 543; xvii, 480; xviii, 502.  
 National Bank taxation, x, 621.  
 National Banks, xii, 783.  
 National League for the Protection of American Institutions, xv, 579.  
 National league, proclamation of the, xii, 341.  
 National party, the, iii, 806.  
 National Quarantine, xviii, 217.  
 Nationalities, conflicts of, in Austria, v, 45, 46, 369; vi, 48.  
 Nations, intervention among. See Non-Intervention, vii, 618.  
 Natler, Heinrich, obit., xvii, 600.  
 Natural gas, in Kentucky, xviii, 425. See Gas.  
 Natural history, ill., vi, 409.  
 Natural selection, xii, 668.  
 Naturalization in Brazil, viii, 68.  
 Naturalization in United States, its validity, vi, 613; cases of Buzzi and others, vi, 613 *et seq.*; when fraudulent, vi, 615; President Grant on, i, 683; case of the Bersseliers, iv, 837.  
 Naturalized Americans, in Germany, iii, 245; rights of, x, 303.  
 Naucratis, x, 33; illustration, 34; xi, 27.  
 Nautilus, canoe, ill., ix, 108.  
 Navajos, the, xii, 545.  
 Naval apparatus, new, xv, 580.  
 Naval catastrophe in Samoa, xiv, 758.  
 Naval observatory, the, ix, 47.  
 Naval Ram, the, xviii, 283.  
 Naval station, new, xvi, 863.  
 Navarre, dissatisfaction in, i, 730.  
 Navassa, island of, ix, 394.  
 Navies—of Europe, vii, 568; German, viii, 392; Italian, viii, 449; English and French, ix, 370; illustrations, vii, 568, 569, 574, 579, 580; of United States, i, 574; ii, 536; iii, 589; vi, 619; vii, 582; President Arthur on, vi, 781; viii, 162; ix, 212.  
 Navigation, steering indicator for, i, 518; sounding instruments, i, 518; iii, 725; bathometer, i, 519; acts on, in Chili, iii, 95; in Germany, v, 319; the Narragansett and Seawanhaka disasters, v, 580; fees to Spanish consuls, viii, 157; unseaworthy vessels, 418; bureau of, ix, 103; signals, life-saving appliances, etc., see Collisions, viii, 136; of the United States, xvii, 158. See also Commerce and Navigation, viii, 145; xi, 195; of the United States, xviii, 779.  
 Navigators' Islands. See Samoa.  
 Naville, Edouard, ix, 19; x, 35, 36.  
 Navy of Colombia, v, 114.  
 Navy of the United States, xiii, 787; xiv, 805, 809; xvi, 545; xvii, 481.  
 Navy-Yards, United States, vii, 583.  
 Nazarenes, xiii, 584.  
 Neafie, A. J., obit., xvii, 562.  
 Neal, John, sketch, i, 574.  
 Neal, John R., sketch, xiv, 642.  
 Neale, S. A., obit., v, 594.  
 Neaves, Lord C., obit., i, 639.  
 Nebireh (Naucratis), x, 33.  
 Nebo, height of the ridge of, ix, 28.  
 Nebo of Borsippa, god of learning, ix, 18.  
 Nebobaladan, ix, 18.

- Nebraska, statistics, government, elections, legislative proceedings, etc., in each volume; growth as shown by census returns, i, 575; election of Gov. Garber, 578; railroad lands, 578; election of Senator Saunders, ii, 537; geological character, 538; soil and climate, 538, 539; election of Gov. Nance, iii, 594; re-election, v, 552; grasshoppers, iv, 653; case of removal of the Ponca Indians, 653, 654; need of militia, v, 552; vi, 622; fish-culture, v, 552; vii, 586; election of Senator Vau Wick, vi, 621; growth of population, 621; x, 623; election of Gov. Dawes, vii, 587; proposed constitutional amendment, 588; election of Senator Manderson, viii, 554; railroads, new counties, ix, 553; vi, 603; new capitol, xi, 603; election of Governor Thayer, xi, 604; election of Senator Paddock, xii, 526; population, xv, 582; contest over State officers, xvi, 559; impeachment of State officers, xviii, 504; depository law, 505.
- Nebraska City, xvii, 115; bridge at, xiii, 298.
- Nebuchadnezzar, inscriptions, ix, 18, 19.
- Nebula in Orion, xiv, 50; in Andromeda, xiv, 51; xv, 42.
- Nebulae, i, 50; star changed to, ii, 48; origin of, iii, 38; discovery of planetary, vii, 41; new, x, 53; xi, 56; xvi, 53.
- Nebular line, xvi, 51.
- Nebly Mende, mound of, ix, 28.
- Necropolis, at Carmona, xii, 23.
- Needham, E. P., invention by, x, 617; sketch, xiv, 642.
- Negrete, Gen., iv, 615.
- Négrier, Gen., x, 24 *et seq.*
- Negroes, admitted to the bar in California, iii, 71; trial of, iii, 825; intimidation in Arkansas, iv, 40; intellectual status of, iv, 41; as jurors, iv, 845, 847; v, 424, 703; condition in Louisiana, v, 481; university for, v, 484; progress of, v, 595; taxes and schools of, in Georgia, viii, 389; conventions of, iv, 45; vii, 448, 721; viii, 439; votes of, in presbytery, vii, 702; civil rights of, vii, 459; viii, 129; marriage with whites, see Marriage; exodus of, see Exodus, iv, 354; civil rights of, in New Jersey, ix, 571; property of, at the South, x, 411; education of, in Virginia, x, 778; emigrations of, xi, 571.
- Negus, the, xi, 1; xii, 1.
- Negus, Johannis, killed, xiv, 1.
- Neher, Michael, sketch, i, 579.
- Neill, Edward D., obit., xviii, 563.
- Neilson, Joseph, sketch, xiii, 647.
- Nelson, Dr., xii, 101.
- Nelson, H. A., obit., xvi, 644.
- Nelson Mound in North Carolina, illustration, ix, 15.
- Nepaul, Chinese influence in, iv, 143; conspiracy in, vii, 415; insurrection in, x, 497.
- Nepokoitchitzky, A. A., sketch, ii, 539.
- Neptune, xiv, 46.
- Neruda, Johann, obit., xvi, 680.
- Nerve-force, transmission of, x, 689; theories of, xii, 671.
- Nerves, degeneration of, xii, 671; action of alcohol on, 672.
- Nervous diseases, ix, 554.
- Nervous system, the, viii, 634; ix, 653, 749; x, 689; xi, 754; xii, 670; xiii, 689; xiv, 703; xv, 720; xvi, 738; xvii, 648.
- Neolithic polishing stones, at Nemours, xii, 24.
- Nepaul, insurrection at, x, 497; xii, 383.
- Nephrotomy, viii, 751.
- Neptune, the, x, 134.
- Nerses, ix, 764; sketch, 280; obit., ix, 620.
- Nervous system, xviii, 632.
- Nesselrode, Count, x, 1.
- Nessler, Victor, xii, 521.
- Nesterowsky, M., ix, 654.
- Netanebo II, x, 36.
- Netherlands, the, government, statistics, legislative proceedings, etc., in every volume; views in, i, 583; ii, 542; contest over military bills, i, 581, 582; cabinet crisis, 581, 582; adjustment of difference with Venezuela, 582; appointment of Beyen as war minister, 582; electoral laws, 582, 583; vi, 626; vii, 557; elementary education and religious instruction, i, 583; ii, 542; iii, 597; vii, 590; opening of the North Sea ship-canal to Amsterdam, i, 583; abolition of the annual kirmess or fair, 584; six hundredth anniversary of Amsterdam, 584; dissatisfaction with the Crown Prince, 584; the war in Acheen, see Acheen, War in; new cabinet, M. Kappeyne, chief, ii, 542; new cabinet, iv, 657; marriage of the King, 657; new penal code, v, 555; vi, 627; statue of Spinoza unveiled, v, 555; increase of revenues, vi, 625; conference for regulation of fisheries, 625; honors to Gen. van der Heyden for success in Acheen, 625; consequences of the silver crisis, 626; ix, 560; sympathy with the Transvaal rebellion, vi, 626; claims in Borneo, 626; resignation of Minister Vissering and other ministers, 626; new army law, 627; canal improvement, 627; vii, 557; question of exacting oaths from free-thinkers, vi, 627; serfdom in Java, vii, 589; cabinet crisis, viii, 557; new loan and fishery treaty, 557; question of revision of the constitution, 557; the colonies, ix, 556; affair of the crew of the English ship Nisero, held captive in Acheen, 558; x, 626; death of the Crown Prince, Alexander, ix, 559, 614; the succession to the throne, 559; new loan, bill to reorganize the State lottery, 559, 560; socialist demonstrations, x, 625; riots in Amsterdam, xi, 607; xii, 529; dissolution of the chamber and new states-general, xi, 606; crisis in the East Indian colonies, 608; extension of the franchise, xii, 529; claims to New Guinea, x, 678, 679; taxation reforms, xvii, 487.
- Nettleship, Henry, obit., xviii, 584.
- Nettleship, R. L., obit., xvii, 601.
- Net-making, ix, 560.
- Neumann, G. A., obit., xi, 693.
- Neuralgia, remedy for, x, 300.
- Neuville, Alphonse de, obit., x, 665; pictures by, xi, 344; xii, 279.
- Nevada, statistics, elections, government, mining, etc., in every volume; Eureka and Richmond mines, ii, 544; work of the fish commissioner, iii, 601; railroad extortion, 601; iv, 657; disastrous flood, iii, 601; completion of the Sutro Tunnel, iv, 658; the nut-pine, 658; Nevada Central Railroad opened, v, 556; Bodie Railroad, vi, 629; depreciation of property, vi, 627; mica deposits, 629; constitutional amendments, ix, 563; xi, 609; xii, 531; agriculture and grazing, 564; x, 627; xi, 611; xii, 532; Indians, x, 627; irrigation, xi, 609; xii, 532; railroads, xii, 531; State lands, 532; Comstock, Consolidated California, and other mines, 531; population, xv, 591; State lands, xvi, 566; constitutional amendments, xviii, 508.
- Nevin, A., obit., xv, 656.
- Nevin, John W., obit., xi, 693.
- Nevin, W. M., obit., xvii, 562.
- New, John H., obit., iv, 694.
- Newark, growth of, xi, 176.
- Newark, O., xv, 138.
- New Bedford, growth of, xi, 176; view of, iii, 524.
- Newberry, John Stoughton, ix, 46; obit., xii, 601.
- Newberry, J. S., xi, 538; obit. and port., xvii, 562.
- Newberry, Spencer B., ix, 476.
- New Britain, xiv, 154.
- Newbrough, John B., writes Oahspe, xvi, 602.
- New Brunswick, viii, 559; xi, 612; xii, 532; xiii, 592; xiv, 586; xv, 592; xvi, 566; xvii, 491; xviii, 509.
- New Brunswick, statistics, etc., viii, 559; education in, 559, 560; xi, 612; xii, 532; liquor-license law, 532.
- Newburg, celebration at, viii, 577.
- Newburgh, xiv, 155.
- Newburyport, view of, ii, 491; growth of, xvi, 161.
- New Caledonia, convicts in, ix, 342, 343; crime in, 57; xv, 335.
- New Church, the, vii, 650, x, 627. See New Jerusalem Church.
- Newcomb, S., ix, 49; xi, 48.
- Newcomb, W. W., obit., ii, 585.
- Newcomb, Wesley, obit., xvii, 563.
- Newdegate, Charles Newdegate, obit., xii, 634.
- Newell, M. A., obit., xviii, 563.
- Newfoundland, vii, 218; x, 628; religious troubles in, 629; xi, 613; fisheries, 614; French shore question, 406, 614, 615; xii, 533; aid for the unemployed in, xi, 613; xv, 593; xviii, 510; map of, xv, 594; xvi, 567; xvii, 493; xviii, 510.
- New Glasgow, N. S., xv, 138.
- New Guinea, explorations in, ii, 335; iii, 364, 365; iv, 408; xi,



- 381; xii, 311, 312; claims to, viii, 31; annexation of southern, x, 58; German and English claims in, ix, 365; xii, 647; massacre by natives, 48; xiv, 57. See also Papua.
- Newhall, James R., obit., xviii, 563.
- New Hampshire, statistics, elections, State officers, legislative proceedings, etc., in every volume; views in, i, 589, 591; constitutional amendments, i, 590, 591; raised map at the State-House, ii, 548; financial embarrassment at Dartmouth College, iii, 605; geological survey, 606; bill to abolish capital punishment, iv, 659; leather-board manufacture, 662; railroads, v, 560, 561; vi, 634; viii, 560; xi, 618; fish-culture, v, 561; xi, 621; xii, 536; question of senatorial election, vi, 631, 632; increase of divorces, viii, 562; longevity, statistics, ix, 568; boundary between Massachusetts and, xi, 622; granite, soapstone, mica, gold, silver, and copper, xi, 622; Constitutional Convention, xii, 534; population, xv, 597; election dispute, 600; State library, xvii, 497; mortgage indebtedness, xviii, 511.
- New Haven, growth of, xi, 176; illustration, ii, 222.
- New Hebrides, the, occupied by France, xi, 60; sketch of, xii, 537; map, 538; the French occupation, 539; convention between the British and French Governments, 539; xiii, 62.
- New Jersey, statistics, State government, elections, legislative proceedings, etc., in each volume; illustrations, i, 592, 593, 594; ii, 552; constitutional amendments, i, 592; iv, 663; v, 562; election of Senator McPherson, i, 595; legislation on courts, ii, 550; public institutions, 551, 552; v, 566, 567; vi, 637; xi, 626; convention of colored men, ii, 554; election of Gov. McClellan, 556; grants of lands under tide-water, 557; railroad tunnels, 557; earthquake, 557; education, iii, 612; v, 563; industrial, iv, 663; v, 564; convict-labor, iv, 665; Sunday laws, 667; improvement of militia, 668; fish-culture, 668; vii, 598; railroad question, iv, 669; geological survey, 670; special tax commission, v, 562; commission on general municipal laws, 562; food-adulteration, vi, 639; summer resorts, 638; taxation of corporations, ix, 569; x, 631; xii, 623; oyster-lands, ix, 571; child-labor, ix, 571; compulsory education act, the, xi, 625; election of Senator Blodgett, xii, 540; population, xv, 602; abandoned farms, xvi, 575; State survey, xvii, 500; judicial decisions, 501; xviii, 516.
- New Jerusalem Church, i, 595; ii, 557; iii, 614; viii, 564; x, 627; xi, 612; xii, 543; xiii, 599; xv, 605. See also New Church.
- New London, Conn., view of, iv, 298; growth of, xvi, 162.
- Newman, J. H., sketch and port., xv, 605.
- New Mexico, ii, 558; viii, 565; ix, 572; x, 632; xi, 628; xii, 545; view in, ii, 559; Indians in, ii, 558; viii, 566; raids of, x, 633; xi, 630; xii, 545; railroads, telegraphs, and newspapers, ii, 559; viii, 565; xii, 545; disorder in, iii, 31; land-system, viii, 566; resources, viii, 565; xi, 630; industries, ix, 572; x, 633; land-titles, x, 633; xi, 631; xii, 546; population, x, 634; cultivation of alfalfa, or California clover, xi, 631; droughts and floods, xi, 630; Indian relics in, ix, 17, x, 632; xiii, 600; xiv, 594; xv, 608; xvi, 575; xvii, 503; xviii, 517.
- New Norcia, mission, x, 66.
- New Orleans, debt of, v, 480; vii, 483; Exposition, ix, 573; illustrations, i, 483; ix, 575, 577; xiii, 168; massacre in, xvi, 833.
- Newport, Ky., growth of, xii, 125.
- Newport, R. L., view of, i, 701; old mill, ii, 675; xvi, 163.
- New processes, xviii, 136.
- Newson, T. M., obit., xviii, 563.
- New South Wales, x, 60, 63; xi, 61, 62; xiv, 53; xv, 46; xvi, 61; xvii, 43; xviii, 57. See under Australia.
- Newspapers, xi, 632; improvements in journalism, 633; places of publication, 633; subsidiary industries, 634; press associations, 635; Russian, ix, 708.
- New substances, xii, 670; xviii, 133.
- New Testament, revision, vi, 639; x, 95.
- Newton, Henry, obit., ii, 585.
- Newton, H. A., observations by, iii, 36, 37.
- Newton, Henry J., ix, 651.
- Newton, Mass., xv, 138.
- New York City, viii, 577; defalcations, 578; new aqueduct, 567, 579; ix, 590; x, 640; xii, 535; East River Bridge opening, viii, 580; amendment of charter, viii, 567; elevated railroads, viii, 568-580; new parks, 580; city politics, 581; bills on, vetoed, ii, 567; street-cleaning bill, vi, 651; removal of police commissioners, vi, 659; consolidation of elevated railroads, vi, 659; surface railroads, ix, 591; x, 641; trials of aldermen for taking bribes, xi, 649; xii, 555; power of appointment, x, 640; charges of malfeasance, ix, 588; x, 641; Statue of Liberty, 642; xi, 649; labor party, xi, 648; libraries, xi, 649, 651; illustrations, i, 604; ii, 565, 567, 569; xi, 650; illustrations of the work on the Croton Aqueduct, xii, 556, 557, 559, 560; recent growth of the city, xi, 177; xiii, 610; xiv, 601; xv, 615; xvi, 585; xvii, 517; xviii, 523.
- New York Harbor, improvements in, v, 250.
- New York State, statistics, government, elections, legislative proceedings, finances, etc., in every volume; views in, i, 599, 601, 602, 603, 604, 605; ii, 562, 563 565, 567, 569, 570; viii, 575; act for equalization of assessments, i, 597; concerning testimony of husbands and wives, 597; new Capitol, 599; iv, 671; vii, 614; viii, 575; constitutional amendments, 605; ii, 568; iv, 681; v, 576; vii, 601; burning of Brooklyn Theatre, i, 605; sketch of Gov. Robinson, 606; bill for sale of lateral canals, ii, 567; apportionment of members of legislature, iii, 614; iv, 671; codification of laws, iii, 615; question of maintaining canals, 616; vi, 651; pipe-line companies, iii, 618; married women may execute a power of attorney, 619; coal and railroad combination, 619; fish-culture, 620; woman-suffrage convention, 621; constitutionality of civil-damages act, 625; election of Senator Conkling, iv, 671; state charities, 672; v, 572; tramp act, iv, 675; pluralism, 675; award of damages for false imprisonment, 675; common-school system, 677; railroad freight discrimination, 678; revision of assessment laws, v, 569; vi, 650; taxation of stock of national banks, v, 570; Hudson River Tunnel, 580; factions of the Republican party, vi, 643; resignation of senators, 644; election of successors, 646; sketches of Lapham and Miller, 648; charge of bribery, 648; viii, 577; railroad commission, vi, 651; vii, 599; viii, 569; bill for preventing telegraph consolidation, vi, 651; emigration commission, vi, 651; anti-monopoly league, 652; elevated-railroad bills, vii, 600; liability for damages, vii, 616; five-cent-fare bill, viii, 568; investigations, vii, 602; election of Gov. Cleveland, 610; sketch and portrait, 611; political assessments, 614; viii, 566; decision on obligations of railroad companies, vii, 614; act regulating primary elections, viii, 567; civil-service, commissioners, 567; x, 639; law amended, ix, 637; Adirondack forests, viii, 576; ix, 582; x, 635; telegraph suits, viii, 576; Newburg celebration, 577; acts affecting municipal administration, ix, 580; x, 636; street railroads, ix, 581; prison labor, 582; x, 636; xi, 642; xii, 548; the Western House of Refuge, 582; David B. Hill, governor, 588; freedom-of-worship bill, x, 634; the census, 634; Niagara Falls reservation, 635; gas companies, 635; canal convention, xi, 643; capital punishment, xii, 548; insurance legislation, 552; population, xv, 611, and xvii, 511; State flower, xvi, 580; forests, 583, and xviii, 523; wealth, xvii, 505, and xviii, 519.
- New Westminster, xvi, 164.
- New Zealand, native question in, vii, 45; see Maoris, the; government, etc., 46; land system, 46; viii, 37; ix, 55, 60; x, 60, 66; xi, 65; mountains in, ix, 545; xii,

- 48; volcanic eruptions in, xi, 66; xiv, 608; xv, 49; xvi, 64; xvii, 46; xviii, 59.
- Nez Percés Indians, war with, ii, 39; removal of, ordered, iii, 28.
- Ngamiland, xv, 97; xvi, 104.
- Niagara Falls, scheme to transmit power from, vi, 253; xii, 561; xvii, 252; reservation, x, 635.
- Niagara Falls Park, commissioners appointed, viii, 570; restoration, x, 674; steps for a park on the Canadian side, x, 674; cantilever bridge, illustration, viii, 314.
- Niagara Falls, N. Y., xvii, 116.
- Nias, Island of, xi, 482.
- Niblo, William, obit., iii, 642.
- Nicaragua, statistics, government, etc., vi, 661; vii, 616; viii, 581; ix, 591; x, 642; xi, 653; xii, 562; difficulty with Germany, iii, 386; Mosquito territory, vi, 661; new constitution, 661; proposed canal, 662; vii, 618; viii, 581; ix, 592; x, 642; xi, 654; xii, 563; xiii, 614; xiv, 610; xv, 623; xvi, 594; xviii, 580; insurrections, vi, 663; volcano of Ometepe in eruption, vii, 582; proposed national railroad, ix, 592; lake steamer, xi, 653; eruption of Momotombo, 653; xiii, 613; xiv, 609; xv, 623; xvii, 526.
- Nice, water-works of, x, 331; observatory, floating dome of, xi, 58.
- Nicholas I., of Montenegro, sketch, ii, 571; iii, 586.
- Nicholas, Grand Duke, sketch, ii, 571; obit., xvi, 680.
- Nicholls, Francis T., sketch, i, 493; government headed by, ii, 455; nominated, xiii, 501.
- Nicholls, Rhoda H., xi, 346.
- Nichols, E. L., ix, 45.
- Nichols, Edward T., obit., xi, 693.
- Nichols, J. R., sketch, xiii, 647.
- Nichols, Samuel, obit., v, 594.
- Nichols, W. R., investigations by, v, 87; ix, 719; obit., xi, 693.
- Nicholson, A., obit., xviii, 589.
- Nicholson, James W. A., at Alexandria, vii, 248; obit., xii, 601.
- Nickel, magnetic properties of, i, 250; in iron-ores, ii, 501; determination of, ii, 502; ores in United States, vii, 532; processes with, viii, 522; in Nevada, ix, 476; steel, xii, 485; mines at Thio, 485; plating, x, 159; xii, 485; xv, 527; xviii, 484; in Canada, xviii, 267.
- Nicol, W. J., theory of, x, 149, 152.
- Nicolai, Baron, obit., xvi, 680.
- Nicolaides, R., ix, 654.
- Niederwald, plot, ix, 358.
- Niége, oleomargarine process of, vii, 661.
- Nieritz, K. G., sketch, i, 606.
- Niessl, G., observations, viii, 25.
- Nieuwenhuis, Domela, xi, 607; xii, 529.
- Nieuwerkerke, Comte de, obit., xvii, 601.
- Niger, the, exploration of, v, 290; trade on, x, 393.
- Nihilism in Russia, iii, 744; Melikoff's policy, vi, 795; methods, vi, 802; beginning, vii, 736; x, 718.
- Nihilists, iv, 681; disturbances by, iv, 776, 777; v, 662, 664; arrests and trial of, for the murder of the Czar, vi, 796; two sections of, vi, 797; proclamations of, vi, 798; attempt to assassinate Gen. Tcherevin, vi, 799; alleged plot of, in Switzerland, vi, 829; omitted from amnesty, viii, 706; arrests, viii, 709; ix, 711; in Russia, x, 718; trials, 719; conspiracies of, xiv, 753; expelled from Switzerland, 787. See Anarchism.
- Nikacheff, M., xii, 488.
- Nikolaieff, Col., x, 731.
- Nile, composition of waters, i, 99.
- Nile region, expedition to, xvii, 171.
- Nilson, S., discovery by, iv, 137; experiments, v, 87; viii, 117; x, 153; obit., viii, 603.
- Nina, Cardinal, obit., x, 713.
- Nisero affair, ix, 558.
- Nissel, Franz, obit., xviii, 584.
- Nitrate deposits in Chili, iii, 95; in Peru, iii, 688; vi, 276; viii, 124.
- Nitrate of soda, x, 164; whether contraband of war, 164.
- Nitric acid as a solvent, i, 98.
- Nitric-acid vapor, combustion in, xiv, 134.
- Nitric ferments, vi, 98.
- Nitrification, iii, 83; cause of, ix, 128, 157.
- Nitrites in water, test for, vii, 91; estimation of, ix, 123.
- Nitrogen, absorbed by plants, i, 92; quantitative estimation of, ix, 122, 127; x, 156; in the soil, 157; sources of, in vegetation, xii, 111.
- Nitro-glycerine, x, 344.
- Nitrous oxide, effects of, xii, 679.
- Nitzsch, K. W., obit., v, 601.
- Nixon, John T., sketch, xiv, 642.
- Noailles, P., obit., x, 666.
- Nobel, A., discovery by, iv, 131; invention, x, 344, 345.
- Noble, B. G., obit., xv, 656.
- Noble, John W., sketch and port., xiv, 804.
- Noble, Matthew, sketch, i, 607.
- Noble, Samuel, sketch, xiii, 647.
- Nöggerath, J., obit., ii, 607.
- Noire, Ludwig, sketch, xiv, 667.
- Noland defalcation, xv, 563; xvi, 535.
- Nollet and Van Malderen, invention by, iii, 275.
- No Mau's Land (Japan), ix, 416; (Africa), iv, 129; (Asia), x, 4, 6.
- Nominations, Presidential. See United States, vols. i, v, and ix.
- Nonconformists, use of title "Rev." by, i, 25; burial of, in parish church-yards, iii, 13.
- Non-intervention among nations, the principle of, vii, 618; science of international law, 618-622; responsibility of nations, 623; intervention when asked for, 625; when nationality is involved, 625; union of states, 626; cases of succession and religion, 627; the Roman question, 627.
- Norbury, R., obit., xi, 724.
- Nordenskiöld, explorations of, i, 328; iii, 354; iv, 411; viii, 28; in Greenland, 384; x, 398.
- Nordman, J., obit., xii, 365.
- Nordquist, explorations of, iv, 412.
- Norfolk, Va., growth of, xi, 178; illustration, ii, 262.
- Norman, Helen, obit., xvi, 644.
- Normanby, Marquis, iv, 56; obit., xv, 685.
- Norodom, King of Cambodia, ix, 339; x, 118.
- Norquay, John, x, 568, 569; sketch, xiv, 667.
- Norris, A. W., sketch, xiii, 647.
- Norris, experiments by, viii, 633.
- Norristown, growth of, xii, 126.
- North, farthest point reached in the, illustration, ix, 31.
- North Bay, Ontario, xvi, 164.
- North Borneo Company, the, vi, 329.
- North Island, eruption on, xi, 66.
- Northbrook Island, vii, 334.
- Northbrook, Lord, sketches, i, 406; v, 580; x, 60, 310.
- North Carolina, statistics, State officers, elections, legislative proceedings, etc., in each volume; election of Gov. Z. B. Vance, i, 607; constitutional amendments, 608; v, 586; xii, 564; new State University, 609; v, 584; vii, 632; State charities, i, 610; Senator Ransom elected, 611; Western North Carolina railroad, 611; iii, 628; v, 580; election regulations, ii, 572; State debt, 573; iii, 626; iv, 687; v, 583; vii, 630; sketch of Judge W. N. H. Smith, ii, 574; iii, 630; penitentiary system, iii, 626; railroads, 627; v, 580; State archives, iii, 630; conveyance of real estate, iv, 685; tramp act, 686; school legislation, 688; vi, 664; election of Gov. Vance to the office of senator, iv, 689; sketch of Lieut.-Gov. Jarvis, 690; fish-culture, 690; natural features of the State, 690, 691; swamp lands, v, 584; colored industrial fairs, 585; Swepson embezzlement case, 585; extradition, 585; re-election of Gov. Jarvis, 586; vote on prohibition, vi, 665, 666; colored convention, 667; Indians, 669; population by counties, 669; railroad bonds, vii, 632; celebration of Mecklenburg declaration of independence, 634; minerals, viii, 583; election of Gov. Scales, ix, 594; phosphates, xi, 656; oyster survey, 656; population, xv, 624, and xvi, 595; new seal of, xviii, 534.
- Northeote, Sir Stafford, portrait, x, 443; sketch, 448; illustration, suggesting the suspension of Parnell, vii, 204; ix, 371, 690.
- North Dakota, xiv, 612; population, xv, 626; prohibition, 628; land titles, xvi, 599; limitation of the Governor's authority, xviii, 5, 5.
- Northeast Passage, search for, iv, 411; Nordenskiöld's conclusions as to, iv, 415.
- Northen, Adolf, obit., i, 639.
- North, M., obit., xv, 685.
- North Sea Canal, x, 417.
- Northwest Passage, iii, 354, 355.
- Northwest Territories, xvii, 432; xviii, 536.
- Norton, Caroline. See Maxwell.
- Norton, C. B., obit., xvi, 644.
- Norton, G. S., obit., xvi, 645.
- Norton, G. W., sketch, xiv, 643.



- Norton, Julius S., port., xviii, 736.  
 Norton, W. A., obit., viii, 592.  
 Norway. See Sweden.  
 Norwich, xiv, 155.  
 Nourmahal, the, yacht, x, 793.  
 Nova Scotia, viii, 584; ix, 594; x, 643; xi, 657; education, viii, 585; financial depression, ix, 594; secession movement, xi, 657; xii, 565; resolutions regarding the union, 566; xiii, 619; xiv, 615; xv, 629; xvi, 600; xvii, 530; xviii, 536.  
 Novels, recent. See Literature, in every volume.  
 Novgorod, illustration, ii, 688.  
 Noxious insects and plant parasites, vi, 669.  
 Noyes, Amos C., obit., v, 594.  
 Noyes, E. F., obit., xv, 657.  
 Noyes, John H., obit., xi, 694.  
 Nubar Pasha, iv, 329, 330; vi, 287; ix, 285, 286, 292; x, 306; xii, 291.  
 Nubia, insurrection in, ix, 292.  
 Nuguor Island, x, 139.  
 Nulty, Bishop, x, 455.  
 Numismatic discovery, ii, 411.  
 Nuñez, Dr., sketch, viii, 138.  
 Nuñez, Gen. Rafael, vi, 113.  
 Nurses, trained, vi, 659.  
 Nussbaum, Isaac, obit., xviii, 564.  
 Nussbaum, J. N., experiments by, x, 692; obit., xv, 685.  
 Nussbaumer, observations by, vi, 400.  
 Nut-pine tree, utility of, iv, 658.  
 Nutrients, function of, viii, 343; proportions of, in foods, 348.  
 Nutrition, xiii, 694; xiv, 707.  
 Nutritive ingredients and values of the food we eat, vi, 670; comparative cost of, viii, 346.  
 Nutt, G. W. M., obit., vi, 686.  
 Nutt, H. C., obit., xvii, 563.  
 Nuttall, Zelia, xii, 16.  
 Nutting, N. W., sketch, xiv, 643.  
 Nyassaland, xv, 264; xvii, 244; xviii, 274.  
 Nye, James W., obit., i, 621.  
 Nyeshel, V. E., xii, 676.  
 Nyung, Yang, rebellion of, xi, 114.  
 Oahspe, xvi, 602.  
 Oakey, Emily S., obit., viii, 593.  
 Oakland, xii, 126.  
 Oakley, L. W., sketch, xiii, 647.  
 Oates, R. H., ix, 479.  
 Oath, the iron-clad, iv, 24; decisions on, iv, 24.  
 Oaths and affirmations in British Parliament, the Bradlaugh case, vi, 627; vii, 365; viii, 409; Cong. Union on, viii, 155.  
 Oaths, test, for jurors, iv, 293; decisions on, in Florida, 376.  
 Oatman, Dr. J. S., obit., i, 622.  
 Obbareach, King, x, 119.  
 Obeidullah, surrender and rescue of, vii, 804; obit., viii, 603.  
 O'Beirne, R. F., obit., xvi, 645.  
 Obelisks, ix, 595; illustration of the New York, 596; list of monoliths, 597-599; practical use of, 600; the crabs, 600; masonic symbols, 595.  
 Obituaries, American and Foreign, in every volume.  
 Obrecht, M., xii, 45.  
 O'Brien, William, xii, 336; imprisonment of, 339.  
 O'Brien, William S., obit., iii, 642.  
 Obligations of Contracts, vii, 648; case of Virginia bonds, 648; of Louisiana, 652; Supreme Court decisions, 653.  
 Obrenovitch, house of, vii, 739.  
 Observatories, xi, 57; xii, 39; new, xiii, 48.  
 Obstruction, resolution in Parliament on, v, 331. See Clôture, vii, 203, 208.  
 O'Callaghan, E. B., obit., v, 594.  
 Ocarina, ix, 625.  
 Occultations, x, 53.  
 Oceanica, French possessions in, xvii, 295.  
 Oehre, deposit of, in Tennessee, ix, 757.  
 O'Connell, Morgan, challenged by Disraeli, ii, 252.  
 O'Connor Don, the, bill of, in Parliament, iv, 453.  
 O'Connor, James, obit., xv, 657.  
 O'Connor, John, expelled from Ohio Legislature, iii, 666.  
 O'Connor, William D., sketch and port., xiv, 643.  
 O'Connor, Charles, obit. and portrait, ix, 626.  
 O'Connor, J. F. X., ix, 19.  
 Oetroi de mer, ix, 804.  
 Oculists, new drugs used by, ix, 271.  
 Odell, W., observations by, v, 36.  
 Odessa, illustration, ii, 689.  
 Odger, George, obit., ii, 607.  
 Odlin, Peter, obit., ii, 585.  
 O'Donnell, P., crime and trial of, viii, 416; diplomatic correspondence on, viii, 281.  
 O'Donovan, E., death of, viii, 301.  
 O'Dwyer, A. C., obit., ii, 608.  
 O'Dwyer, Dr. Joseph, x, 743.  
 Odyssey, altar mentioned in the, ix, 23.  
 Offenbach, J., obit., v, 601.  
 Office, qualifications for, x, 325.  
 Office-hunting, vi, 846, 847.  
 Officials, State, case of Missouri Treasurer, iv, 64; Nebraska Auditor, v, 549; New Jersey Treasurer, v, 566; county, payment of, by fees, vi, 205.  
 Officials, United States, alleged abuse of power by, iv, 18.  
 Ogden, xiii, 169.  
 Ogden, W. B., sketch, ii, 614.  
 Ogier, experiments by, vii, 89.  
 Ogilvie, R. A., obit., iv, 701.  
 Ogilvie, Mr., xii, 314.  
 Ogleshorpe Celebration, viii, 339.  
 Ogowé River, exploration of, iv, 401; vi, 328; vii, 336.  
 O'Hagan, Baron, obit., x, 666.  
 Oham, ix, 114.  
 Ohio, statistics, elections, government, legislative proceedings, etc., in each volume; views in, i, 647, 648; ii, 616, 619; repeal of Geghan law, i, 646; inauguration of Governor Hayes, 646; strikes and riots, 649; ii, 621; v, 605; ix, 630, 631; election of Governor West, ii, 621; re-districting, iii, 666; v, 607; constitutional amendments, iv, 703; x, 673; election of Governor Foster, iv, 705; re-election, vi, 702; of Senator Sherman, vi, 700; population by counties, 703; liquor legislation, vii, 657; viii, 607, 609; ix, 630; xi, 631; xii, 643; election of Governor Hoadley, 609; floods, ix, 630; Cincinnati riot, 630; election of Governor Foraker, x, 673; re-election, xii, 643; contested seats in the State legislature, x, 673; xiii, 731; population, xv, 693; decennial appraisement, xvi, 690.  
 Ohio River, flood in the, ix, 630.  
 Oil, a new, viii, 111; drying of, ix, 124.  
 Oil, calming waves with, experiments, vii, 660.  
 Oil-burner, improved, xii, 652.  
 Oil-cloths, floor, viii, 97.  
 Oil-fuel, xii, 651.  
 Oil-stoves, x, 386.  
 Oils, spectrum analysis of, x, 155; test for, x, 158.  
 Okechobee Lake, drainage of, viii, 309; xii, 287.  
 O'Keefe, Eugene, obit., v, 594.  
 O'Keefe, Mr., x, 139, 140.  
 Okefenokee Swamp, xvii, 306.  
 Oklahoma, xiv, 675; xv, 696; xvi, 693; xvii, 608; xviii, 591.  
 Oklahoma boomers, the, x, 762.  
 Oklahoma City, xviii, 167.  
 Oklohjo, I. D., sketch, ii, 621.  
 Okubo, assassination of, iii, 462.  
 Old Catholics, i, 649; ii, 621; iii, 669; iv, 704; v, 609; Archbishop of Canterbury on resolutions of, i, 22; abolition of priestly celibacy, iii, 669; communion in both kinds, iii, 670; recognition asked of Anglicans, iv, 32; relations with the Papacy, v, 609; history and doctrines of, and relations with the Church of England, xii, 644.  
 Olden, C. S., obit., i, 622.  
 Oldham, Thomas, obit., iii, 659.  
 Old Ironsides, history, vi, 620.  
 Olean, N. Y., xv, 139.  
 Oleomargarine, its manufacture, vii, 661; illustrations, 662, 663; ix, 2; New York law on, 664; xi, 232, 473; foreign demand for, ii, 112; tests for, vii, 89; new method of detection, x, 154.  
 Olin, Milo, sketch, xiv, 643.  
 Oliphant, L., sketch, xiii, 666.  
 Oliphant, Mrs. Laurence, obit., xi, 724.  
 Oliver, Dr. Charles A., xii, 672.  
 Ollier, Edmund, obit., xi, 724.  
 Olmstead, J. W., obit., xvi, 45.  
 Olney, Edward, obit., xii, 602.  
 Olney, Richard, sketch and port., xviii, 735.  
 O'Loughlen, Sir B., vii, 43.  
 O'Loughlen, Sir C., obit., ii, 608.  
 Olphert, Wybrants, obit., xvii, 501.  
 Olympia, Wash., xvi, 164.  
 Olzewski, experiments of, ix, 434; xii, 104.  
 Omaha, growth of, xi, 179.  
 O'Mahony, John, obit., ii, 585.  
 Omdurman, fall of, x, 319, 320.  
 Omer Pasha, obit., iv, 701.  
 Ometepe, volcano of, viii, 582.  
 Omolundro, J. B., obit., v, 594.  
 Onderdonk, H. G., obit., xi, 694.  
 O'Neal, Edward A., vii, 6.  
 O'Neill, E. C., experiments of, vii, 86.  
 O'Neill, H., x, 394.  
 O'Neill, J. A., obit., xvii, 561.

- Oneonta, N. Y., xv, 139.  
 Ontario, province of, viii, 609; ix, 264, 632; x, 673; xi, 732; xii, 644; xiii, 671; xiv, 677; xv, 698; xvii, 610; map of, xv, 698; xvi, 695; xviii, 593.  
 Opal, xviii, 644.  
 Opal-mines, in Mexico, xi, 556.  
 Opdyke, George, obit., v, 594.  
 Operas. See Music.  
 Opium, attempts to suppress the use of, ii, 131, 132; iii, 100; vi, 109; culture in China, iii, 100; in Persia, v, 623; ix, 647; Americans prohibited from traffic in, v, 704; monopoly in India, vii, 416; reduced trade in China, viii, 126; convention between China and England, x, 174; importation of, into the United States, xii, 200; legislation of, xv, 116; xvii, 349; smuggling, xviii, 598; traffic in India and China, vi, 703; vii, 666; x, 105.  
 Oppenheimer, S., xi, 50.  
 Oppolzer, Dr., ix, 53.  
 Opzoomer, Prof., obit., xvii, 601.  
 Oraksai, Gen., xii, 6.  
 Orange Free State, ix, 115; xiv, 108; xv, 93; xviii, 127.  
 Orange incorporation, xv, 263.  
 Orange, the last prince of, ix, 614.  
 Orange, N. J., xviii, 167.  
 Orangemen, in Newfoundland, x, 639.  
 Orchardson, W. Q., x, 359, 364; xi, 345; xii, 277.  
 Orchestration, x, 612.  
 Orchestrone, x, 619.  
 Orchilla weed, ix, 493.  
 Ord, E. O. C., sketch, viii, 611; service on the Rio Grande, ii, 513, 668; x, 429.  
 Ordega, M., ix, 339.  
 Order of Christ, the, x, 712.  
 Order of Corporate Reunion, ii, 21.  
 Order of Pius IX, the, x, 712.  
 Order of the Double Dragon, vii, 102.  
 Orders, religious, xviii, 660.  
 Orders, Redemptorist, xviii, 674.  
 Ordnance, improvements in, ii, 622; experiments with, v, 29; of various countries, vii, 576; small arms. See Rifles.  
 Ordish, Rowland Marsh, obit., xi, 724.  
 Ordway, Nehemiah G., vi, 202.  
 Oregon, statistics, State officers, legislative proceedings, etc., in each volume; election of Senator Grover, i, 651; sketch, 653; State University and Agricultural College, 651; ii, 627; xii, 646; disputed election of 1876, i, 652, 653; ii, 627; Columbia River canal, ii, 627; x, 676; discoveries of fossil remains, ii, 628; salmon fisheries, iii, 671; vii, 671; viii, 612; ix, 636; xii, 646; Indian outbreaks, iii, 673; election of Gov. Thayer, 675; of Senator Slater, 676; sketch, 676; property of married women, 676; Chinese immigration, 676; iv, 712; growth in trade and values, iv, 707, 708; woman suffrage, iv, 712; v, 611; vi, 704; defeated, ix, 635; projected railroad, 613; vi, 706; new channel in the Columbia, vi, 614; population of towns and cities, vi, 706; of counties, 707; election of Gov. Moody, vii, 668, 672; State lands, 670; constitutional amendments, xi, 734; xii, 647; Gov. Penoyer, xii, 645; population, xv, 698; judicial decisions, xvi, 698, and xvii, 612; industries, xvii, 611; mortgage indebtedness, xviii, 596; capitol, 597.  
 Orense, Marquis, obit., v, 602.  
 Ores, origin of, xi, 538.  
 Organ, C. P., nominated, xiii, 849.  
 Organic and inorganic bodies, ix, 808.  
 Organ worked by sunlight, x, 614.  
 Organista, x, 618.  
 Organs, pipe, reed, etc., x, 614.  
 OrguINETTE, x, 617.  
 O'Reilly, Henry, obit., xi, 694.  
 O'Reilly, J. B., obit., xv, 657.  
 O'Reilly, P. T., obit., xvii, 564.  
 Oriental churches, xvii, 615.  
 Orientalists, congress of, i, 711.  
 Oriental powder, x, 345.  
 Original Package Law, xv, 237, 470, 700.  
 Orinoco River, sounding rocks beside the, x, 607.  
 Orleans, Duke of, imprisoned, xv, 329.  
 Orleans princes, expulsion of the, from France, xi, 355.  
 Orloff, Prince, obit., x, 666.  
 Orpen, Sir R., obit., i, 639.  
 Orr, Charles A., obit., i, 639.  
 Orton, James, sketch, ii, 628; explorations, ii, 336.  
 Orton, William, obit., iii, 642.  
 Osborn, A. M., obit., xi, 694.  
 Osborne, Bernal, obit., vii, 647.  
 Osborne, Edward B., obit., xviii, 564.  
 Oscar II of Sweden, iii, 775; dissatisfaction with, x, 745.  
 Osgood, C., obit., xv, 657.  
 Osgood, J. R., obit., xvii, 564.  
 Osgood, Samuel, sketch, v, 614.  
 Osiris, vii, 260.  
 Osman Digman, ix, 292, 293, 295; x, 315, 318; xi, 312; xii, 244.  
 Osman Pasha, sketch, ii, 628.  
 Osman Reski Pasha, vi, 236.  
 Osmate of Potassium, xi, 291.  
 Osortasen, King, ix, 19.  
 Österbygd, colony of, x, 398.  
 Ostrich-farming in the United States, vii, 672.  
 O'Sullivan, W. H., obit., xii, 635.  
 Oswego, recent growth of, xi, 179.  
 Otsero, M. S., nominated, xiii, 601.  
 Otis, Charles G., obit., xviii, 564.  
 Ottawa, Ill., xviii, 169.  
 Ottawa, view of, xv, 260.  
 Otter, Admiral H. C., obit., i, 639.  
 Otter, Col., x, 126 *et seq.*  
 Otto, King of Bavaria, xi, 392.  
 Otto, Paul, obit., xviii, 584.  
 Ottumwa, Iowa, xv, 139.  
 Otuiti, giant images at, ix, 276.  
 Oude, Wadjid Ali Shah, obit., xii, 635.  
 Ouray, Chief, sketch, v, 615.  
 Ouray, Col., xv, 140.  
 Ouse, Roman bridge over, ix, 22.  
 Ouseley, F. A. G., sketch, xiv, 667.  
 Outerbridge, A. E., xii, 486.  
 Overbrook, Pa., Simpson house at, illustration, xii, 369.  
 Overheiser, J. C., obit., xvii, 564.  
 Owen, R., obit., xv, 657.  
 Owen, Sir R., obit., xvii, 601.  
 Owens, John G., obit., xviii, 564.  
 Owensborough, Ky., xvii, 117.  
 Oxender, Ashtor, obit., xvii, 601.  
 Oxford, Miss., xviii, 169.  
 Oxygen in the sun, xv, 39.  
 Oyster survey, xiii, 618; industry, xiv, 532; xvi, 495.  
 Pacific Islanders, armed, xiii, 64.  
 Packer, Harriet L., obit., xvii, 564.  
 Packer, J. B., obit., xvi, 645.  
 Paddock, B. H., obit., xvi, 645.  
 Paducah, Ky., xvii, 117.  
 Page, G. S., obit., xvii, 564.  
 Pahang, xvii, 326.  
 Pail, attachment for a, xvi, 707.  
 Paine, Ira, sketch, xiv, 643.  
 Paine, W. H., obit., xv, 657.  
 Painting. See Fine Arts.  
 Palatka, Fla., xviii, 170.  
 Palestine Exploration, xiii, 31.  
 Paley, F. A., sketch, xiii, 667.  
 Palgrave, W. G., sketch, xiii, 667.  
 Palizzi, Joseph, sketch, xiii, 667.  
 Pallen, M. A., obit., xv, 658.  
 Palloti, L., obit., xv, 686.  
 Palmer, C., obit., xii, 648.  
 Palmer, H. S., obit., xviii, 584.  
 Palmer, P. S., obit., xv, 658.  
 Palouse City, Wash., xvi, 165.  
 Pamirs, the, xviii, 3.  
 Panama Canal, the, xiii, 177, 354; xiv, 165, 221; xv, 151; xvi, 176; xvii, 122; xviii, 173; scandal, xviii, 319.  
 Pancrea, invention by, x, 346.  
 Panchastites, x, 153, 346.  
 Panda, King of the Zulus, iv, 853; cession to the British by, x, 137.  
 Panebianco, Cardinal, obit., x, 666, 713.  
 Pango-Pango, 731.  
 Panitza conspiracy, xv, 82.  
 Panics, financial, of the nineteenth century, xviii, 599.  
 Panofka, Heinrich, obit., xii, 635.  
 Panopolis, ix, 22.  
 Panslavists, sentence of a leader of, iii, 426; agitations of, viii, 705. See Slavs.  
 Pantanius, x, 121.  
 Pantelophone, the, vi, 258.  
 Pantopolite, x, 345.  
 Pantrizelle, Gen., xi, 45.  
 Pao-Tchao, Gen., x, 26.  
 Papacy, the, relations to Germany, i, 260, 680; ii, 659, 682; iii, 381; v, 639; vi, 346, 775, 792; vii, 357, 358, note, 724; viii, 395, 693; with Italy, i, 422, 703; ii, 408, 410, 677; iii, 736; vi, 450, 792; vii, 437, 724; viii, 692; with Austria, viii, 694; with Belgium, iii, 56; v, 54, 56; viii, 56, 693; with Russia, vii, 726; viii, 694; with Switzerland, ii, 682; viii, 694; with South American governments, i, 707; with France, iii, 343, 348; vi, 793; vii, 726; viii, 370; in United States, vi, 793; viii, 694; establishment of the hierarchy in Scotland, iii, 732; instructions to bishops in United States, iii, 737; the papal guarantees, ii, 408; viii, 454; see also the allocution, ii, 677, and Roman Question, vii, 627; negotiations, xi, 390. See also Roman Catholic Church.  
 Papal question, the, xiv, 469.



- Papal rescript, the, xiii, 394.  
 Paparrigopoulos, Constantine, obit., xvi, 680.  
 Pape, M., invention of, x, 616.  
 Paper blasting-powder, x, 346.  
 Paper, carbon, ix, 638.  
 Paper envelopes, bags, etc., xi, 734.  
 Paper Exposition, iii, 724.  
 Paper-hangings and wall-paper, viii, 615; ix, 247.  
 Paper-making in India, ix, 407.  
 Paper-pulp, new process, viii, 115.  
 Paphos, temple at, xiii, 27.  
 Papua, ix, 638; x, 678; map, 679; houses, 680; labor recruiting in, ix, 638; annexation of, ix, 639, 640; x, 400, 679; xii, 647.  
 Papuans, canoes of, illustration, ix, 116; houses, x, 680.  
 Parabuxinidine, x, 299.  
 Parachute, xvi, 76.  
 Paraguay, i, 654; iii, 677; vi, 724; vii, 673; viii, 617; ix, 640; x, 681; xi, 738; xii, 648; French and German colonization in, xii, 648, 649; German treaty, 648; xiii, 673; xiv, 680; xvii, 615; exploration in, xiv, 362; xv, 701; xvi, 699; xviii, 606.  
 Paraldehyde, x, 299.  
 Parallax, solar, xi, 48.  
 Parallax, stellar, xiv, 49.  
 Pardee, Ario, obit., xvii, 564.  
 Pardee, Dwight Whitfield, obit., xviii, 564.  
 Pardo, Don Manuel, assassination of, iii, 687.  
 Pardons, Board of, in Connecticut, viii, 253.  
 Parian Wares, viii, 640.  
 Parion, Louis Esquiron de, obit., xviii, 584.  
 Paris, Auguste, ii, 319.  
 Paris, Comte de, xii, 291; marriage of, xi, 355.  
 Paris Exposition, xiv, 680.  
 Paris, first meeting of the Chambers in, since 1870, iv, 392; map of, and environs, ii, 306; illustrations; bridges of, ii, 308; opera-house, 312; arc de triomphe de L'étoile, 317; church of Notre Dame, 316; labor disturbances in, xi, 359; right of, to legislative autonomy, xii, 297.  
 Paris, F. E., obit., xviii, 584.  
 Paris Observatory, the, ix, 47.  
 Paris Salon, exhibitions of the, x, 358; xii, 274.  
 Parisel, Dr. F., obit., ii, 608.  
 Parish churches bill, xi, 21.  
 Park reservation, xvii, 126.  
 Park, Richard H., statue by, x, 367.  
 Parke, T. H., obit., xviii, 585.  
 Parker, A. J., obit., xv, 658.  
 Parker, H. G., obit., xvii, 565.  
 Parker, Joel, sketch, xiii, 648.  
 Parker, Peter, sketch, xiii, 648.  
 Parker, R., experiments iii, 722.  
 Parker, W. K., obit., xv, 686.  
 Parker, Willard, ix, 726, 727; sketch, 641.  
 Parkersburg, W. Va., xvi, 165.  
 Parkes, Sir Henry, x, 174; obit., x, 666.  
 Parkman, Francis, sketch and port., xviii, 606.  
 Parlatores, F., obit., ii, 608.  
 Parliament buildings, Sydney, illustration, iv, 58.  
 Parliament, eleventh, of Queen Victoria, xi, 398; xii, 343.  
 Parliament House explosions, ix, 378; x, 234.  
 Parliament House, Toronto, xiv, 277.  
 Parliament of Religions, the World's, xviii, 607.  
 Parliament, the German, organization of, vii, 209; absenteeism, 200; rules, 210; groups in, 211; general aspect, 211.  
 Parliamentary system of England, the, vii, 199; rules, *ibid.*, 206; penal power, 202; expulsions, 202; the *clôture*, 203.  
 Parmentier, observations, viii, 22.  
 Parnell, C. S., sketch, v, 615; arrest, vi, 368; proposed suspension, vii, 204; "Treaty of Kilmainham," vii, 367; controversy with Mr. Foster, viii, 412; ix, 371, 372; x, 454, 455; in Parliament, illustration, vii, 205; obit. and port., xvi, 681.  
 Parnell commission, xiv, 395; xv, 397.  
 Paropamisus range, the, x, 4; valleys of, 7.  
 Parra Aquileo, i, 115.  
 Parrish, J., obit., xvi, 645.  
 Parrott, R. P., obit., ii, 586; invention by, iii, 754, 762.  
 Parsivans, the, x, 8.  
 Parsons, Dr., murder of, v, 690.  
 Parsons, Edward Y., obit., i, 622.  
 Parsons, G. F., obit., xviii, 564.  
 Parsons, H. B., experiments by, vi, 95; obit., x, 653.  
 Parsons, P. M., invention, i, 523.  
 Parsons, T., sketch, vii, 673.  
 Parthenine, x, 300.  
 Particularists movements, xvii, 51.  
 Parties, political, in Germany, xviii, 347.  
 Parton, Arthur, xi, 346.  
 Parton, James, obit. and port., xvi, 646.  
 Pasadena, xii, 126.  
 Pasaglia, Carlo, obit., xii, 635.  
 Paschall, G. W., obit., iii, 643.  
 Pasi, Count, obit., xv, 686.  
 Pasolini, Count, obit., i, 640.  
 Passaic, N. J., xvii, 118.  
 Passamante, Giovanni, iv, 528.  
 Passanaquoddy Indians, xvii, 430.  
 Passerini, L., obit., ii, 608.  
 Pasteur, Louis, germ theory of, iii, 387; experiments by, iv, 443; vi, 347; x, 157, 484.  
 Patagonia, partition of, i, 34; iv, 38; x, 41; disputed claims, x, 41; explorations in, xii, 315; discovery of gold in, xi, 39.  
 Patella, fracture of the, ix, 749.  
 Patenôtre, M., x, 28, 29.  
 Patent Office, centennial celebration, xvi, 703.  
 Patents, viii, 618; grounds and methods of obtaining, laws on, etc., 618-623; change in English law, 623; international conferences, 624; bill in Germany, ii, 351; office organized, 352; Congress, iii, 314; to two or more, 809; Burdett-Estey suit, iv, 842; drive-well suit, v, 418; British law, viii, 410; ix, 642; x, 682; international union, ix, 339; xii, 649; decisions in courts, xi, 738; xii, 650; statistics and descriptions of some inventions for every-day use, xii, 649-656; illustrations, 651-656; amendment of law, 204; case of extension of, 650; xiii, 674; xvi, 699; xvii, 616, 746.  
 Paterson, N. J., xviii, 170.  
 Patin, H. J. H., sketch, i, 654.  
 Patriarchate, œcumenical, xii, 773.  
 Patrick, M. R., sketch, xiii, 648.  
 Patriotic League, xv, 702.  
 Patriotic Order, xv, 703.  
 Patrizi, C., obit., i, 640.  
 Patrons of Husbandry, xiii, 242.  
 Patterson, Capt., explorations and death of, iv, 403.  
 Patterson, J. W., obit., xviii, 564.  
 Patterson, Robert, sketch, vi, 725.  
 Patterson, T. H., sketch, xiv, 643.  
 Patterson, W. C., obit., viii, 593.  
 Patti, Carlotta, sketch, xiv, 667.  
 Pattison, Mark, obit., ix, 620.  
 Pattison, R. E., sketch and portrait, vii, 678.  
 Pattison, Thomas, obit., xvi, 646.  
 Patton, Abby H., obit. and port., xvii, 565.  
 Patton, Alfred S., sketch, xiii, 648.  
 Patton, W. W., sketch, xiv, 644.  
 Paul, J. H., nominated, xiii, 559.  
 Paul, Gabriel R., obit., xi, 695.  
 Paul, M., observations of, viii, 21.  
 Paulding, Hiram, obit., iii, 643.  
 Paulet, Lord W., obit., xviii, 585.  
 Pauli, Richard, obit., xvii, 565.  
 Pauncéfote, Sir Julian, x, 420.  
 Pauper immigration, xiii, 424.  
 Pauperism and crime, xvi, 842.  
 Pavement, for cities, ii, 277.  
 Pavy, F. W., experiments by, ix, 658.  
 Pavy, Octave, ix, 33-35.  
 Pawtucket, growth of, xii, 126.  
 Payer, Richard, explorations by, ix, 350; xi, 381; xii, 314.  
 Payne, Joseph, sketch, i, 654.  
 Paynter, James A., obit., i, 640.  
 Paynter, J. H., obit., xv, 658.  
 Peabody, A. P., obit., xviii, 564.  
 Peabody, Elizabeth P., xiii, 11.  
 Peabody Museum, the, xi, 22.  
 Peace Congress, xvi, 389; xvii, 723.  
 Peach, Benjamin N., ix, 636, 637.  
 Peacock, Mother, obit., iv, 774.  
 Peacock, Sir B., obit., xv, 686.  
 Peanut oil, xiv, 133.  
 Peanuts, vii, 329; xii, 758.  
 Pear-blight, theory of, ix, 94.  
 Pearce, C. S., xi, 347; xii, 279.  
 Pearce, Richard, x, 578.  
 Pearl, the, canoe, ill., ix, 109.  
 Pearls, xviii, 644.  
 Pearson, Clement, obit., xi, 695.  
 Pearson, Emma Maria, obit., xviii, 585.  
 Pearson, John J., sketch, xiii, 648.  
 Pearson, R. M., obit., iii, 643.  
 Peasant insurrection, xiii, 721.  
 Peasant proprietors, in Ireland, x, 526.  
 Pease, Alfred H., obit., vii, 641.  
 Pease, Joseph L., obit., iii, 643.  
 Peat, use of, in Mexico, ix, 493.  
 Peatfield, James, sketch, xiv, 644.  
 Pecci, Cardinal, sketch, ii, 629.  
 See Leo XIII.  
 Pecci, G., obit., xv, 686.  
 Pechûle, Dr., discovery by, vi, 38.  
 Pechili, Gulf, blockaded, x, 27, 28.  
 Peck, Asahel, obit., iv, 694.

- Peck, Ebenezer, obit., vi, 687.  
 Peck, G., D. D., obit., i, 622.  
 Peck, Jesse T., obit., viii, 593.  
 Peck, John J., obit., iii, 643.  
 Peck, W. G., obit., xvii, 565.  
 Peckham, F. A., obit., i, 622.  
 Peckham, S. F., observations by, iv, 53.  
 Pecos river bridge, xvii, 249.  
 Peculiar people, xiii, 676.  
 Pedas-o, Homeric city of, ix, 25.  
 Pedersen, Knud, obit., i, 640.  
 Pedra Pedraõ, discovery, xii, 306.  
 Pedro II of Brazil, sketch, ii, 629; portrait, 74; sketch and port., xiv, 684; obit., xvi, 682.  
 Peel, Arthur W., sketch and portrait, ix, 643.  
 Peel, Paul, obit., xvii, 601.  
 Peeples, Judge C., obit., ii, 586.  
 Peet, Stephen D., xi, 23.  
 Peirce, Benjamin, obit., v, 595.  
 Peixotto, B. F., obit., xv, 658.  
 Peking, illustrations; Temple of Heaven, iii, 98; western gate, 100.  
 Pel, Gen., obit., i, 640.  
 Pelew Islands, x, 138.  
 Pelham, William, obit., iv, 694.  
 Pellegrini, Antonio, obit., xii, 635.  
 Pellegrini, Carlo, sketch, xiv, 667.  
 Pellow, George, obit., xvii, 565.  
 Pellicier, A. D., obit., v, 595.  
 Pelly, Sir Lewis, ii, 5, 6; obit., xvii, 601.  
 Pemberton, J. C., sketch, vi, 726; x, 425.  
 Penck, A., explorations by, xii, 313.  
 Pendleton bill, the, ix, 692.  
 Pendleton, George H., sketch and port., xiv, 644.  
 Pène, Henri de, sketch, xiii, 667.  
 Penfield, S. L., x, 156.  
 Penjdeli, x, 4; Afghan elaim to, 7; fight at, 10; cave dwellings near, 38; occupation of, ix, 714.  
 Penitentes, figures called, ix, 543.  
 Penn, John, obit., iii, 660.  
 Penneterie, L., obit., xviii, 582.  
 Pennie, Henry, invention, ix, 736.  
 Pennoek, Rear-Admiral A. M., obit., i, 622.  
 Pennsylvania, statistics, government, legislative proceedings, elections, etc., in each volume; views in, i, 656, 657; ii, 632, 636; election of Senator J. D. Cameron, ii, 630; strike, 636, see Labor-Strikes, iv, 717; boundary-line of New York, i, 637; the oil business, iii, 678, 682; Standard Oil Company, 682; election of Gov. Hoyt, iii, 684; case of payment of Pittsburg bonds, 685; of farming land in Pittsburg, 686; tramp and store-order acts, iv, 715; taxation of corporations, 715; v, 619; investigation of bribery charges, iv, 718, 721; v, 621; management of Agricultural College, iv, 719; railroads, 719; v, 618; xi, 746; taxation of church property, iv, 721; liability of a city for the condition of its streets, 721; sale of medical diplomas, v, 622; insurance companies, vi, 727; population by counties, 731; election of Gov. Pattison, vii, 679; sketch and portrait, 678; divorces, ix, 645; xi, 745; liquor-traffic, xi, 745; abuses in soldiers' orphans' homes, 746; industrial statistics, 747; election of Gov. Beaver, 750; married women's property act, xii, 656; constitutional amendments, 657; the American party, 659; population, xv, 703; high license, 705; decisions, xvi, 717, and xviii, 611; constitutional revision, 717; State suits, xvii, 625.  
 Pensacola, xiv, 155.  
 Pension bill, xvii, 278.  
 Pension bill, dependent, xv, 234.  
 Pensions, in Japan, i, 427; in New Jersey to soldiers of 1812, vi, 638; to soldiers of other American wars, ix, 224; Mexican war, xviii, 211; increase of, bill in Congress, viii, 248; amendment to pension veterans of Mexican and Indian wars, viii, 248; xi, 255; bill in United States, xii, 183; in Germany, 328; increase in number of, 779; United States, xiii, 234, 772; xiv, 217, 805; xv, 820; xvii, 199, 205, 527; xvii, 746; xviii, 739; Confederate, xiii, 618, 743; xiv, 612, 327, 772; xv, 365, 625; xvi, 532; xvii, 724; xviii, 7, 498.  
 Pentarchist party, Italy, xi, 454.  
 Pentaure, poem of the, ix, 28.  
 Pentaure, mummy of, xi, 32.  
 Penzance, Lord, ii, 18 *et. seq.*  
 Peor, site of, ix, 28.  
 Peoria, growth of, xi, 719.  
 Pepe, King, ix, 19.  
 Pepper, G. S., obit., xv, 658.  
 Peptones, the, viii, 119; xii, 675.  
 Percy, John, sketch, xiv, 667.  
 Pereire, I., obit., v, 602.  
 Pereirine, x, 300.  
 Perger, Rt. Rev. J., obit., i, 640.  
 Perier, sketch, i, 659.  
 Perinchief, O., obit., ii, 586.  
 Perkin, Dr. W. H., experiments by, x, 157, 158.  
 Perkins, C. A., obit., xvii, 565.  
 Perkins, G. C., vii, 74.  
 Perkins, G. L., sketch, xiii, 648.  
 Perkins, George R., sketch, i, 659.  
 Perkins, Jonathan C., obit., ii, 586.  
 Perkins, S. E., sketch, iv, 723.  
 Perkins, William, obit., xii, 603.  
 Peroffskaya, Sophia, vi, 797.  
 Perraud, J. J., obit., i, 640.  
 Perrin, Robert P., obit., i, 622.  
 Perrone, G., sketch, i, 659.  
 Perrotin, discoveries by, i, 46; ii, 44; iii, 36; xi, 54.  
 Perry, Benjamin F., obit., xi, 695.  
 Perry, E. E., sketch, xiv, 644.  
 Perry, electric railway, viii, 678.  
 Perry, Horace J., obit., xvi, 646.  
 Perry, Oliver H., statue of, x, 367.  
 Perry, S. J., obit., xv, 686.  
 Perry, William, obit., xii, 603.  
 Persecution of Christians in China, xi, 155.  
 Persia, sovereign, ministry, statistics, etc., in each volume, except iii and xi; views in, i, 660; ii, 637, 638; travels of the Shah, i, 660; reforms, 660; incursions of Tekke and Kurds, i, 661; v, 623; vi, 731; mission, i, 661; the Russo-Turkish war, ii, 638; iv, 724; possible alliance with England, iv, 724; reorganization of the army, 724; vi, 733; the Afghan question, v, 622; famine, 623; opium culture, 623; succession to the throne, vi, 731; x, 686; railroad schemes, vi, 732; rivalry of Russians and British in, 732; Merv oasis, 733; tent-dwelling Turkomans of Kara Kum, 733; under protection of Russia, vii, 681; Sarakhs, 681; internal disturbances, 681; Shiites and Sunnites, viii, 627; commerce and industries, ix, 646; the Russian advance, 647; x, 14, 686; attempted capture of Herat, x, 1; minister of foreign affairs, xii, 660; relics from, xiv, 22; xv, 706; xvi, 717; earthquake, xviii, 614.  
 Persian antiquities, xi, 26.  
 Persian succession, vi, 731; x, 686.  
 Pertz, G. H., obit., i, 640.  
 Peru, statistics, government, trade, history, etc., in every volume but ii; war with Chili, see Chilean War; claim against Chili, x, 164; insurrections, x, 686, 687; proposal of protectorate over, 687; Grace-Aranibar contract, the, xii, 662.  
 Peru, Chili, and the United States, vi, 738; vii, 810; termination of American treaties, x, 687.  
 Perugia, illustration, ii, 678.  
 Peruvian bark, ix, 89, 123; x, 99; cultivation of, in India, v, 387. See also Cinchona.  
 Peruzzi, Vbaldino, obit., xvi, 683.  
 Peshawer, fort of, in India, illustration ii, 390.  
 Pestilence in India, i, 404.  
 Peter, Mrs. S., obit., ii, 586.  
 Petermann, A., obit., iii, 660; theory of African rivers, 363.  
 Peters, Adolf, obit., i, 640.  
 Peters, C. A. F., obit., v, 602.  
 Peters, C. H. F., discoveries by, i, 46; ii, 44; iii, 36; iv, 51; v, 34; viii, 21; star-charts of, viii, 27; obit. and port., xv, 659.  
 Peters, John C., obit., xviii, 565.  
 Peters, Karl, sketch, xiv, 667.  
 Peters, Theodore C., obit., i, 622.  
 Peters, T. M., obit., xviii, 565.  
 Petersburg, xi, 419; capture of, x, 428, 430.  
 Petersburg, Va., xvi, 165.  
 Petitot, explorations by, v, 297.  
 Petralite, x, 343.  
 Petrella, E., obit., ii, 608.  
 Petrie, H. F., explorations, x, 33.  
 Petrie Point, view of, xv, 596.  
 Petrie, W. M. Flinders, invention, iii, 275; ix, 19, 21; xi, 27, 28.  
 Petrified forest, Arizona, xviii, 21.  
 Petroleum, vii, 687; pipe-line transportation of, iii, 618; export of, 682; iv, 174; test, vii, 96; statistics, vii, 114; government monopoly in Greece, viii, 419; in Mexico, 537; in Ontario, 609; in Russia, ix, 705; x, 718; in Egypt, xi, 312; Russian, x, 718; xi, 312; in Argentine Republic, xii, 28; in Burmah, xii, 84; possible origin of, ix, 129; xiii, 680. See Napltha.  
 Petroleum lamps, causes of explosion of, x, 160.  
 Petry, invention by, x, 346.  
 Pottenkoben, A., sketch, xiv, 668.



- Pettie, John, x, 364; xi, 345; obit., xviii, 585.
- Pettingell, John H., obit., xii, 603.
- Pettis, G. W., obit., xvii, 566.
- Pettit, John, obit., ii, 586.
- Pettitbled, invention by, ix, 786.
- Peucker, E., sketch, i, 662.
- Peyton, Bailie, obit., iii, 643.
- Pfaff, C. L., obit., xv, 660.
- Pfordten, O. F., experiments by, xviii, 113.
- Pfund, Dr., obit., i, 640.
- Phacusa, x, 36.
- Phanerogamia, ix, 95.
- Phantom City in Central America, vii, 337.
- Pharaoh's serpents, ix, 808.
- Pharmacy, viii, 630; ix, 649; x, 688; xi, 753; xii, 664; xiii, 687; xvii, 630.
- Phata-Hoteph, book by, vii, 260.
- Phelan, James, obit., xvi, 646.
- Phelps, A., obit., xv, 660.
- Phelps, A. H. L., obit., ix, 610.
- Phelps, Elisha, obit., v, 595.
- Phelps, G. M., sketch, xiii, 648.
- Phelps, John F., obit., iii, 643.
- Phelps, John Smith, i, 566; obit., xi, 696.
- Phelps, Philip, obit., i, 622.
- Phelps, Royal, obit., ix, 611.
- Phenix or Phœnix, xiv, 156.
- Phenol, ix, 129.
- Philadelphia, statistics of, x, 685; recent growth of, xi, 180.
- Philadelphia, ancient, ix, 28.
- Philadelphia's new charter, xiv, 689.
- Philbrick, John D., obit., xi, 696.
- Philippia, xi, 139.
- Philippine Islands, viii, 740; ix, 740; xiv, 776.
- Philleo, P. C., obit. and port., xv, 660.
- Phillippi, engagement at, x, 554.
- Phillippopolis, revolt in, x, 108.
- Phillippovitch, Baron, sketch, xiv, 668.
- Phillips, C. D. F., xii, 678.
- Phillips, G. S., sketch, xiv, 644.
- Phillips, Isaac, sketch, xiv, 644.
- Phillips, John A., obit., xii, 636.
- Phillips, John B., obit., ii, 586.
- Phillips, R. H., obit., xv, 660.
- Phillips, Wendell, obit. and portrait, ix, 650.
- Phipson, experiments by, vii, 88.
- Phœnicians, relics of the, ix, 28.
- Phoenix Park murders, the, vii, 366; viii, 414; trials for, 415.
- Phoneidoscope, the, iii, 727.
- Phonograph, the, ii, 638; illustrations, 638, 639; xv, 708.
- Phormium hemp, xiii, 248.
- Phosphates, xi, 806; discovery of, in Colombia, xii, 140; xiv, 772; xvii, 278; discovered, xiv, 326; of lime, xiv, 15; xv, 319, 778; in Alabama, xviii, 7; in Florida, xviii, 315.
- Phosphorescence, of marine animals, x, 690.
- Phosphoric acid, ix, 128; determination of, x, 157.
- Phosphorus, production of, v, 88; new form, viii, 121.
- Photo-Engraving, xii, 665.
- Photographic camera, xvi, 710.
- Photography, improvements in, ii, 498; iii, 725; vi, 747; amateur, ix, 651; celestial, x, 49; ix, 52; x, 47, 49; xi, 51; xii, 35; in colors, ix, 122; illustrations, washing plates, xii, 655; xi, 741; astronomical, xiii, 49; xiv, 43; celestial, xvi, 51; recent progress in, xvi, 720.
- Photometer, meridian, xi, 52.
- Photometry, new unit of light for, ii, 96; standards, vi, 96; stellar, xii, 43.
- Photophone, the, v, 447.
- Phthallic acid, v, 89.
- Phuoc, Luh Vinh, leader of the Black Flags, x, 27, 31.
- Phylloxera, vi, 670; ix, 345.
- Physical training, xii, 665.
- Physics, progress of, in recent years, xiv, 611; in 1890, xv, 710; in 1892, xvii, 634; in 1893, xviii, 616; chemical, xv, 99; in 1891, xvi, 725; xviii, 131.
- Physiology, recent, vi, 748; viii, 631; literature of, vi, 754; vii, 692; viii, 638; ix, 653; x, 689; xi, 754; xii, 668; xiii, 689; xiv, 703; xv, 720; xvi, 734; xvii, 644; xviii, 626.
- Piaggia, explorations by, ii, 330.
- Piahte, Lake, x, 395.
- Piallat, M., invention by, x, 578.
- Pianell, Count G., obit., xvii, 602.
- Pianista, x, 620; ill., 621.
- Piano, improvements in the, i, 517; x, 614; mécanique, x, 620.
- Piano, Major, xii, 2.
- Piatt, Donn, xvi, 646.
- Picard, L. J. E., obit., ii, 608.
- Pichot, A., obit., ii, 608.
- Pickering, Charles, obit., iii, 643.
- Pickering, C. W., sketch, xiii, 649.
- Pickering, E. C., observations by, vi, 40; vii, 41; ix, 52; x, 53.
- Pickering, W. H., xi, 51, 52, 53, 57.
- Picknell, William L., xi, 347.
- Pieramine, x, 300.
- Pieric acid compounds, x, 346.
- Pictet, Raoul, design of, for ships of war, vi, 246; apparatus for liquefying oxygen, with illustration, ii, 88; quoted, vii, 259; experiments by, ix, 434.
- Pictures, exhibitions and sales of, picture galleries. See Fine Arts.
- Pierce, Bradford, sketch, xiv, 644.
- Pierce, George F., obit., ix, 611.
- Pierce, Lovick, obit., iv, 695.
- Pierce, Thomas P., obit., xii, 603.
- Pierola, Nicholas de, iv, 728; made "supreme chief" of Peru, v, 625; his flight, vi, 737. See also Peru, Chili, and United States.
- Pierpont, John, sketch, vii, 693.
- Pierre, P. J. G., obit., viii, 603.
- Pierrepoint, Edwards, obit. and port., xvii, 566.
- Pierrepoint, H. E., sketch, xiii, 649.
- Piers, new, iv, 344.
- Piersol, S. H., nominated, xiii, 841.
- Pierson, H. R., obit., xv, 660.
- Pig-iron, in Alabama, xv, 5.
- Pihahiroth, site of, ix, 19.
- Pike, A., obit. and port., xvi, 647.
- Pike, Austin F., obit., xi, 696.
- Pike County disorders, xiii, 463.
- Pike, Maria L., obit., xvii, 566.
- Pike, Richard, obit., xviii, 585.
- Pile, William A., sketch, xiv, 644.
- Pilgrimages, to shrine of Ste. Anne, xvii, 661.
- Pilgrim Fathers, monuments to, xiv, 323; homes of the, xv, 321.
- Pillot, A. P., obit., v, 595.
- Pillow, G. J., x, 423; obit., iii, 644.
- Pillsbury, Gilbert, obit., xviii, 565.
- Pillsbury, J. S., sketch, i, 558; portrait, ii, 524.
- Pilot-chart, xiii, 59.
- Piloty, Carl von, ix, 464; xii, 279; obit., xi, 724.
- Pim, Bedford, obit., xi, 725.
- Pinart, Zelia N., xi, 24, 46.
- Pine Bluffs, Ark., xviii, 171.
- Pine, white, xvi, 530.
- Pine-wood oil, vii, 634.
- Pineo, Peter, obit., xvi, 647.
- Pineton, Charles A., obit., xvi, 647.
- Pinheiro, Lieut., invention by, iii, 725.
- Pinkertons, the, xvii, 208.
- Pinkney, Howard, sketch, xiii, 649.
- Pinkney, William, obit., viii, 593.
- Pinneo, T. S., obit., xviii, 565.
- Pineum, vii, 94.
- Pinsk Marshes, drainage, xi, 320.
- Pinto, Don Annibal, i, 103; iii, 73.
- Pinto, Serpa, explorations by, iv, 404; v, 293; sketch of, iv, 405.
- Piombo, Sebastian del, x, 366.
- Pipe-line, Suakim-Berber, ix, 316.
- Pipe-lines, xvii, 655.
- Piper-methysticum, xi, 291.
- Piperonal, xi, 291.
- Piracy at Foochow, i, 109, 347.
- Piræus, excavations in the, x, 37.
- Pirnez, E., obit., xv, 686.
- Pirogoff, Dr., ix, 747.
- Pirot, capture of, x, 731.
- Pisciculture, viii, 791.
- Pisekhanu, King, ix, 19; city of, 20.
- Pishin, annexation of, xiii, 7.
- Pistorius, H. A., obit., ii, 609.
- Pita, viii, 638; illustration, 639.
- Pitcher, John, obit., xvii, 566.
- Pithom, identification of the city of, ix, 19; x, 35.
- Pitkin, Frederick W., obit., xi, 696.
- Pitkin, Perley P., obit., xvi, 647.
- Pittman, Ben, ix, 246.
- Pittsburg Landing, battle of. See Shiloh.
- Pittsburg, recent growth of, xi, 180; illustration, ii, 632.
- Pittsfield, xv, 141.
- Pituri, vi, 755.
- Pius IX, sketch, iii, 689; episcopal jubilee of, ii, 681; insult to the remains of, vi, 451, 792.
- Pixley-Fulford, Annie, obit., xviii, 565.
- Place, Charles P., obit., xviii, 585.
- Placide, Thomas, obit., ii, 586.
- Plague, the, iv, 728; vii, 286, 291.
- Plainfield, xv, 141.
- Plains of Heaven, the, x, 396.
- Planché, James R., obit., v, 602.
- Planchon, J. E., sketch, xiii, 667.
- Planetary tables, xiv, 46.
- Planetoids, xviii, 45.
- Planets, supposed intra-Mercurial, i, 45; iii, 33; viii, 20; ultra-Neptunian, v, 34; spectra of, xi, 54; discoveries of minor, see Astronomical Progress.
- Planté, Gaston, invention by, vi, 254; experiments of, vii, 265; xii, 492; sketch, xiv, 668.
- Plants, chemistry of, xiii, 146.
- Plants, electrical phenomena in, i, 249; insectivorous, iv, 36; ab

- sorption of noxious substances by, vii, 93; anatomy and physiology of, ix, 92; respiration of, ix, 130; new, xii, 73.
- Plataea, relics at, xvi, 18.
- Platinum, atomic weight of, vi, 93; wire, x, 576.
- Platt, T. C., resignation of, vi, 644.
- Plattsmouth, Neb., xviii, 171.
- Playfair, Sir Lyon, x, 46.
- Pleiades, the, xii, 44.
- Plener, Dr., on financial reform in Austria, v, 44.
- Pleuro-pneumonia, xi, 434; in Chicago stock-yards, xii, 377.
- Plevna, fall of, ii, 744; ix, 762.
- Pleyte, M. W., x, 36.
- Plimpton, J. L., ix, 736.
- Plimpton and Graves, experiments by, viii, 113.
- Plötz, Albert von, obit., i, 640.
- Plover, in the United States, x, 389.
- Plumb, Preston B., sketch, ii, 416; obit., xvi, 647.
- Plumbing, ix, 716 *et seq.*; diagram, 718.
- Plumer, William S., sketch, v, 626.
- Plumfield, xiii, 11.
- Plumptre, E. H., obit., xvi, 68.
- Plunkett, T. O. W., sketch, xiv, 668.
- Plushes, ix, 788.
- Pneumatic excavation, ii, 275.
- Pocci, Count, obit., i, 640.
- Pocock, Francis, death of, ii, 332.
- Poe, Edgar A., memorial to, x, 367.
- Poetsch, his method of mining, xi, 320.
- Poetry, recent publications in. See Literature, in every volume.
- Pozge, Paul, explorations of, i, 331; obit., ix, 620.
- Poggendorff, J. C., obit., ii, 609; explorations, iii, 364.
- Poillon, Richard, obit., xvi, 648.
- Poindexter-Greenhow case, the, x, 268.
- Point Pleasant, Ohio, Grant's birthplace at, illustration, x, 422.
- Pointers, ix, 256.
- Poise, Ferdinand, obit., xvii, 602.
- Poisons, in food, clothing, etc., iv, 34; ix, 663; action of, xi, 763; xii, 678; xiii, 695; xiv, 710; xv, 728. See Arsenic.
- Polak, Edward, obit., xvi, 683.
- Poland, change in administration, i, 711; demand for political rights, v, 666; plan to restore the Kingdom of, ix, 358; expulsion of foreigners from, x, 418.
- Poland, Luke P., obit., xii, 603.
- Polar bear, illustration, i, 327.
- Polar Conference, third, vi, 325.
- Polaris, xiii, 57.
- Polarization, vii, 265.
- Polar regions, statistical tables, v, 626; expeditions to the, xii, 316; xviii, 335. See Arctic Expeditions.
- Polaris, the, ix, 33, 34.
- Polding, Archbishop, obit., ii, 609.
- Poles, conciliation of, viii, 708; xi, 389, 390.
- Poliakoff, Samuel, sketch, xiii, 667.
- Police power of States, ix, 429.
- Policy, Indian, changes of, vi, 421.
- Political Agitations, in Denmark, iv, 313; vi, 209, 210; in Portugal, vi, 760; in France, ii, 303; map of France, ii, 314; in Italy, see Italia Irredenta; in the United States, i, 719. See also under titles of countries.
- Political assessments, vii, 151, 693. See also Civil-Service Reform.
- Political cases in South Carolina, pardons, iv, 820.
- Political conventions, national. See article United States and articles on States of the Union.
- Political crimes, by supposed Fenians, vi, 370. See Assassinations.
- Political Economy, recent works on. See Literature, in every volume.
- Political parties, English, viii, 412.
- Political parties in Germany, xviii, 347.
- Political parties, United States, conventions of. See under names of States in each volume.
- Polk, ex-President, burial place of, xviii, 711; homestead, view of, xvi, 648.
- Polk, L. L., obit., xvii, 566.
- Polk, Sarah C., obit. and port., xvi, 648.
- Polk, Trusten, obit., i, 622.
- Pollard, Josephine, obit., xvii, 566.
- Polle, Dr., ix, 653.
- Pollock, J., obit., xv, 660.
- Polo, description of, xii, 680.
- Polygamy, in Utah, vi, 783, 859; ix, 219, 792; in Idaho, viii, 435, 812; law against, x, 764, 773; trials, ix, 792; act of Congress, xii, 168.
- Polynesia. See Australia and Polynesia.
- Polynesian race, the, ix, 277.
- Polynias, the, vii, 332.
- Pomare, Queen of the Society Islands, ii, 53; v, 40.
- Pomare, King, v, 40.
- Pomeroy, S. C., obit., xvi, 648.
- Pomona, Cal., xviii, 172.
- Pompeii, celebration of its destruction, iv, 527.
- Ponape Island, x, 139; ruined city in, 146.
- Ponca Indians, removal, iv, 653.
- Ponchielli, Amilcare, obit., xi, 725.
- Pondicherry, xv, 334.
- Pondoland, x, 135; xi, 135; xvi, 102.
- Ponroy, P. G. A., sketch, i, 663.
- Pontmartin, Count, obit., xv, 686.
- Ponzi, Giuseppe, obit., x, 667.
- Poole, R. S., x, 35.
- Poor, work for the. See Charities.
- Pope, Commodore John, obit., i, 622.
- Pope, Gen. John, x, 401, 559, 560; obit. and port., xvii, 567.
- Pope, John A., sketch, xiv, 668.
- Popelin, Claudius, obit., xvii, 602.
- Popoff, Capt., x, 731.
- Popow, Dr., ix, 654.
- Popper, Julius, xii, 315.
- Poppy oil, xiii, 145.
- Population, density and death-rate, iii, 723; of the earth, xvi, 261.
- Population, the center of, in the United States, with maps, vi, 755; movement of the center, map, 757; foreign map, vi, 851.
- Porcelain, viii, 639; illustrations, 641, 642, 643.
- Pork, prohibition of American, viii, 396, 643.
- Porpoise-hunting, xii, 681.
- Porro, expedition of, xi, 312, 455.
- Portal, Mr., his mission, xiii, 2, 3.
- Port Arthur, xiii, 170.
- Port Gibson, battle at, x, 425.
- Port Hamilton, taken by the British, x, 10, 14, 174; xi, 155; retroceded, xii, 118; abandoned, 311.
- Port Hudson, surrender of, x, 426.
- Port of Spain, burned, ix, 803.
- Porter, A. D., invention, ii, 720.
- Porter, David Dixon, sketch and port., xvi, 743.
- Porter, Elbert S., sketch, xiii, 649.
- Porter, Fitz-John, case of, iv, 49; in Congress, viii, 236; ix, 205; xi, 253.
- Porter, James, sketch, xiii, 649.
- Porter, James D., i, 745; ii, 710.
- Porter, J. K., obit., xvii, 567.
- Porter, Noah, obit. and port., xvii, 567.
- Port Huron, Mich., xvi, 166.
- Portland, Maine, growth of, xi, 181; illustration, ii, 474.
- Portland, Oregon, growth of, xii, 127.
- Porto Rico, viii, 648; ix, 663; xi, 783; xii, 802; xiii, 840; xiv, 824.
- Portraits, composite, iii, 726; ancient, xiii, 29; crayon, xv, 729.
- Ports, opened, in China, i, 119; ii, 102; new, xiii, 257.
- Portsmouth, N. H., xvi, 167.
- Port Townsend, Wash., xvi, 167.
- Portugal, sovereign, statistics, etc., in each volume, except xv and xvi; views in, i, 665; ii, 640, 641; improvement in finances, i, 664; liberal party, 665; ministerial crisis, De Avila cabinet formed, ii, 641; the Jesuits, iv, 628; tercentenaries of Camoens and Vasco de Gama, iv, 628; national debt, vi, 759; popular demonstrations against the government, vi, 760; vii, 697; colonies, viii, 650; x, 697; xi, 767; xii, 684; claims on the Congo, viii, 651; postal congress, x, 697; change of ministry, De Castro cabinet, xi, 767; dissolution of the Cortes, xii, 603; treaty with China, 117; attempt to establish a protectorate over Dahomey, xii, 684; claim of, to the lower Congo, x, 191; portraits of King and Queen, xiv, 711; xv, 737; xvi, 749.
- Portuguese East Africa, xviii, 275.
- Portuguese, the, in Africa, ix, 168; x, 394.
- Posada Herrera, ix, 741; obit., x, 667.
- Position finder, xv, 581.
- Possiblists, the, ix, 344, 742.
- Postage, review of legislation on, viii, 163; bill in Congress for reduction, viii, 185; review of reductions, viii, 188.
- Postal Congress, x, 697; xvi, 69.
- Postal Convention, xiv, 98.
- Postal Dispatch, Pneumatic, ii, 497.
- Postal Facilities, recent improvements in, xii, 684; distribution, 685; fast mail of 1875, 686; stamped special-request and letter-sheet envelopes, 686; post-



- age, 686, 687; money-orders, postal notes, and postal savings-banks, 697; registration, 688; locks, letter-boxes, the silicate tablet, 688; mail-bags and boxes, canceling-machines, 689; postal union, 689; salaries of letter-carriers, 206; cards, xvii, 659.
- Postal route, American, x, 61.
- Postal Statistics, i, 240; iv, 836.
- Postal subsidy, xvi, 226.
- Potagos, explorations by, v, 292.
- Potanin, G. N., explorations by, ii, 327; xii, 310.
- Potassa, determination of, ii, 93; manufacture, viii, 115.
- Potassium, chlorate powders, x, 845; new processes for obtaining, xii, 107.
- Potet, invention of poteline, vii, 816.
- Potentite, x, 344.
- Pothuan, Louis, ii, 321.
- Potocki, Count, sketch, xiv, 668.
- Potomac marshes, the, drainage recommended, v, 650.
- Pott, Angus F., obit., xii, 636.
- Potter, C. N., sketch, vii, 697.
- Potter, E. E., sketch, xiv, 645.
- Potter, George, obit., xviii, 585.
- Potter, H., obit. and port., xii, 604.
- Potter, J. H., obit., xvii, 568.
- Potter, Platt, obit., xvi, 648.
- Potter, Robert B., obit., xii, 605.
- Pottery, Cincinnati, ix, 248.
- Pottinger, Mr., x, 1.
- Pottle, Emory B., obit., xvi, 648.
- Potts, F. A., sketch, xiii, 649.
- Pouget, trial of, viii, 369.
- Poughkeepsie, growth of, xi, 181.
- Poujoulat, J. J. F., obit., v, 602.
- Poundmaker, x, 128.
- Poussin, Nicholas, sale of work of, x, 361; xiii, 260.
- Pouyer-Quertier, A. T., obit., xvi, 684.
- Powder, smokeless, xiv, 742, 743; xvii, 482.
- Powell, J. W., x, 402, 403; address, xiii, 44.
- Powell, Thomas, obit., xii, 605.
- Power of Congress over witnesses, vii, 698; Kilbourne case, *ibid.*
- Powers, H. N., obit., xv, 661.
- Powys, Bishop, obit., ii, 609.
- Poynter, E. J., x, 364; xii, 277.
- Pozzolini, Gen. G., xi, 1, 455.
- Prado, Gen. Mariano Ignacio, iii, 686; sketch, iv, 732.
- Prager, F., obit., xvi, 684.
- Praga, Emilio, obit., i, 640.
- Prague, the Theinkirche in, illustration, ii, 380.
- Prat, metal discovered by, ii, 502.
- Prati, Giovanni, obit., ix, 620.
- Pratt, Anne, obit., xviii, 585.
- Pratt, C., obit. and port., xvi, 649.
- Pratt, Daniel, obit., xii, 605.
- Pratt, Daniel D., obit., ii, 586.
- Pratt, James T., obit., xii, 606.
- Pratt Public Library, vii, 509.
- Pratt, Thomas T., obit., xvi, 649.
- Prause, Dr., xii, 671.
- Pray, Ebenezer H., obit., i, 622.
- Prayer-Book, revision of the, ii, 24.
- Przask, Dr. A., iv, 60.
- Precious metals, xiii, 529; xv, 152.
- Precious stones, xviii, 638.
- Predegram, A., obit., ii, 587.
- Preec, observations, viii, 526; his address, xiii, 46.
- Preller, Friedrich, obit., iii, 660.
- Prendergast, Gen., xi, 115.
- Prentiss, Mrs. E. P., obit., iii, 644.
- Presburg, illustration, ii, 57.
- Presbyterians, statistics, General Assembly reports, etc., in each volume; review of declarations on slavery since 1861, i, 670; charge of heterodoxy against Rev. D. J. MacDonell in Canadian church, i, 672; ii, 647; subject of union between different branches, i, 667; ii, 642; on the formula for admission of elders, ii, 647; iii, 698; on church and state in Scotland, ii, 648; iii, 699; viii, 660; x, 702; general council of the alliance, ii, 650; vii, 673; trial of Rev. J. M. See for admission of a woman to the pulpit, iii, 693; heresy of Rev. J. Miller, iii, 693; charges against Rev. W. C. McCune, 693; new basis of representation, 694; heresy of Rev. J. Robertson Smith, iii, 699; iv, 736; v, 634; revision of subordinate standards, iii, 699; heresy trial of Rev. David Macrae, iv, 737; subject of preaching by women, v, 630; on worldly amusements, iv, 734; v, 630; admission of a polygamist in India, v, 631; charges against missionaries at Blantyre, v, 633; vi, 768; vii, 706; case of Rev. W. L. MacFarlane on the authority of the Bible, vi, 769; alliance of India, 771; question of admitting a colored preacher to presbytery, vii, 702; restoration of fraternal relations between Northern and Southern assemblies, vii, 702; ix, 667, 668; question of instrumental music in churches, vii, 704; xi, 775; xii, 695; convention of opponents to it, viii, 656; memorial to United Presbyterian assembly on, 655; subject of union between the Cumberland and Lutheran churches, viii, 658; question of modifying the creed in England, 660; Sabbath observance, vii, 706; ix, 667; proposed monument to Calvin in Washington, ix, 667; validity of baptism in the Roman Catholic Church, x, 698; quarter-centennial of the Southern church, xi, 769; heresy of Dr. Woodrow concerning evolution, xi, 769; case of Dr. Muir, xi, 774; question of marriage with a deceased wife's sister, xii, 693, 698; preparations for the centennial celebration of the Southern church in 1888, xii, 694; Waldensian Church of Italy, vi, 771; Walloon churches, vii, 709; the Briggs trial, xviii, 650.
- Presbyterian Alliance, the, ii, 650; ix, 673.
- Prescott, Albert B., port., xvi, 33.
- Prescott, B. F., ii, 545; iii, 602.
- Prescott-Shepherd, Marie, obit., xviii, 565.
- Presidency of Mexico, three claimants to, ii, 512.
- President of the United States, proposed amendments on the election and length of term of, i, 132-138, 158-166; salary of the, i, 171; third term of, i, 167; executive acts, where performed, i, 169; election of, see Elections, Presidential; messages of, see Congress.
- Presidential elections, xiii, 799 *et seq.*
- Presidential electors, vii, 147.
- Presidential Inability, vi, 414.
- Presidential succession, xi, 229.
- Presidents, absences of, from Washington, i, 169-171.
- President's message. See Congress, in every volume.
- Press, the suppression of newspapers, i, 709; laws in France, ii, 304-308; trial of Cassagnac, 305; colportage bill, iii, 343; amnesty for offenses of, 343, 344; bill on, vi, 311; in India, restrictions on, iii, 33; the native, 435; laws in Japan, iii, 462; silenced in Ecuador, iii, 261; censorship of, in Prussia, ix, 708; associations, xi, 635.
- Pressense, E. D., obit., xvi, 684.
- Prestan, Pedro, xi, 44.
- Preston, David, obit., xii, 606.
- Preston, John, obit., xii, 606.
- Preston, John S., sketch, vi, 771.
- Preston, Rachel D., xi, 2.
- Preston, Seephaniah, obit., ii, 587.
- Preston, Thomas S., obit., xvi, 650.
- Preston, William, obit., xii, 606.
- Pretenders, French, bill to exile, viii, 366; xi, 355.
- Pretis-Cagnodo, Baron, obit., xv, 687.
- Pretoria, treaty of, ix, 111.
- Price, Bonamy, sketch, xiii, 667.
- Price, Roger, in Africa, iii, 362.
- Price, Sterling, x, 423.
- Prime, E. D. G., obit., xvi, 650.
- Prime, E. G., x, 704.
- Prime meridian conference, ix, 54, 777.
- Prime, Rufus, obit., x, 654.
- Prime, Samuel I., obit., x, 703.
- Primogeniture, law of, x, 521.
- Prince Edward Island, viii, 660; x, 704; xviii, 657; plans to establish communication with, 704; province of, xiii, 706; xvi, 762.
- Prince, Henry, obit., xvii, 568.
- Princes, expulsion of, from France, xi, 855.
- Princteau, Gen., obit., i, 641.
- Princeton Telescope, vii, 41.
- Prince, W. E., obit., xvii, 568.
- Prindle, E. H., obit., xv, 661.
- Pringsheim, theory of, vi, 111; experiments of, ix, 93.
- Printing, improvements in, i, 518; vi, 548.
- Printing-office, United States Government, xiii, 880.
- Prior, Thomas Abiel, obit., xi, 725.
- Priscilla, the yacht, x, 791.
- Prisons, in New York, i, 597, 605; Maryland, ii, 478; Massachusetts, ii, 482; vi, 537; Kentucky, iv, 539; Texas, iv, 831; California, vi, 82; viii, 78; reformatories in Michigan, vii, 554; at Louvain, viii, 497; contract system, iv, 600, 653, 665; the separate system, vii, 675; English system, viii, 403; associations and congresses, xii, 704; reform, 701; United States Government, 704. See also Convict Labor and the

- articles on the States in each volume.
- Prisons, Southern, during the civil war, i, 184-192.
- Pritchard, Charles, obit., xviii, 585.
- Pritchard, Rev. Charles, xi, 52, 57.
- Pritchett, observations by, iv, 52.
- Prizes, astronomical. See under Astronomy, in each volume.
- Prjevalsky, Col. N. M., explorations of, in Asia, ii, 326; iii, 359, 360; v, 289; ix, 348; x, 397; xi, 376; xii, 309; obit., xiii, 667.
- Pron, ix, 115.
- Probasco, Henry, sale of his collection of pictures, xii, 280.
- Processes, new, xviii, 136.
- Proctor, Redfield, iii, 815, 816; sketch and port., ix, 802.
- Proctor, Richard Anthony, sketch and port., xiii, 707.
- Profit-sharing, xvii, 670.
- Prohibition, viii, 661; by statute, 664; by constitutional amendment, 666; license, 663, 668; effects of enforcement, 668; constitutionality, 669; arguments for, 670; in Iowa, ix, 411, 429; x, 499; xii, 393; in parts of Georgia, x, 410; in Maine, ix, 463; xii, 453; in Kansas, xii, 406; in Kentucky, 411; in Michigan, 506; in Missouri, 516; in Rhode Island, 713; in Tennessee, 758; National Convention, ix, 774; x, 499. See the articles on States of the Union.
- Prohibition Reform party, i, 780; ix, 774.
- Projectiles, xiii, 795.
- Prokesch-Osten, sketch, i, 675.
- Propaganda Fide, congregation of, seizure of property of, viii, 692; ix, 699.
- Propagation of the Gospel, Society for, xiv, 10.
- Propeller, elliptic, xvi, 704.
- Propeller-screws, ill., xii, 655.
- Property Rights of Foreigners in Mexico, viii, 538; great estates in, viii, 538.
- Prophetic Conference, xii, 705.
- Propulsion by electricity, xviii, 280.
- Protais, Alexandre Paul, xii, 275.
- Protection in Germany, iv, 435; x, 415; in France, v, 284; in Mexico, v, 14; in Canada, vi, 217; Speaker Carlisle on, viii, 94. See Duties and Tariff.
- Proteids, sources of the, ii, 94.
- Protestant Episcopal Church, statistics, reports of boards and societies, conventions, etc., in each volume; subject of establishing brotherhoods and sisterhoods, ii, 652; canon on deaconesses, v, 638; question of free churches, 638; committee on "liturgical enrichment" of the Prayer-Book, vi, 772; work among Indians, x, 705; among the Jews, xii, 707; church reunion, xi, 778; xii, 707.
- Proteus, the destruction of, viii, 421; ix, 36.
- Protich, Kosta S., obit., xvii, 602.
- Prout, hypothesis of, vi, 42.
- Prout, Skinner, obit., i, 641.
- Prouty, David, obit., xvii, 568.
- Providence, xiii, 170.
- Provisions, commerce in, iv, 167.
- Provo, xiv, 157.
- Prudhomme, J. F. E., obit., xvii, 568.
- Prussia, statistics, ministry, legislative proceedings, etc., under Prussia in each of the first six volumes; in the others under Germany; views in, i, 679; ii, 655, 657, 658; sources of revenue, i, 678; Catholic dissatisfaction, 679; bill for the purchase of railroads, 679, 680; resignation of Delbrück, 680; incorporation of the Duchy of Lauenburg, 680; new constitution of the state church, 680; bill for the administration of Catholic Church property passed, 680; bill passed making German the official language in Poland, 680; deposition of Catholic bishops in Münster and Cologne, 680; result of ministerial crisis, ii, 657; violent discussions, 658; conflict between the Government and the Catholic Church, 659; cabinet resignation, iii, 705; laws relating to religious orders and congregations, 706; resignations of liberal and appointment of conservative ministers, iv, 740; sketches of Robert Victor Puttkammer, Robert Lucius, and K. H. Bitter, 740; retirement of the minister of justice, 740; sketch of Dr. Heinrich Friedberg, 740; railroad bill passed, 742; general synod, 742; debates on the conflict of church and state, v, 639; vi, 775; Prof. Virchow's views, v, 640; violent debate on the Jewish question, 640; anti-Semitic movement, 640; vi, 776; negotiations with Rome, vi, 775; bill for remission of taxes, 775; ministerial changes, 776; railroads bought by the Government, 776.
- Prussia, General Synod of, iv, 742.
- Prussian and German Governments, antagonism between, iii, 378.
- Prussian State Council instituted, ix, 356.
- Pruyn, Robert H., obit., vii, 642.
- Pryer, James, obit., xvii, 568.
- Psammeticus, King, ix, 20; inscription of, x, 35.
- Psychical research, xii, 509.
- Ptilolite, xi, 139.
- Ptolemy II, building founded by, x, 35.
- Ptolemy V, coin of, x, 33.
- Ptolemy Philadelphus, stela of, ix, 20.
- Ptomaines, discovery of, vii, 94; ix, 663; x, 299.
- Ptoun, Mount, discovery at, x, 37.
- Public buildings, xvi, 234.
- Public Documents, in first six volumes.
- Public lands, ix, 215; xiii, 466; unlawful occupancy of, x, 241, 244.
- Public Meetings, bills on, in France, v, 283.
- Pucido, x, 776.
- Pueblo, Col., xvi, 166.
- Pueblo Indians, the, xii, 545.
- Pueblos, the, ix, 17.
- Puerto Rico, xvi, 243; xvii, 218; xviii, 252.
- Pug-dogs, ix, 263.
- Puga, Dr., x, 687.
- Pugh, George E., sketch, i, 691.
- Pulgar, Gen. V., x, 776.
- Pul-i-Khisti, x, 9; battle of, 10.
- Pulsifer, Royal M., sketch, xiii, 649.
- Pumpelly, Raphael, x, 404.
- Puna, the, ix, 543.
- Pundit, A—K—, the, explorations of, x, 396.
- Punishment of crime, Congress on, xvi, 810.
- Purcell, J. B., sketch, vii, 726; viii, 672. See Bishops, Liability of, etc.
- Purdue University, ill., 407.
- Purdy, Alfred S., obit., xi, 697.
- Puritan, the yacht, x, 791.
- Puscy, Edward B., sketch and portrait, vii, 711.
- Putjata, Capt., explorations by, ix, 349.
- Putnam, F. W., xii, 16.
- Putnam, George, obit., iii, 644.
- Putnam, John P., obit., vii, 642.
- Putnam statue, the, xiii, 240.
- Putnam, William L., nominated, xii, 510.
- Puttkamer, A., obit., xviii, 565.
- Puttkammer, R. V., sketch, iv, 740.
- Pütz, W., obit., ii, 609.
- Pylorus, resection of the, ix, 748.
- Pyramid, in Mexico, viii, 536.
- Pyramids, the Egyptian, vii, 258; xiv, 24; opening of, 260; of Senefru, 262; ix, 21; opening of, vii, 260; illustrations: section of the great, iii, 266; the great, vii, 258; of Mejdoum, vii, 262; measurements of the great, ix, 21; tools used for, 21; traces of an attempt to destroy, 21.
- Pyrenees, orography of the, xii, 213.
- Pyronome, x, 345.
- Quackenbush, J. V. P., obit., i, 622.
- Quackenbush, S. P., obit., xv, 661.
- Quail in the United States, x, 389.
- Quain, Sir John, obit., i, 641.
- Quarantine, National, xviii, 217.
- Quarantine rules, v, 12.
- Quartley, Arthur, obit., xi, 697.
- Quartzite, in Dakota, xii, 219.
- Quebec, Province of, viii, 674; xiii, 710; xiv, 723; xvi, 765; xvii, 676; xviii, 660; political controversy in, iv, 319; ix, 676; x, 706; small-pox in, 706; xi, 778; inundations, 778; opposition to the conservative government of the Dominion, 779; labor movement, 779; xii, 707; railway policy, 708; incorporation of the Jesuits, 708; exodus from, xviii, 661.
- Quebec, city of, its recent growth, xii, 127; illustration, ii, 254.
- Quebracho, ix, 272.
- Queen, Walter W., obit., xviii, 566.
- Queensland, ix, 60; x, 65; xi, 64; xii, 47; xiv, 55; xv, 47; xvi, 62; xvii, 44; xviii, 58; gold discoveries in, xi, 64.
- Quesada, Marshal, sketch, xiv, 668.
- Quesneville, G. A., xiv, 669.
- Quetel, C. A., sketch, xiii, 668.
- Quetta, district of, ix, 6; railway 6; x, 12.
- Quick, Robert H., obit., xvi, 684.
- Quicksilver-Mines, viii, 523.
- Quimby, E. T., obit., xv, 661.
- Quinby, Isaac F., obit. and port., xvi, 650.



- Quincy, Edmund, obit., ii, 587.  
 Quincy, Ill., recent growth of, xii, 127; xiii, 170.  
 Quincy, Mass., xv, 142.  
 Quinine, new preparation of, x, 299; substitute for, 300.  
 Quinn, William, obit., xii, 606.  
 Quinoline, x, 300.  
 Quinton, James W., obit., xvi, 684.  
 Quirigna, ruins of, xi, 24.  
 Quito, bank of, its failure, x, 302.
- Rabbit pest, the, xiii, 61.  
 Race, George W., obit., vi, 687.  
 Races, conflicts of, in Austria, vii, 47, 53.  
 Rachout, Henry, xii, 276.  
 Racine, recent growth of, xii, 128.  
 Rackarock, new explosive, x, 346.  
 Radan, M., x, 54.  
 Radde, Dr. G. J., xii, 307.  
 Kadetzki, Gen., sketch, ii, 671.  
 Radford, W., obit., xv, 661.  
 Radiation, terrestrial, xii, 488.  
 Radick Islands, x, 38.  
 Radiophony, vi, 787.  
 Radomir, capture of, x, 729.  
 Rae, John, obit., xviii, 585.  
 Raff, Joachim, obit., vii, 647.  
 Rafferty, Thomas, sketch, xiii, 650.  
 Raffray, explorations by, iii, 365; iv, 411.  
 Raft, lumber, xii, 257; xiii, 305.  
 Ragazzi, Dr., his mission, xiii, 3.  
 Rahway, bankruptcy, iv, 669.  
 Raikes, Robert, v, 674.  
 Railroad Land Grants, i, 692.  
 Railroads riots. See Labor Strikes and Riots.  
 Railroad transportation, xii, 258.  
 Railroads financially considered, xii, 326.  
 Railroads, taxation of, xiii, 261; tax cases, xviii, 690; in 1893, xviii, 306; speed on, xviii, 286; safety of life on, xviii, 214.  
 Rails in the United States, x, 389.  
 Railway, submerged, xv, 286.  
 Railways, electric, viii, 675; illustrations, 676, 678, 680.  
 Railways, Elevated, iii, 284; Vienna circular, vi, 247; bill on taxes of New York, vii, 600; investigation of charges, 602; case of Judge Westbrook, 602, 603; decision on damages to property by, 616; five cent fare bill, ix, 147; law of accidents, xi, 179; cable, xi, 122.  
 Railways, government control of, in Germany, i, 344, 679; ii, 352; iv, 441, 742; vii, 349; viii, 391, 394; in Italy, i, 418; in Hungary, viii, 40; in Denmark, vi, 209; Danube and Turkish, viii, 43; first, in China, i, 111; ii, 102; closed in China, vi, 107; Indian, vii, 414; trans-Caspian, xi, 375; xii, 6; trans-Siberian, xi, 375; new system of mountain, vi, 246; trans-Andean, iii, 20, 291; Himalayan, vii, 284; proposed Sahara, iv, 27; v, 293; Euphrates, viii, 306; in Australia, v, 38, 40; vii, 42; x, 327; in Persia, vi, 732; in New Zealand, vii, 46; in South America, iii, 63, 677; v, 59, 65; vii, 682; viii, 66; xi, 752; in Central America, iii, 417; iv, 460; v, 199; Canada Pacific, v, 214, 221; vii, 217; viii, 87; ix, 268; completion of Canadian Pacific, x, 104, 133, 327; in Mexico, xi, 556; xii, 502, 503; Tehuantepec ship, xii, 502; State regulation of, law on, xii, 467-470.
- Railways, Improvements in, engines, ii, 494, 496; brakes, ii, 496; signals and speed indicators, i, 252, 516; car-wheels, i, 516; bridges, v, 242, 244; improvements, vi, 544; American engines and cars, iv, 188; constant-circuit rail system, iv, 602; plan for a ship, iv, 345; narrow-gauge, iii, 279; L'Artigue's single railway, with illustration, xi, 320; screw-propeller, xi, 742; mountain, see Mountain Railways.
- Railways of the United States, vii, 712; statistics, v, 242; viii, 336; Northern Pacific, vi, 130; viii, 613; completion, viii, 781; Southern Pacific, iii, 571; vi, 513; Transcontinental, viii, 316; famous fights between, iv, 158, 159; war of rates, vii, 560; suits on, ii, 754; vii, 456, 464; priority of liens, iv, 842, effect of freight rates in Vermont, iv, 840; memorial on, from Vermont Grange, iv, 841; board to supervise, iv, 601, 602; anti-Monopoly League, vi, 652; decision on taxation of, viii, 341; in California, ix, 103; in Montana, 536; validity of bonds in aid of, iii, 580; v, 309; ix, 42, 43; interstate commerce bill, vi, 172; reductions on freight, viii, 152; N. Y. commission act, vii, 600; business in 1884, ix, 323; land grants to, ix, 214; litigation in Pennsylvania, xi, 746; investigation, Pacific, xii, 193; interstate commerce act, 269. See also Financial Review, and Railway Service in the United States.
- Railway service in the United States, ix, 677; diagrams showing increase of, 677, 678; table comparing the railways of the United States and Europe, 680; freights, 683.
- Raimondi, A., obit., xv, 687.  
 Rain and floods in Pa., xviii, 610.  
 Rain, artificial, xvi, 765.  
 Rainfall, annual, of United States, with map, viii, 528; affected by forests, 351; xi, 545; extent of, 542; observations of, in the Carnatie, xii, 490; connected with sun-spots, 490; in Italy, 491; xiii, 535; xiv, 546; xv, 535.  
 Rains, Gabriel J., sketch, vi, 788.  
 Rajah of Pooree, trial of, iii, 438.  
 Raleigh, xiii, 171.  
 Ralston's cotton-cleaner, vi, 265.  
 Ram, the naval, xviii, 283.  
 Rambaut, T., obit., xv, 661.  
 Rameau, Septimus, obit., i, 641.  
 Ramée, Daniel, obit., xii, 636.  
 Rameses II, statue of, ix, 20; wars of, 28; his mummy, xi, 29; illustration, 30; xii, 18.  
 Rameses III, sphinx bearing the name of, x, 20; xi, 30; xii, 18; his mummy, xi, 29.  
 Ramic, cultivation and manufacture of, xviii, 661.
- Rampolla, Cardinal, xii, 399.  
 Ramsay, Prof., theory of, vi, 350.  
 Ramses, city of, x, 35.  
 Ramsey A., sketch, iv, 834.  
 Ranavalona II, Queen of Madagascar, car, death of, viii, 507; ix, 460.  
 Randall, A. M., obit., xii, 607.  
 Randall, D. A., obit., xi, 697.  
 Randall, J. W., obit., xvii, 568.  
 Randall, R. R., statue of, x, 361.  
 Randall, Samuel J., sketches, i, 692; iv, 748; portrait, iv, 193; sketch and port., xv, 751.  
 Randi, Lorenzo, obit., xii, 636.  
 Randolph, T. F., obit., viii, 593.  
 Rangabé, A. R., obit., xvii, 602.  
 Range finder, xv, 580.  
 Ranke, Ferdinand, obit., i, 641.  
 Ranke, Leopold von, sketch and portrait, xi, 783.  
 Ranvier, experiments by, vi, 753; viii, 60.  
 Rao, Sir Madhava, obit., xvi, 684.  
 Raon incident, the, xii, 327.  
 Raouf Pasha, x, 317.  
 Raoult, researches by, vi, 100; x, 152.  
 Rapa Nui. See Easter Island.  
 Rapallo, C. A., obit., xii, 607.  
 Raphael, sale of works of, x, 360, 366.  
 Rapid transit, xvi, 591.  
 Rapiéff, invention by, iii, 271.  
 Rarefied air, effects of, ix, 541-545.  
 Ras Aloula, victory, x, 319; xii, 2.  
 Raschid Bey, x, 317.  
 Raske, experiments, xii, 671.  
 Raspail, F. V., obit., iii, 660.  
 Rassam, Hormuzd, discoveries by, vi, 22; vii, 263; ix, 18; xi, 25; xii, 17.  
 Ratazzi, Madame, xii, 294.  
 Rathbone, Justus H., x, 518; sketch, xiv, 645.  
 Ratib Pasha, defeat of, xi, 507.  
 Rau, Charles, obit., xii, 607.  
 Rau, Heribert, obit., i, 641.  
 Raumer, Rudolf von, obit., i, 641.  
 Ravensworth, obit., iii, 660.  
 Rawle, W. H., sketch, xiv, 645.  
 Rawlins, John A., obit., i, 622.  
 Rawlins, Wyo., xv, 142.  
 Rawlinson, H., ix, 18; x, 38, 39.  
 Rawson, George W., obit., ii, 587.  
 Rawul Pindi, durbar held at, x, 12.  
 Ray, C. S., experiments by, vi, 748, 751.  
 Ray, John, sketch, xiii, 650.  
 Ray-Lankester, x, 150.  
 Ray, P. H., expedition, vi, 325.  
 Ray, Ossian, obit., xvii, 569.  
 Rayleigh, Lord, ix, 45.  
 Raymond, battle at, x, 425.  
 Raymond, John H., obit., iii, 644.  
 Raymond, R. R., obit., xiii, 650.  
 Raynal, David, viii, 357, 367.  
 Rayner, Joseph, ix, 651.  
 Reynolds, Capt. W. F., x, 401.  
 Read, Sophia H., obit., v, 595.  
 Reade, Charles, obit. and portrait, ix, 687.  
 Reading, growth of, xi, 181.  
 Real estate, holding of, by foreigners, in Illinois, xii, 375.  
 Reason, C. L., obit., xviii, 566.  
 Reavis, Logan U., sketch, xiv, 645.  
 Reay, Baron, obit., i, 641.  
 Rebellion, war of the, collection of tax for expenses of conducting, iv, 429.  
 Receiver, xvii, 677.

- Receivists, ix, 57; law, x, 342, 378.
- Reciprocity, treaties, congressional action, x, 238; between Mexico and United States, viii, 535; of 1854, xii, 281; xiii, 278; xiv, 278; xv, 202 *et seq.*; xvi, 94, 244; rejection of, xvi, 856; treaties, xvi, 832; convention, in Minn., xviii, 496.
- Reconstruction. See President's messages, i, 681; ii, 660, 662.
- Red Cross societies, and the laws of war, vii, 715; xi, 783; twentieth anniversary, xi, 785.
- Red light, the, viii, 525; connection with sun-color, *ibid.*; theories on, 526; ix, 53; x, 48, 581; xi, 54; fading out of, xi, 546.
- Red men, the, iv, 846.
- Red Prince, the, x, 382.
- Red Sea coast annexed to Egypt, v, 235; trade of, ix, 413; European settlements, ix, 339.
- Red Sea expedition, the, x, 504-506.
- Red Sunsets. See Red Light.
- Redding, J. R., obit., xvii, 569.
- Redemptorist Order, xviii, 674.
- Redfield, Heman J., obit., ii, 587.
- Redfield, Isaac F., sketch, i, 692.
- Redfield, J. S., sketch, xiii, 650.
- Redgrave, Samuel, obit., i, 641.
- Red-gum tree, the, viii, 545.
- Redistricting in Connecticut, vi, 198; in New York, viii, 569; in Pennsylvania, viii, 624.
- Redpath, James, obit., xvi, 651.
- Reichenbacher, F., invention by, xi, 140.
- Redwitz, Oskar, obit., xvi, 685.
- Reed, Henry, obit., xvii, 569.
- Reed, Joseph, obit., ii, 587.
- Reed, Myron W., xi, 193.
- Reed, Thomas B., sketch and port., xiv, 724.
- Reed, William B., obit., i, 622.
- Reese, J., fusion-disk of, vi, 313.
- Reese, J. J., obit., xvii, 569.
- Reeve, I. V. D., obit., xv, 662.
- Reflection and refraction, illustration, xi, 569.
- Reflectors, mounting, ix, 47.
- Reform in the Civil Service, viii, 682; examinations, 684; New York Board, 686; classes of the service, 686; rules, 688; subjects, 688, 689; ix, 226, 690.
- Reformed Church in France, threatened schism in, i, 695.
- Reformed Churches, statistics, reports of synods, classes, etc., in every volume but vi; decision in regard to the right of a church to its property after breaking connection with the denomination, i, 694; establishment of Southern congregation, 695; dissensions between orthodox and liberal sections in France, 695, 696; confirmation of the old declaration of faith in Holland, 696; Dutch Church in South Africa, ii, 672; case of Rev. Dr. A. Blaauvelt, 671; quarto-millennial anniversary in New York, iii, 720; confession of faith, iv, 749, 750; general council of churches holding the Presbyterian system, v, 652; subject of Masonry and other secret societies, vii, 716; viii, 681, disapproval of the action of congress on Chinese immigration, vii, 718; of the creed, 719; form for baptism, viii, 68; plan for conspectus of church legislation of the last three centuries, ix, 689; liturgy adopted, 689; x, 708; xii, 710; confederation of churches in Germany, ix, 689; mission at Tokio, x, 708; the revised version of the Bible, xi, 787; commissioners to Presbyterian missions in India, xi, 787; subject of union with the Presbyterian Church, xii, 709; researches among documents and memoranda relating to the church history in Holland, 709; question of the status of a church in Cayuga, 709; differences in doctrine among the churches of Germany, 711.
- Reformed Episcopal Church, i, 696; ii, 673; iii, 721; iv, 750; viii, 682; peculiar tenets of, i, 697; first church in England of, iii, 721; admission to Anglican pulpits of clergymen of, iv, 30; x, 708; centennial celebration of the adoption of the American Episcopal Prayer-Book, 709; establishment of a theological seminary in Philadelphia, 709; xii, 711; comparison of statistics of 1885 and 1887, 711; endowment-fund of the seminary, 711; eleventh council, 712; subjects of marriage and divorce, and temperance, 712; general synod of Great Britain and Ireland, 712; xvi, 769.
- Reforms, proposed in Russia, vi, 799; in Germany, vii, 353; acts in Victoria, vi, 45; electoral, in Brazil, vi, 71; proposed electoral, in Great Britain, iv, 454.
- Refraction and reflection, illustration, xi, 569.
- Refunding the national debt, history of, iv, 751.
- Regel, explorations by, ix, 349.
- Regicides, attempted, iii, 292, 293, 379-381, 458.
- Register, C. E., nominated, xiii, 265.
- Registration of letters, xii, 688.
- Registration of voters, x, 321; laws for, xii, 246.
- Registry laws, xiv, 826.
- Regla Falls, Mexico, xvi, 521.
- Regnaud, M., ix, 662.
- Regnault, H. V., obit., iii, 660.
- Rehn, F. K. M., xi, 346.
- Reichard, Paul, x, 393-394.
- Reichenbach, H. G., sketch, xiv, 669.
- Reichert, Dr., experiments, vii, 690; xii, 679.
- Reichlin-Meldegg, Freiherr von, obit., ii, 609.
- Reichstag, the. See Parliament, the German, and Germany.
- Reid, Sir James, obit., i, 641.
- Reid, Mayne, obit., viii, 603.
- Rein-grip, xvi, 706.
- Reinhart, Karl A., obit., ii, 609.
- Reinke, A. A., sketch, xiv, 645.
- Reinsberg, Baron. See Düringsfeld, i, 238.
- Reisch, H., x, 155.
- Reinsdorf, Frederick A., ix, 358.
- Reischach, H. A., obit., i, 641.
- Reiset, experiments by, viii, 120.
- Reith, Mr., xii, 483.
- Reitschel, statue by, x, 361.
- Relics, domestic, xiv, 27.
- Religion, intolerance in the Tyrol, i, 59; iv, 67; v, 45; in Belgium, i, 71; v, 53, 54; in Bohemia, iv, 351; in China, i, 110; iii, 101; v, 690; in Corea, iii, 738; in Spain, i, 705, 729, 731; in Turkey, i, 261, 709, 759; v, 685; secularizing measures in Brazil, iii, 63; military honors refused at funerals where religious services are forbidden, i, 818; public aid to sects, i, 133, 138, 172-180, 261, 597; Department of Worship in France, vi, 305; intervention in cases of, vii, 627; legislation in Russia, viii, 708; coercion in Russia, ix, 710; Protestants in Egypt, ii, 284; Christians in India, iv, 495; New Hampshire amendment on, i, 591; persecution of Jews, see Jews; of Mussulmans, iii, 795; in Germany, ix, 356, 361; xi, 390; in Japan, ix, 419; statistics of, xvi, 843. See also Churches and Education.
- Religion, recent works on. See Literature, in every volume.
- Religion, Society for the Liberation of, from State Control, iv, 34; v, 17; vi, 14; viii, 9; ix, 11; x, 22; xi, 17; xii, 13.
- Religious Orders, xviii, 660; expelled from France, v, 658; proposal to settle, in Spain, v, 673.
- Rembrandt, pictures by, x, 366; xi, 346.
- Remsen, I., experiments by, vi, 99; viii, 121.
- Renan, Ernest, sketch and port., xvii, 679.
- Renard-Krebs balloon, ill., ix, 72.
- Renfro, impeachment of, iv, 423.
- Renier, Charles A., obit., x, 667.
- Reno, Marcus A., sketch, xiv, 645.
- Reno, Nev., xvi, 168.
- Renouf, Émile, pictures by, x, 367; xi, 346.
- Renouf, P. le Page, researches by, vii, 256; xi, 32.
- Renville, Gabriel, obit., xvii, 569.
- Reorganized Church of Jesus Christ of Latter-day Saints, xviii, 668.
- Repeater watch, x, 610.
- Reporting-machine, xv, 818.
- Representation, demand in Japan for popular, iii, 462, 463.
- Representation in the United States, xii, 245.
- Representatives, apportionment of, vii, 142; "Alabama paradox," 143.
- Reprive, extraordinary case of, iii, 818.
- Reproduction, xi, 763.
- Repsold's method of recording transits, xiii, 47.
- Repsolds, the, of Hamburg, ix, 47.
- Reptile fund, the, and reptile press, vii, 358.
- Republican party in Norway, vii, 771.
- Republican party, divisions of, in New Jersey, vii, 605, 610; policy of, x, 433.
- Rerodos in St. Paul's, xiv, 12; xvi, 11.



- "Rescue and retire" policy, of Gladstone, ix, 372.
- Researches and experiments, iii, 722.
- Reservations of public lands, xiii, 471.
- Resin, separation of, x, 155.
- Resisting medium, xiii, 56.
- Resonant Alloys, i, 522.
- Resorcin, ix, 272.
- Respighi, Lorenzo, sketch, xiv, 669.
- Respiration, xi, 759; xii, 675; xiii, 692; xiv, 705; xv, 723; xviii, 626.
- Respiratory organs, xii, 753.
- Resumption of specie payments, iv, 763.
- Retorts, platinum, i, 94.
- Retriever, the wavy-coated, ix, 257.
- Returning Boards. See Electoral Commission.
- Reuleaux, Prof., experiments in cinematrics, i, 515.
- Reunion of Protestant Christendom, action in reference to, xii, 707-710.
- Reunion of Churches, xvii, 680.
- Reuss, Edward, obit., xvi, 685.
- Reuter, Baron Jules, xi, 636.
- Reveillère, Capt., xi, 378.
- Revenue and Tariff, viii, 193.
- Revenue Chart (U. S.), colored plate, ix, 784.
- Revenue-Cutter Service, vii, 584.
- Revenue districts, changes, viii, 780.
- Revenue reform, xiii, 194.
- Revillon, Tony, ix, 344; x, 378.
- Revillout, Eugene, researches of, vii, 262; x, 35.
- Revolt in Rio Grande do Sul, xviii, 101.
- Revolutionary plots in Russia, xii, 723; effect of, upon education, 724.
- Revolutionary War, claim of Georgia for money expended in, viii, 387; committee on claims, vii, 136.
- Revolutions. See Wars, etc.
- Rey, Paul, explorations by, vi, 330.
- Reykjavik, college at, iv, 314.
- Reynier, Emile, invention by, iii, 272; vii, 269.
- Reynolds, Emerson, experiments by, iii, 93; v, 86.
- Reynolds, Gen. John F., statue of, x, 362.
- Reynolds, Sir Joshua, exhibition of his pictures, x, 359, 360; sale, 361.
- Reynolds, L. K., obit., xviii, 566.
- Rgesholarsky, M., ix, 473.
- Rhalls, George, obit., viii, 603.
- Rhamsis, ix, 599.
- Rhett, R. Barnwell, sketch, i, 698.
- Rhode Island, statistics, State officers, legislative proceedings, political movements, etc., in each volume; views in, i, 701; ii, 675; amendments to the constitution, i, 699; xi, 787; property exempt from taxation, 699; election of Governor Lippitt by the Legislature, 701; re-election of Senator Anthony, 701; census returns, 702; registration law, ii, 674; act regarding married women's property, 674; election of Governor Van Zandt, 675; re-election, iv, 770; act limiting indebtedness of towns and cities, iii, 728; to protect children 728; decision in reference to a husband's right to vote in virtue of his wife's property, 732; nature of property qualification, iv, 771; question of abolishing the tribal authority of the Narragansetts, 772; act amending the statute relating to the constitution and organization of the General Assembly, vi, 789; election of Governor Littlefield, v, 654; re-election, vi, 790; vii, 721; election of Senator Aldrich, vi, 791; re-election, xi, 787; invitation to representatives of France, 790; divorce in, viii, 691; ix, 698; election of Governor Bourn, viii, 692; re-election, ix, 698; colonial town records, ix, 698; State boundary uncertain, x, 710; population, 710; election of Governor Wetmore, 710; election of Governor Davis, xii, 714; working of the prohibitory amendment, xi, 788; xii, 712; population, xv, 754.
- Rhodes, Mr., in South Africa, x, 86.
- Rhodes, J. N., obit., xv, 662.
- Rhodes, R. S., audiphone invented by, iv, 54.
- Riaz Pasha, vi, 237.
- Ribblesdale, Baron, obit., i, 641.
- Ribot, Augustin T., obit., xvi, 685.
- Ricasoli, Baron, on the Roman question, vii, 628; obit., v, 602.
- Ricco, A., observations by, xi, 546; viii, 22; xi, 546.
- Rice, opposition to culture of, v, 483; production in the United States, vii, 722.
- Rice, C. A. Thorndike, sketch and port., xiv, 645.
- Rice, Edmund, sketch, xiv, 646.
- Rice, Harvey, obit., xvi, 651.
- Rice, N. L., obit., ii, 587.
- Rice, S. J., obit., xv, 662.
- Rice Strait, ix, 36.
- Richards, Alfred B., obit., i, 641.
- Richards, Charles H., his picture collection, xii, 277.
- Richards, Ellen S., experiments by, ii, 502.
- Richards, W., experiments, v, 208.
- Richardson, C. A., obit., xvi, 651.
- Richardson, E., sketch, xi, 697.
- Richardson, H. H., obit., xi, 698.
- Richardson, I. S., obit., xvii, 569.
- Richardson, John P., renominated, xiii, 742.
- Richart, Laurent, picture collection of, xi, 344.
- Richmond, Ind., xv, 142.
- Richmond, recent growth of, xi, 182; the advance to, x, 557 *et seq.*
- Richmond, Duke of, x, 450.
- Richmond, George, xi, 345.
- Richmond, W. B., x, 365; xii, 277.
- Richter, Adrian L., obit., ix, 621.
- Richter, E., speech by, vi, 346.
- Richter, Hermann E., obit., i, 641.
- Richthofen, Baron, obit., xiii, 668.
- Ricketts, James B., obit., xii, 608.
- Ricord, Philippe, sketch, xiv, 646.
- Riddell, J. L., ix, 507.
- Ridderhold, Hans, obit., i, 641.
- Riddleberger, H. H., obit., xv, 662.
- Rider, James, obit., i, 623.
- Ridgeway, Col., x, 5, 8, 12.
- Riding. See Horsemanship.
- Ridsdale, Rev. Mr., ii, 18 *et seq.*
- Riecke, F. J. P., obit., i, 641.
- Riedeck, E., expedition, viii, 386.
- Riel, Louis, x, 124, 129; obit. and portrait, 711; sympathy for, 707, 713.
- Rifle-match, Wimbledon, viii, 418.
- Rifles, the Martini-Henry, Winchester, Berdan, and Soper, ii, 623, 624; illustrations, 623, 624; repeating, xii, 714; military, xiv, 734.
- Rights of married women, in Alabama, xii, 8; in Pennsylvania, 656. See Women.
- Riker, James, sketch, xiv, 646.
- Riley, C. V., his address, xiii, 44.
- Riley, Henry Chauncey, iv, 611.
- Riley, Henry H., sketch, xiii, 650.
- Riley, James, x, 579.
- Rimbaud, M., xii, 304.
- Ringer, Sidney, experiments by, vii, 691; viii, 633; ix, 661; x, 693; xii, 675.
- Rio Grande do Sul, conflict in, xvii, 66; xviii, 101.
- Rio Grande, troubles on the, ii, 712; iii, 555.
- Rion, James H., obit., xi, 698.
- Riots, Cœur d'Alène, xvii, 338.
- Riots, in Mississippi, ii, 528; in Colorado, v, 120; in Arkansas, vi, 31; in Kentucky, vii, 453; in New York in 1863, xi, 800; in Canton, viii, 128; in Cincinnati, ix, 630; in Belfast, xi, 403; in Amsterdam, xi, 607; in Belgium, xi, 81; xii, 66; in Austria, xii, 53; in Peru, xii, 661; anti-Christian, in China, xii, 117; railroad, xi, 341; religious, xi, 438; anti-Christian, xvi, 139; anti-Jewish, xvi, 349; labor, xiii, 747; religious, xvi, 373; in coke region, xvi, 717; in Paris, xviii, 324; in Roanoke, xviii, 752; labor, Franco-Italian, xviii, 327; labor, in Illinois, xviii, 398; religious, in India, xviii, 403. See Labor Strikes.
- Ripley, George, sketch, v, 657.
- Ripley, R. S., obit., xii, 608.
- Ripon, Marquis of, Viceroy of India, v, 384; his policy, vii, 416; his administration, x, 794.
- Ritchie, John, ix, 54; x, 55.
- Ritschl, Albrecht, sketch, xiv, 669.
- Ritschl, Friedrich, sketch, i, 702.
- Ritter, Frederic L., obit., xvi, 652.
- Ritter, invention by, vi, 254.
- Ritualism, in the Anglican Church, i, 25; the confessional, ii, 17, 21; vestments, ii, 18, 19; controversy, vi, 15; trials for, iv, 31, 32, 33; vii, 14, 17; viii, 6; ix, 10, 11.
- River and Harbor bill, vii, 148.
- Rivers, African, singular rise of, iv, 406; other phenomena of, iv, 407.
- Rivers, fluctuations of, iv, 805; channel improvements in, v, 273; devices to prevent shifting of channels, v, 249.
- Rivers, the longest, xii, 316.
- Rivière, Briton, x, 359, 365; xii, 277.
- Rivière, Henri, obit., viii, 604.

- Riza Bey, mission of, xii, 79.  
 Roach, John, x, 760; sketch and portrait, xii, 716.  
 Road congress, xvii, 353.  
 Road conventions, xvii, 18, 357; xviii, 755.  
 Roads, wagon, in Idaho, xviii, 395.  
 Robber bands in Missouri, vii, 567.  
 Robbins, Chandler, obit., vii, 642.  
 Robecchi, L., xii, 304.  
 Roberts, Arthur, obit., xi, 725.  
 Roberts, C., experiments by, viii, 524.  
 Roberts, Sir Frederick, v, 6; vi, 87; x, 13; xii, 82. See *Afghan War*.  
 Roberts, Isaac, xi, 51.  
 Roberts, J., obit., xvii, 569.  
 Roberts, John J., obit., i, 642.  
 Roberts, Marshall O., sketch, v, 658.  
 Roberts, Milton J., obit., xviii, 566.  
 Roberts, Oram M., sketch, iii, 786, 787.  
 Roberts, S. W., obit., vii, 642.  
 Roberts, W. Chandler, xi, 536.  
 Robertson, C. F., obit., xi, 698.  
 Robertson, G. C., obit., xvii, 602.  
 Robertson, James B., obit., ii, 609.  
 Robertson, John, obit., xii, 609.  
 Robertson, W. H., appointment of, vi, 644.  
 Robiano, Eugene de, vii, 99.  
 Robie, Frederick, sketch, vii, 498.  
 Robilant, Count, xii, 397.  
 Robinson, Dr., ix, 27.  
 Robinson, A. P., obit., xviii, 566.  
 Robinson, G. D., ix, 471; x, 573.  
 Robinson, Sir Hercules G. R., sketch, v, 79; x, 87, 88, 134, 419; xii, 258.  
 Robinson, James Lowrie, iv, 690.  
 Robinson, J. S., obit., xvii, 569.  
 Robinson, John, proposed monument to, ii, 132.  
 Robinson, John, sketch, xiii, 650.  
 Robinson, Lucius, sketch, i, 606; obit., xvi, 652.  
 Robinson, Moncre, obit., xvi, 652.  
 Robinson, W. C. F., ix, 60.  
 Robinson, W. E., obit., xvii, 570.  
 Robinson, W. M., obit., xviii, 566.  
 Robinson, William S., obit., i, 623.  
 Rob Roy, the canoe, illustration, ix, 108.  
 Robson, B. R., obit., iii, 644.  
 Roca, Gen. Jules A., inaugural of, v, 22; x, 39; in command in Argentine Republic, xviii, 18.  
 Rochegrosse, Georges, x, 363; xi, 343; xii, 276.  
 Rochester, N. Y., recent growth of, xi, 182; view in, ii, 570.  
 Rochester, Thomas Fortescue, obit., xii, 609.  
 Rochholz, E. L., obit., xvii, 602.  
 Rock-cut tombs of Sidon, xii, 24; xiii, 27, 31.  
 Rockford, Ill., xv, 143.  
 Rock Island, Ill., xv, 143.  
 Rock-salt beds, discovery of, in Ontario, xii, 726.  
 Rockwell, Julius, sketch, xiii, 650.  
 Rodgers, C. R. P., ix, 54; obit. and port., xvii, 670.  
 Rodgers expedition, the, vi, 323; viii, 162.  
 Rodgers, Rear-Admiral John, sketch, vii, 722; x, 265.  
 Rodgers, Raymond P., vii, 107.  
 Rodney, C., monument, xiv, 265.  
 Rodney, G. B., obit., viii, 593.  
 Rodney, John, obit., xi, 698.  
 Rodrigues, J. C., x, 178.  
 Roc, E. P., obit. and port., xiii, 651.  
 Roebbing, John A., viii, 311, 313.  
 Roebbing, W. A., viii, 313.  
 Roemer, Jean, obit., xvii, 570.  
 Rogers Bey, obit., ix, 621.  
 Rogers, David L., obit., ii, 587.  
 Rogers, F., collection, xi, 347.  
 Rogers, Ferdinand, obit., i, 623.  
 Rogers, Henry, obit., ii, 609.  
 Rogers, J. E. T., obit., xv, 687.  
 Rogers, John, x, 362.  
 Rogers, micrometer-telescope of, i, 554.  
 Rogers, R., obit., xvii, 571.  
 Rogers, William B., port., xv, 576.  
 Rogier, C., obit., x, 661.  
 Rogozinski, x, 120, 122.  
 Rokitsanski, Baron von, iii, 732.  
 Roll, Alfred P., x, 363.  
 Rolland, P. C. A., obit., i, 642.  
 Roller-skates, ix, 736.  
 Rollet, Dr. A., ix, 618.  
 Rollins, E. H., obit., xiv, 647.  
 Rollins, J. S., sketch, xiii, 651.  
 Roloson, J. W., obit., xv, 662.  
 Romaine, W. G., obit., xviii, 585.  
 Roman baths, xiii, 24.  
 Roman Question, the, vii, 627.  
 Roman Catholic Church, in every volume; brief of the Pope to a German bishop, i, 703; aggressive measures of the Italian Government, i, 703, 704; superior instruction to be given only in Government schools, 703; theological students not exempt from military service, 703, 704; seizure of foreign colleges in Rome, 704; interference with services in Germany, 704; release and banishment of Cardinal Ledochowski, 704; deposition of the Bishop of Münster, 704; church property to be administered by Government, 704; church schools closed, 704; the Pope to the Bishop of Paderborn, 704, 705; arrest of pilgrims at Marpingen, 705; trial of Bishop Janiszewski, 705; University of Paris, 705; festival of Lourdes, 705; liberty of worship discussed in Spain, 705; the Pope's brief to Spanish bishops on maintaining the Concordat, 705; anti-Catholic measures in Russia, 705, 706; return to Turkey of the banished Armenian Patriarch, 706; monastery founded in Scotland, 706; the public-school system in the United States, 706, 707; liberal movements in the Spanish-American republics, 707; Brazil, anti-clerical attacks, 707; missionary martyrs, 707; necrology, 707; ii, 682; iii, 738; iv, 774; v, 659; x, 713; xi, 789; the Pope's decree inserting certain words in the creed of Pius IV, ii, 676; allocation on the situation, 677, 681; clerical abuses bill, 681; episcopal jubilee of Pius IX, 681; seizure of churches, 681; condition of the Church in various countries, 682; death of Pius IX, iii, 732; election and coronation of Leo XIII, 732; restoration of the hierarchy in Scotland, 732; the Pope's policy foreshadowed, 733; intercourse with German and Swiss Governments, 736; negotiation with Russia in reference to the Catholic Poles, 736; no direct communication with King Humbert, 736; societies in Italy encouraged, 736; persecutions in Germany, 736; churches in Switzerland transferred to Old Catholics, 736; clerical cases in the United States, iii, 737; affairs in Colombia, 738; persecutions in Corea, 738; encyclical against socialism, iv, 773; schisms in the Eastern churches, 773; opposition to the Ferry laws, 773; operation of the Falk laws, 773; Italian civil-marriage law, 774; school-conflict in Belgium, 774; confraternities in Brazil, 774; New York cathedral, 774; Italy, v, 658; suppression of religious orders in France, 658; agreement with the Russian Government, 658; the Pope's position in Rome, vi, 792; seizure of property of the Propaganda, 792; order for its sale, ix, 699; disturbances at the removal of the body of Pius IX, vi, 792; jubilee proclaimed, 792; the papal theory of government, 792; agitation to restore the temporal power, 792; action of Prussia, 792; canonizations, 792; Knights of St. John, 792; hostility of the French cabinet, 793; action of the Irish clergy as to the Land League, 793; the Church in the United States, 793; vii, 726; litigation as to property, vi, 793, 794; semi-centennial of Sisters of Mercy, 794; official acts of Leo XIII, vii, 723; the encyclical, 723; case of Martinucci involving jurisdiction, 724; the Church in Germany, 725; French Government hostile, 726; viii, 694; seizure of property in Italy, viii, 692; the Vatican library open to historical students, 692; the Pope's letter on the Irish agitation, 693; case of Louise Lateau, 694; hostility in Belgium, 694; the American college at Rome, ix, 699; historical societies in America, 700; missions, 700; encyclical, *Immortale Dei*, x, 712; Order of Pius IX, x, 712; conflict with Orangemen in Newfoundland, x, 629; freedom of worship bill, ix, 700; x, 634; Church in China, 169, 170; relations with Russia, ix, 710; Concordat in Ecuador, 282; Golden Jubilee, xii, 716; Dr. McGlynn excommunicated, 717; envoy at the English court, 717; hierarchy established in India, 382.  
 Roman question, the, xvi, 388.  
 Roman relics, ix, 22, 23, 26.  
 Roman wall, xiii, 24.  
 Romance, an Egyptian, xi, 32.  
 Romanz, J. J., obit., ix, 621.  
 Rome, ancient mansions in, ix, 26; illustrations, ancient and modern map of, ii, 408; Piazza del Popolo, 409; the Lateran, 409; castle of St. Angelo, 411; capi-



- tol, i, 421; St. Peter's and the Vatican, 704; xiv, 157; discoveries in, xiv, 19.
- Rome, N. Y., xvii, 118.
- Romilly, H. H., ix, 639.
- Rondel, Frederic, obit., xvii, 571.
- Röntgen, invention by, iii, 545.
- Rook Island, x, 681.
- Roome, C., obit., xv, 662.
- Roon, A. T. E., Count von, sketch, iv, 774.
- Roosevelt, Mrs. C., obit., i, 623.
- Roosevelt, Theodore, obit., iii, 644.
- Roots, Logan H., obit., xviii, 566.
- Rope. See Cordage.
- Ropes, Ripley, obit., xv, 662.
- Rope-clamp, xvi, 708.
- Rope-walks, xiii, 248 *et seq.*
- Roraima, Mt., ix, 539; x, 400.
- Rosa, Carl A. G., sketch, xiv, 669.
- Roscoc, Sir Henry E., xii, 100.
- Rose, Sir John, sketch, xiii, 668.
- Rosebery, Countess, obit., xv, 687.
- Rosecrans, Gen. William S., retirement of, xiv, 222.
- Rosegg, figure from tumulus of, illustration, ix, 23.
- Rosenbach, Gen., x, 6.
- Rosenthal, Toby, xii, 279.
- Rosetti, experiments by, iii, 92.
- Rosetti, C. X., reform plan of, in Roumania, vii, 729, 730; obit., x, 667.
- Rosewood, exportation from Costa Rica, xii, 211.
- Roshan, state of, x, 2.
- Ross, Mr., ix, 51.
- Ross, A. M., sketch, iii, 739.
- Ross, Sir David, obit., i, 642.
- Ross, L. S., renominated, xiii, 767.
- Ross, M. D., obit., xvii, 571.
- Ross, Sobieski, obit., ii, 587.
- Ross, William H. H., obit., xii, 609.
- Rossetti, D. G., obit., vii, 647; xii, 278.
- Rostov, xi, 792.
- Rotelli, Luigi, obit., xvi, 685.
- Rothschild, Sir A., obit., i, 642.
- Rothschild, Baron, obit., iv, 701.
- Rothschild, Mayer Carl von, obit., xi, 725.
- Rothschild, Nathan, x, 606.
- Rotumah Island, annexation of, vi, 47.
- Rouckendorf, W., obit., xvi, 652.
- Roudaire, Capt., survey in Africa, ii, 328; obit., x, 667.
- Rouge, M. de, researches, vii, 257, 258 *et seq.*
- Rouher, E., v, 284; obit., ix, 621.
- Rouland, Gustave, obit., iii, 661.
- Roumania, i, 767; ii, 638; iii, 739; v, 659; vi, 794; vii, 726; viii, 695; ix, 700; article on, in Berlin Treaty, iii, 257; dissatisfaction, 740; act to prevent Jews from buying lands, 740; attitude toward Danube Commission, viii, 270, 272; ix, 702; constitution revised, ix, 702; x, 713; Jews in, ix, 703; x, 714; tariff-war in, x, 377; xii, 720; attempted assassination of the prime minister, 719; crisis in, 720; xiii, 718; xiv, 749; xv, 759; xvi, 775; xvii, 687; xviii, 677.
- Roumelia, ix, 103; xi, 100; Eastern, x, 753; in favor of the Bulgarian union, 753, 754; Alexander made governor-general of, x, 754. See also Eastern Roumelia.
- Round Table, the, xii, 336.
- Rouquette, Adrian, obit., xii, 609.
- Rous, Admiral, obit., ii, 609.
- Rousseau, Emile, sketch, xiii, 668.
- Rousseau, invention, i, 516.
- Rousseau, P., x, 367; obit., xii, 636.
- Rousset, Camille, obit., xvii, 602.
- Routledge, George, sketch and port., xiii, 722.
- Routt, John Le, i, 121; ii, 109.
- Rouvier cabinet, the, xii, 291.
- Roux, M., on the Panama Canal route, vi, 715.
- Rowan County disorders, xiii, 463.
- Rowan, S. C., obit. and port., xv, 663.
- Rowe, George F., sketch, xiv, 647.
- Rowett, Richard, obit., xii, 609.
- Rowland, discovery by, vi, 97.
- Rowlands, Rev. J., ix, 27.
- Rowley, W. R., obit., xi, 698.
- Royal Academy exhibitions. See Fine Arts.
- Royal succession, the, in France, viii, 106.
- Royce, Homer E., obit., xvi, 653.
- Rubens, Peter Paul, sale of pictures by, x, 359, 361, 365, 366.
- Ruberine, vii, 88.
- Rubies and garnets, discovery of, in Australia, xii, 311.
- Rubner, investigations by, vi, 676.
- Rubus Chamemorus, xi, 291.
- Ruby, the, xviii, 643.
- Ruchonnet, L., obit., xviii, 586.
- Rudersdorf, E. M., obit., vii, 643.
- Rudolf, Archduke, sketch, xiv, 750.
- Rudolph, crown prince of Austria, marriage of, vi, 51.
- Ruffin, George Lewis, obit., xi, 699.
- Ruffner, Lieut. E. H., x, 402.
- Ruffo-Scilla, xii, 717.
- Ruge, Arnold, obit., v, 603.
- Ruger, W. C., obit., xvii, 571.
- Ruggles, Prof. W., obit., ii, 587.
- Rugs, viii, 96.
- Rukhmabai, legal suit of, xii, 382.
- Rule of the Road, xviii, 678.
- Rumington, process of, ix, 658.
- Rumpff, Herr, murder of, x, 417.
- Rumpff, Karl, sketch, xiv, 669.
- Rumsey, H. B., obit., xii, 610.
- Runeberg, J. L., obit., ii, 609.
- Rupsch, ix, 358.
- Rushforth, W. H., obit., xvii, 571.
- Rushton, John, obit., xi, 699.
- Rusk, Jeremiah M., sketch and port., xiv, 804; obit., xviii, 566.
- Russell, Alexander, obit., i, 642.
- Russell, Earl, sketch, iii, 740.
- Russell, Scott, obit., vii, 647.
- Russell, W. E., nominated, xiii, 520.
- Russia, statistics, government, etc., in every volume; views in, i, 709, 710, 712; ii, 686-689; the Eastern question, i, 708, 711; see Eastern question; the Czar's visit to the Crimea and speech at Moscow, 709; mobilization of the army, 709; Gortchakoff's views, 710, 711; separate administration in the Balkan provinces abolished, 711; changes in the Polish judiciary, 711; the Little Russian dialect forbidden in literature, 711; Finland canal, 711; conquest of Khokan, 711; congress of orientologists, 711-718; war declared against Turkey, ii, 658; see Turkey; trials of socialists, 688; origin of the Propagandists 688; law about railroad stock, 689; commercial disasters, 689; additions by the treaty of Berlin, iii, 741; losses by the war, 742; the navy, 742, 743; reception of news of the congress of Berlin, 744; frauds in the commissariat, 744; trial of Vera Sassaulich, 744; attempt to assassinate Trepoff, 744; a shock to the government, 745; students and nihilists, 745; condition of society, 745, 746; proposed mixed occupation of Roumelia, iv, 775; war in Turkistan, 775; suspected designs on Merv, 775; victories of the Tekke Turkomans, 776; course of the Attrek turned, 776; attempts on the Czar's life, 776, 778; nihilist plots, 777; v, 662; trials, 665; reforms proposed, iv, 778; secret presses, v, 662; winter-palace explosion, 662; attempt to kill Loris-Melikoff, 663; the Hartman affair, 665; convention with the Vatican, 665; reclamation of marshes, 666; conciliation of Poland, 666; annexed province of Kars, 666, 667; assassination of the emperor, vi, 795-797; efforts to suppress nihilism, 796; trial and execution of the regicides, 797, 798; measures to protect the new Czar, 798; complicity of Duke Constantin, 798; arrests, and designs of the nihilists, 798-800; proposed reforms, 799; changes in the ministry, 799; secret correspondence of the Government, 800; advances in Asia, see Russian advances in Asia; emancipation of the serfs, 800-802; resignation of Gortchakoff-Giers ministry, sketch of M. Giers, vii, 734; great debt, 735; persecution of Jews, 735; viii, 709, 711; Ignatieff succeeded by Tolstoi, vii, 736; nihilist plots and murders, 737; viii, 709; ix, 711; x, 718; xii, 723; oil and minerals found, viii, 700; coronation of the emperor, 704; German provinces, 708; reconciliation with Austria, ix, 63; censorship of the press, ix, 708, 709; reaction against education, 709; meeting of emperors, 712; the Petersburg sea-canal, x, 716; the Bulgarian revolution and the Baltic provinces, 719; laws against foreigners, xii, 724; constitutionalist conspiracy, 723; drainage of marshes, 313; famine in, xvii, 693; tariff war with Germany, xviii, 682.
- Russian advances in Asia, ii, 6; iii, 2, 33, 97, 404; iv, 9; vi, 732, 800; vii, 415, 681, 734; viii, 706; territory gained, iii, 258; annexation of Merv, viii, 706; ix, 313; other operations in Asia, ix, 6, 712, 713; x, 1, 14, 720; relations with China, ix, 714.
- Russian Government, the, vi, 800.
- Russian language, act to establish, in literature, i, 711.
- Russian prisons, improvements in, xii, 704.
- Russian Turkistan, organized, ix, 712.

- Russians, troubles with the Chinese, v, 101; aid of, to Persia, v, 623.
- Russo-Afghan boundary, xiii, 7.
- Russo-Turkish War. See *Turko-Russian War*.
- Rüstow, Wilhelm, obit., iii, 661.
- Rutherford, George V., obit., i, 623.
- Rutherford, Lewis M., obit. and port., xvii, 571.
- Rutland, C. C. J. M., obit., xiii, 668.
- Rutland, Vt., xvii, 119.
- Ryall, explorations by, iv, 400.
- Ryan, Abram J., obit., xi, 699.
- Ryan, George P., obit., ii, 587.
- Ryder, Lieut., xii, 316.
- Ryerson, A. E. obit., vii, 643.
- Kyle, John, obit., xii, 610.
- Ryssakoff, vi, 796.
- Saaveira, the Carolines discovered by, x, 138.
- Sabbath, Congress for promoting the observance of, i, 740; Union, American, xv, 767; xviii, 699.
- Sabin, C. B., obit., xv, 668.
- Sabine, Sir Edward, obit., viii, 604.
- Sabine, Lorenzo, obit., ii, 587.
- Sablin, N., vi, 796, 797.
- Saccharinates of bitter alkaloids, xi, 291.
- Saccharine, xii, 109.
- Saccharomyces mycoderma, illustration, ix, 498.
- Sachan, E., explorations of, viii, 385.
- Sachs, Herr, experiments by, x, 690, 695.
- Sachse, Robert, x, 153.
- Sackville-West, xiii, 269.
- Sacramento, Cal., recent growth of, xi, 183; Capitol at, illustration, ii, 81.
- Sacrificial Calendar-stone, ix, 18.
- Sa Da Bandeira, Viscount, sketch, i, 713.
- Sadi-Carnot. See *Carnot*.
- Sadowa, battle of, x, 382.
- Sadtler, S. P., discovery by, vi, 97.
- Safarik, Prof., observations of, viii, 24.
- Safe-deposit companies, x, 294; list of, 294, 295.
- Safety of life on railroads, xviii, 214.
- Saffi, A., obit., xv, 687.
- Safford, Mary J., obit., xvi, 653.
- Safroi, xi, 292.
- Saft-el-Henneh, x, 36.
- Safvet Pasha, sketch, ii, 689; obit., viii, 604.
- Sagallo incident, the, xiv, 2.
- Saganeiti, battle at, xiii, 4.
- Sagasta, speeches of, vi, 818, 819; ix, 741; x, 739; xi, 808.
- Saghalien, exchanged for Kurile Islands, i, 427; colonization of convicts in, x, 397.
- Saginaw, xv, 144.
- Sahara, exploration of the, vi, 327; x, 393; proposed railway, v, 293; scheme for flooding, iv, 340; viii, 308; Spanish protectorate over the western, xii, 305.
- Said Pasha, reforms proposed by, vii, 803; dismissed, 803; recalled, 804.
- Sailors' Creek, fight at, x, 430.
- St. Albans, Vt., xvii, 119.
- Saint Amand, pen-name, x, 663.
- Saint Augustine, cathedral of, destroyed by fire, xii, 717.
- Saint Bartholomew, island of, bought by France, ii, 319; iii, 777; price returned, for a charitable institution, iv, 824.
- Saint Bernard dog, the, ix, 259.
- Saint-Bon, Pacoret de, obit., xvii, 608.
- St. Cloud, xv, 144.
- Saint Croix, island of. See in articles on the West Indies.
- Saint-Denis, Marquis Hervey de, obit., xvii, 603.
- St. Elias, Mt., attempt to ascend, xiv, 362.
- Saint Gaudens, Augustus, works of, ix, 245; x, 361; xii, 280.
- Saint Germans, Earl of, obit., ii, 612.
- Saint Gothard Railway and Tunnel, ii, 706; iii, 778; v, 667; vi, 819; vii, 11; illustrations, vi, 820, 821.
- St. Helena, xvi, 345; xvii, 327.
- Saint Hilaire, B., on Greek boundaries, vi, 375; v, 235.
- Saint Hilaire, Emile Marco de, obit., xii, 636.
- St. John, Charles, obit., xvi, 653.
- St. John, D. B., obit., xv, 663.
- Saint John, I. M., sketch, v, 673.
- Saint John, John P., v, 420; ix, 774, 775.
- Saint John, N. B., growth of, xii, 128.
- Saint John, R., iii, 468.
- St. John's, N. F., great fire, xvii, 494; xviii, 511.
- Saint Joseph, growth of, xi, 183.
- St. Lawrence, canals, xiii, 284.
- Saint Louis, growth of, v, 539; article on recent growth of, xi, 183; illustrations, i, 567; ii, 580; xiv, 567.
- Saint Lucia Bay, x, 137.
- Saint Lucia Island, xii, 802.
- St. Mary's Falls Canal, xiv, 754.
- Saint Paul, Minn., recent growth of, xi, 184; illustration, ii, 522.
- Saint Paul's Cathedral, London, illustration, ii, 362.
- Saint Petersburg sea-canal, x, 716.
- Saint Simonists. See *David*, i, 220.
- Saint Vallier, Comte de, obit., xi, 725.
- Salah-Aga-el-Mek, viii, 299.
- Saleh, Sheik, ix, 301.
- Salamanca, Gen., x, 142; xii, 740; obit., xv, 688.
- Salamanca, Marquis of, obit., viii, 604.
- Saldanha, Oliveira E. Daun, Duke of, sketch, i, 713.
- Salem, Ore., xvi, 169.
- Salembini, Count, xii, 2, 3.
- Saletta, Gen., xii, 3; xiii, 3.
- Salicylic acid, synthesis of, ix, 425.
- Saline Springs, x, 596.
- Salisbury, Marquis of, x, 721; portrait on steel, 448; iii, 244; ix, 374, 375; x, 18; cabinet of, x, 448.
- Salkowski, researches, viii, 637.
- Salmeron, xi, 808.
- Salmon, ix, 636, 800; fishery, xiii, 672; fishing in British Columbia, xviii, 109; in Oregon, xviii, 597.
- Salol, xi, 292.
- Salomon, L. E. F., sketch, xiii, 668.
- Salor Turkomans, x, 4, 5, 6, 7.
- Salt, beds of rock, in Ontario, xii, 726; mining, in New York, xii, 725; in Michigan, iv, 581; new fields of, xv, 767.
- Salt-deposits, formation of, ii, 92.
- Salt, John, xii, 480.
- Salt Lake City, tabernacle in, illustration, ii, 756; xiv, 158; statistics, xvii, 771.
- Salt, solution of a, x, 149.
- Salt-tax, in India, vii, 417; in Russia, vii, 733.
- Salt, W. P., obit., xv, 663.
- Salts of copper, poisonous properties of, xii, 680.
- Saltus, Francis S., sketch, xiv, 647.
- Saltykoff, Michael, sketch, xiv, 669.
- Salvador, i, 22; xiii, 729; xiv, 756; xv, 768; xvii, 693, xviii, 683; war, iii, 747; vi, 803; viii, 710; ix, 714; x, 722, 467; xii, 727; war against, xv, 410; xvi, 785.
- Salvation Army, viii, 710; xvi, 787; in Canada, ix, 676; in Switzerland, ix, 754; x, 452.
- Salvini, v, 409.
- Samaria, a new earth, x, 156.
- Samarium, vi, 93.
- Samoa, xiii, 730; xiv, 218, 756; xv, 769; xviii, 683; with map, xiii, 730.
- Samoan Islands, treaty of, with Germany, iv, 442; xi, 792; map of, 793; xii, 728; American interests at, 732; Germany declares war on, 730; King Malietoa deposed, 731.
- Samos, aqueduct of, xi, 34.
- Sampson, Capt., observations by, viii, 20.
- Sampson, W. T., experiments by, iv, 134.
- Sân (Zoan), ix, 19, 600.
- San Antonio, Texas, recent growth of, xi, 184.
- Sanctuary, the right of, ix, 282.
- Sand, George, sketch, i, 713.
- Sanday, invention by, x, 345.
- Sandberger, Dr., xi, 538.
- Sandborn, John S., obit., ii, 610.
- Sand-dunes, control of, x, 333.
- Sandean, Jules, obit., viii, 604.
- Sandeman, Sir Robert, i, 74; ii, 70; ix, 6, 7; x, 395; xi, 6.
- Sanders, observations, vii, 39.
- Sanderson, J. S. B., port., xviii, 31.
- San Diego, recent growth of, xii, 128.
- Sand-hills, settlement, xviii, 504.
- Sandhurst, W. R. Mansfield, Baron, sketch, i, 715.
- Sands, Benjamin F., obit., viii, 593.
- Sands, E., obit., xv, 663.
- Sands, H. B., obit. and port., xiii, 735.
- Sands, Joshua R., obit., viii, 594.
- Sands, Samuel, obit., xvi, 653.
- Sandusky, O., recent growth of, xii, 129.
- Sandwich Islands. See *Hawaiian Islands*.
- Sanha, story of, xi, 32.
- Sanford, Charles W., obit., iii, 645.
- Sanford, E. I., obit., xviii, 567.
- Sanford, Henry S., obit., xvi, 653.
- Sanford, John L., obit., ii, 610.
- San Francisco, vote on new charter, v, 78; trade of, x, 118; recent growth of, xi, 184; laundry or-



- dinance, ix, 430; illustration, city hall, ii, 82.  
 Sangai, Mt., ix, 541; view of, 542.  
 Sanitary Commission, work of the, vii, 718.  
 Sanitary Conference, appropriation for, vi, 142; x, 506; xvii, 362; International, xviii, 349.  
 Sanitary Congress in Peru, xii, 663.  
 Sanitary Progress, xviii, 704.  
 Sanitary Science, ix, 716.  
 San José, recent growth of, xii, 129; view of, vii, 177.  
 San Marzano, Gen., at Massowah, xiii, 3; relieved, 4.  
 Saupoo River, the, identical with the Brahmapootra, iv, 399.  
 Sans, A., discovery by, vi, 20.  
 San Salvador. See Salvador.  
 Sansas, Pierre, obit., ii, 610.  
 San Stefano, Treaty of, iii, 292, 396, 402, 739, 793; principal provisions of, iii, 791.  
 Santa Anna, sketch, i, 715.  
 Santa Cruz, celebration at, ix, 804.  
 See also West Indies, in vols. viii, ix, x, and xii.  
 Santa Fé, street scene in, illustration, ii, 559; xiii, 171.  
 Santa Maria, D., sketch, vi, 806; message of, viii, 63; ix, 131; communicated, x, 165; attempt to kill, 165.  
 Santini, Giovanni, obit., ii, 610.  
 Santo Domingo, proposed annexation of, i, 685; x, 435; article, viii, 712; ix, 730; x, 723; xii, 732; rebellion in, 733; xiii, 736; xiv, 760; xv, 769; xvi, 787; xvii, 694; xviii, 685.  
 Santonate of atropine, xi, 292.  
 Santos case, the, x, 303.  
 Santos, President Maximo, attempt to kill, xii, 787; sketch, xiv, 669.  
 Santos, riot in, xvii, 67.  
 Sappey, experiments by, vi, 751.  
 Sapphire, mines, xvi, 541; xviii, 644.  
 Sarakhs, taken by Russia, ix, 6, 648, 713; x, 4, 5, 12.  
 Saratoga Springs, xiii, 172.  
 Sarawak, xiv, 399; xv, 404; xvi, 344; xvii, 326.  
 Sargent, Aaron A., obit., xii, 610.  
 Sargent, Epes, sketch, v, 667.  
 Sargent, J. E., obit., xv, 664.  
 Sargent, John S., xii, 277.  
 Sarhad Mountains, the, discovery in, ii, 325.  
 Sarik Turkomans, the, x, 4, 5, 6, 7.  
 Sarmiento, D. F., sketch, xiii, 668.  
 Särnström, experiments, viii, 520; x, 576.  
 Sartorius, Sir G. R., obit., x, 667.  
 Sartorius Pasha, ix, 293.  
 Sarun tribe, the, ix, 7.  
 Sarzeaud, Martin, incident, xii, 243.  
 Sarzek, researches of, vii, 263.  
 Saskatchewan Territory, viii, 81; ix, 270.  
 Sassulitch, Vera, assassination attempted by, iii, 744; effect of acquittal of, iv, 682.  
 Satellites, orbits of, xi, 53; of the planets. See under Astronomy in each volume.  
 Satsuma, rebellion in, ii, 414.  
 Sattara, annexed, ix, 346.  
 Satterlee, Richard S., obit., v, 595.  
 Satterlee, Walter, xi, 346.  
 Saturn, rings of, i, 46; ii, 45; iii, 36; rotation of, ii, 45; orbit of Hyperion, 46; density of, iv, 52; system of, viii, 23; its mass and satellites, ix, 50; xii, 42; rings, 50, 51; xiii, 53; xiv, 46; xv, 40.  
 Saul, King, alleged descendants of, ix, 7.  
 Saulnier, John, xi, 344.  
 Saulsbury, Eli, obit., xviii, 567.  
 Saulsbury, W., obit., xvii, 572.  
 Sault Ste. Marie, xv, 144.  
 Saunderson, Col., xii, 340.  
 Savage, J., obit. and port., xiii, 736.  
 Savages (independents), ix, 69, 72, 362.  
 Savanilla, xii, 756.  
 Savannah, Ga., recent growth of, xi, 186; capture of, x, 428.  
 Save, Carl, obit., i, 642.  
 Savings-bank, post-office, xii, 687.  
 Savoiroux, Count, xii, 3.  
 Savoy, neutrality of, vi, 829.  
 Sawdust game, the, xiv, 230.  
 Sawyer, Charles C., obit., xvi, 653.  
 Sawyer, E. F., observations by, iii, 37; iv, 52; vii, 40.  
 Sawyer, F. A., obit., xvi, 653.  
 Sawyer, George Y., obit., vii, 643.  
 Sawyer, Henry W., obit., xviii, 567.  
 Sawyer, Lorenzo, obit., xvi, 653.  
 Sawyer, W. E., invention by, i, 520; v, 240.  
 Saxe-Coburg-Gotha, Duke of, xviii, 349.  
 Saxe, John Godfrey, sketch and portrait, xii, 733.  
 Saxifragine, x, 343.  
 Say, Léon, sketch, ii, 320; President of Senate, v, 281.  
 Saybolt, oil-tester of, viii, 464.  
 Sayce, A. H., ix, 23.  
 Sayn-Wittgenstein, Caroline, obit., xii, 636.  
 Sayn-Wittgenstein Sayn, Prince, obit., i, 642.  
 Sayre, David M., obit., i, 623.  
 Sbarbaro, Signor, trial of, xi, 454.  
 Scammon, J. Y., obit. and port., xv, 664.  
 Scandium, discovery of, ix, 119.  
 Schaafhausen, Prof., obit., xviii, 586.  
 Schaarschmidt, Jules, experiments by, x, 695.  
 Schäuberle, J. M., discoveries by, v, 35; vi, 39.  
 Schaff, Philip, obit. and port., xviii, 567.  
 Schaffner and Helbig, experiments by, viii, 115.  
 Schall, M., xii, 111.  
 Schaus, W., obit., xvii, 572.  
 Schell, Augustus C., obit., ix, 611.  
 Schem, Alexander J., obit., vii, 643.  
 Schenck, R. C., obit. and port., xv, 664.  
 Schenectady, growth of, xii, 129.  
 Scherer, Edmond, sketch, xiv, 669.  
 Scherer, Wilhelmj, obit., xi, 725.  
 Scherr, Archbishop, obit., ii, 610.  
 Seherr, Johannes, obit., xi, 725.  
 Scheurl, Christoph G. A., obit., xviii, 586.  
 Schiaparelli, observations by, viii, 20, 24; xi, 54.  
 Schieffeln, E., vii, 7.  
 Schilling, monument designed by, vii, 399.  
 Schimper, A. F. W., discoveries by, ix, 92, 93.  
 Schinz, Dr. H., xii, 306.  
 Schirmer, H. E., obit., xii, 637.  
 Schkara, Mt., xii, 313.  
 Schlagdenhauffen, experiments by, viii, 118.  
 Schlagintweit, Emil, quoted, i, 7, 73, 74; ii, 5, 70.  
 Schlagintweit, Herrmann, ix, 543.  
 Schlagintweit, R., obit., x, 668.  
 Schleicher, G., obit., iv, 695.  
 Schleinitz, Baron von, explorations by, xi, 382; xii, 312.  
 Schleswig-Holstein, final disposal of, iv, 440; Danish subjects in, viii, 276.  
 Schley, W. S., ix, 29.  
 Schleyer, Johann Martin, inventor of Volapük, xii, 794; obit., xiii, 669.  
 Schliemann, Heinrich, explorations of, i, 28; ix, 23; xi, 33; obit., xv, 688.  
 Schloesing, theory of, iii, 83; invention by, vii, 741.  
 Schmerling, A., obit., xviii, 586.  
 Schmid, Theodor, obit., ii, 610.  
 Schmidt, Friedrich, obit., xvi, 685.  
 Schmidt, Gen. von, obit., i, 642.  
 Schmidt, H. I., sketch, xiv, 647.  
 Schmidt, Julian, obit., xi, 725.  
 Schmidt, Prof., discoveries by, ii, 48; vii, 38; obit., ix, 621.  
 Schmidt, W. A., obit., xii, 637.  
 Schmitz, Gustavus, obit., ii, 588.  
 Schmitz, I. P., obit., xvii, 603.  
 Schmitz, L., obit., xv, 690.  
 Schmoele, H., invention, x, 616.  
 Schmucker, P. M., sketch, xiii, 651.  
 Schnaebele, M., xii, 326.  
 Schneider, C. C., bridge designed by, viii, 313.  
 Schneitzer, M., xii, 675.  
 Schnitzler, Dr., discovery by, ii, 330; xi, 312, 369. See Emin Bey.  
 Schoeleher Victor, obit., xviii, 586.  
 Schofield, John, obit., xviii, 568.  
 Schofield, Gen. John M., x, 429; sketch and port., xiii, 737.  
 Schofield, Jacob L., obit., xi, 699.  
 Schöne, investigations by, iii, 90.  
 School-books. See Teachers' Associations.  
 School, for soldiers' orphans, xviii, 610.  
 Schools, national aid to, ix, 222; xi, 263; secular, in Belgium, xi, 84; the Bible in, v, 380; in Kansas, ix, 424. See also Education.  
 School-question, the, xvi, 775; controversy, the, xviii, 673.  
 Schoonmaker, C. M., obit., xiv, 647.  
 Schrader, Dr., xii, 312, 647.  
 Schreiber, G. F., obit., xvii, 572.  
 Schreiner, Herr, xi, 35.  
 Schröder, H., experiments by, viii, 637; ix, 521.  
 Schröder, Karl, obit., xii, 637.  
 Schulhof, Dr., prize to, iii, 39.  
 Schults, Jackson S., obit., xvi, 654.  
 Schulz, Albert, obit., xviii, 586.  
 Schulze-Delitzsch, H., obit., viii, 604.  
 Schumaker, Herr, xii, 25.  
 Sehumann, Max, xii, 488.  
 Schunk, Edward, experiments, iv, 135; xii, 112.  
 Schur, W., prize to, viii, 28.  
 Schurz, Carl, sketch, ii, 689.  
 Schütt, O., explorations, iv, 403.  
 Schützenberger, experiments by, viii, 110.

- Schuyler, E., obit., xv, 665.  
 Schuyler, G. L., obit., xv, 665.  
 Schuyler, Peter, with cut, xi, 10.  
 Schwackhöfer, invention, iii, 545.  
 Schwartz, Herr, xi, 129.  
 Schwarzburg-Sondershausen, Prince sketch, xiv, 670.  
 Schwarzenberg, Cardinal, obit., x, 668, 713.  
 Schwann, Theodor, obit., vii, 647.  
 Schwatka, F., obit., xvii, 572.  
 Schwatka, voyage of, v, 298; xi, 380.  
 Schweinfurth, Dr., explorations of, i, 331; ii, 328; iii, 363; v, 235.  
 Schwenkfelders, xvi, 788.  
 Schwerin, Baron von, discovery by, xii, 306.  
 Scialoja, Antonio, obit., ii, 610.  
 Science, Associations for the Advancement of, ix, 44; x, 44; xi, 46; xii, 34. See National Academy.  
 Scindia, restoration of Gwalloor citadel to, x, 497.  
 Scindiah Bhajcerut Rao, obit., xi, 726.  
 Selopis de Salerano, Count, obit., iii, 661.  
 Scofield, Glenni W., obit., xvi, 654.  
 Scopoline, xi, 292.  
 Scoresby, Capt., xi, 565.  
 Scorpion fossil, illustration, ix, 637.  
 Scotland, Church of, xiii, 703; xiv, 718.  
 Scotland Yard, explosion, ix, 377.  
 Scott, Sir George G., obit., iii, 661.  
 Scott, Henry L., obit., xi, 699.  
 Scott, John, sketch, xiv, 647.  
 Scott, J. W., obit., xvii, 573.  
 Scott, Levi, sketch, vii, 738.  
 Scott, Robert N., obit., xii, 610.  
 Scott, Thomas, murder of, x, 711.  
 Scott, Thomas A., sketch, vi, 806.  
 Scott, Gen. Walter, obit., i, 642.  
 Scott, William L., obit., xvi, 654.  
 Scotti, J., obit., xv, 665.  
 Scott-Moncrief, Col., ix, 286.  
 Scoville, Jonathan, obit., xvi, 654.  
 Scanton, Pa., growth of, xi, 186.  
 Scratchley, Maj.-Gen. Sir Peter, x, 59, 60; xii, 647; obit., x, 668.  
 Screw-propeller railway, illustration, xi, 742.  
 Scribner, John Blair, obit., iv, 695.  
 Scrip, land, xiii, 472.  
 Scroggs, G. A., obit., xii, 611.  
 Scrope, George P., obit., i, 642.  
*Scrutin de Liste*, vi, 807; x, 376, 379.  
 Scudder, E. W., obit., xviii, 568.  
 Scudder, S. H., ix, 637.  
 Sculpture, ix, 244; early Christian, xiii, 31.  
 Scythian King, tomb of, xiii, 34.  
 Seal fisheries, vii, 7; xii, 284; in British Columbia, xviii, 109.  
 Seal question, the, xvi, 834.  
 Sealing bags, xii, 689.  
 Sealing, in Bering Sea, xviii, 683.  
 Sea-Lions, vii, 9.  
 Searle, observations, viii, 24.  
 Searle, Henry, obit., xvii, 573.  
 Searle, Henry E., sketch, xiv, 670.  
 Seales, Mary F. S., obit., xvi, 654.  
 Sears, Barnas, obit., v, 596.  
 Sears, Edward J., obit., i, 623.  
 Sears, George B., obit., ii, 588.  
 Searing, John A., obit., i, 623.  
 Sea-serpents, xi, 795; illustrations, 796, 797, 798.  
 Seaton, Henry E., obit., xviii, 568.  
 Seattle, xiv, 823.  
 Seawanhaka, loss of the, v, 580.  
 Seawell, W., obit., xiii, 651.  
 Seay, Gov. Thomas, xiii, 8.  
 Seay, William A., sketch, xiii, 652.  
 Sebastin, a new explosive, x, 344.  
 Sebastopol, fortifications and siege of, ix, 761.  
 Sebehr Pasha. See Zebehr Pasha.  
 Secchi, Peter A., obit., iii, 738.  
 Sechle, Chief, x, 88.  
 Second-Advent Christian Association, xiv, 4.  
 Secretion, xiv, 709.  
 Secret Societies, Reformed Church on, v, 652.  
 Sedalia, xiv, 158.  
 Sedative, a new, ix, 272.  
 Selden, James A., obit., v, 596.  
 Seed-cotton, bill on, in Alabama, iv, 16; invention for spinning, iv, 638.  
 Ségalas, Anaïs, obit., xviii, 586.  
 Seegen, experiments by, vi, 750.  
 Secley, Charles A., obit., xvii, 573.  
 Sealey, H. M., nominated, xiii, 834.  
 Seguin, Edward, obit., v, 596.  
 Seiberling, J., obit., i, 623.  
 Seid, Mohammed, ix, 712.  
 Seismic area, chart, xi, 296.  
 Seismographs, xi, 303.  
 Seismometers, illustrations, xi, 303.  
 Selden, H. R., obit. and port., x, 724.  
 Selden, Samuel L., obit., i, 623.  
 Self, Edward D., xii, 481.  
 Selkirk Mountains, map of, xiv, 358.  
 Sell, E., study of Islam by, vi, 444.  
 Sella, Quintino, obit., ix, 621.  
 Sellar, A. C., obit., xv, 690.  
 Sellar, W. Y., obit., xv, 690.  
 Sella and Volekmar, invention by, vii, 265.  
 Selma, Ala., xvii, 119.  
 Selmer, impeachment of, ix, 751.  
 Selwyn, George A., obit., iii, 661.  
 Semiramis, ix, 599.  
 Semmes, Raphael, sketch, ii, 690.  
 Senard, M., obit., x, 668.  
 Senate, office of President of, i, 138-152; expulsions from, vii, 196; contested election to, in Texas, xii, 758. See Congress.  
 Senatorial Question, the, in New Hampshire, vi, 633.  
 Seneca River aqueduct, illustration, i, 603.  
 Seneffu, King, monuments of, vii, 257.  
 Senegal, xv, 335.  
 Senegal, under French protection, xii, 305.  
 Seney, George I., ix, 329; art collection of, x, 367; xii, 279; obit., xviii, 568.  
 Sennaar, insurrection in, viii, 299, 301; massacre at, x, 317.  
 Senses, special, ix, 656; x, 690; xiii, 690; xvi, 740.  
 Seoul, outbreak in, xiii, 253.  
 Sepinau, Chief, ix, 115.  
 Septuagint manuscript, xvii, 14.  
 Serfdom, vi, 473; in Java, vii, 589.  
 Sermons, election, vi, 534.  
 Serpa Pinto, expedition, xv, 266.  
 Serrano, Capt., expedition of, x, 400; xii, 315.  
 Serrano, Duke, ix, 741; obit., x, 668.  
 Serrigny, Denis, obit., i, 642.  
 Servia, i, 753, 761, 763, 765; ii, 691, 724; iii, 748; vii, 738; map, i, 754; viii, 714; xii, 734; insurrection, viii, 715; articles on, in the Berlin Treaty, iii, 257; differences with Austria, v, 47; project for church union of, v, 347; troubles in, viii, 43; Russian views for, viii, 549; ix, 732; dispute with Bulgaria, 102, 733; ix, 109, 112; war with Bulgaria, x, 727; treaty, xii, 736; changes of ministry, 735; xiii, 738; xiv, 760; xv, 769; xvi, 788; xvii, 694; xviii, 685.  
 Servian frontier, the, xiii, 114.  
 Service, U. S. Life-saving, iii, 749; illustrations, i, 592 *et seq.*; iii, 759 *et seq.*  
 Service, U. S. Marine Hospital, iv, 778.  
 Sessions, L. B., case of, vi, 648; viii, 577.  
 Seti, King, ix, 20.  
 Seton, Catharine, obit., xvi, 655.  
 Settembrini, L., obit., i, 642.  
 Setters, described, ix, 255, 256.  
 Settle, Thomas, sketch, xiii, 652.  
 Settled Estates Act, in Great Britain, x, 457.  
 Seubert, K., experiments by, vi, 93; x, 155.  
 Seven Days' Battles, the, x, 559.  
 Seven Pines, battle of, x, 558.  
 Seventh-Day Adventists. See Adventists.  
 Seventh-Day Baptist Church, xiii, 741; xiv, 68; xvii, 696.  
 Severtzoo, explorations by, iv, 399.  
 Sevier, Robert, obit., iv, 695.  
 Sevilla, José, bequest of, xii, 663.  
 Sewage, influence of, on ground-atmosphere, i, 94; in houses, v, 363; disposal, vii, 741; see Sanitary Science, ix, 716; disposal of sludge, ix, 123; nitrification of, 128; purification of, x, 154.  
 Sewall, Harold Marsh, xii, 731.  
 Sewall, Henry, ix, 657; experiments by, x, 692.  
 Sewall, Mary A., obit., xvii, 573.  
 Sewall, S. E., sketch, xiii, 652.  
 Seward, A. H., obit., i, 623.  
 Seward Monument in New York, the, i, 716.  
 Seward, Sara C., obit., xvi, 655.  
 Sewers, ventilation of, iii, 722; ix, 724 *et seq.*; traps, 728; gas, 723, 725.  
 Sewing-machines, improvement in, ii, 497.  
 Scyffarth, Gustavus, obit., x, 669.  
 Seymour, Edward, obit., ii, 588.  
 Seymour, E. W., obit., xvii, 573.  
 Seymour, Sir F. B. P., portrait, vii, 245.  
 Seymour, Horatio, obit. and portrait, xi, 798.  
 Seymour, Mary F., obit., xviii, 568.  
 Seymour, Norman, obit., xvii, 573.  
 Seymour, O. S., sketch, vi, 808.  
 Seymour, Truman, obit., xvi, 655.  
 Seytre, M., invention by, x, 615.  
 Seyyid Bargash, x, 795, 796.  
 Sforza, Cardinal, obit., ii, 610.  
 Shachovski, Prince, sketch, ii, 692.  
 Shafter, J. M., obit., xvii, 574.  
 Shaftesbury, Earl, obit., x, 669.  
 Shah of Persia, travels of, i, 660.  
 Shah Jehan, ix, 7.



- Shairp, John C., obit., x, 669.  
 Shakespeare, E. O., x, 798, 800.  
 Shaler, Gen. Alexander, x, 641.  
 Shanahan, Jeremiah F., xi, 699.  
 Shand, Peter J., obit., xi, 700.  
 Shandley, Edward J., obit., i, 623.  
 Shanghai Custom-House, illustration, iv, 146.  
 Shannon, Wilson, obit., ii, 588.  
 Shan States, the, xiv, 429.  
 Shari River, the, iii, 363.  
 Sharkey, observations, viii, 634.  
 Sharp, Jacob, trial of, xii, 555; obit., xvii, 574.  
 Sharp, Martin, sketch, xiv, 670.  
 Sharpstein, John R., obit., xvii, 574.  
 Sharswood, G., obit., viii, 594.  
 Shattuck, G. C., obit., xviii, 568.  
 Shaw, Aaron, obit., xii, 611.  
 Shaw, B. F., obit., xv, 665.  
 Shaw, Henry W., obit., x, 654.  
 Shaw, J. B., obit., xv, 665.  
 Shaw, Richard, obit., i, 642.  
 Shawe, Charles A., obit., i, 643.  
 Shea, J. D. G., obit., xvii, 574.  
 Sheboygan, Wis., xviii, 172.  
 Sheep-husbandry, in Georgia, iv, 427; in Australia, vi, 46.  
 Sheldon, George, obit., vi, 688.  
 Sheldon, James, obit., xii, 611.  
 Sheldon, Smith, obit., ix, 611.  
 Shell-Heaps, aboriginal, ix, 14.  
 Shelton, John T., obit., i, 624.  
 Shelton, William, obit., viii, 594.  
 Shendy, captured by Arabs, ix, 297; by Gordon, 301; bombarded, x, 314.  
 Shepard, C. A. B., sketch, xiv, 648.  
 Shepard, E. F., obit., xviii, 569.  
 Shepard, observations, iv, 53.  
 Shephard, C. U., obit., xi, 700.  
 Shepherd, T. P., obit., ii, 588.  
 Shepley, G. F., sketch, iii, 767.  
 Shepstone, Sir Theophilus, obit., xviii, 586.  
 Sherbrooke, Quebec, xii, 130.  
 Shere Ali, i, 8; negotiations with Russia, ii, 6, 42; disputed succession, iii, 6; answer of, to the British Government, iii, 437; flight from Cabul, iii, 437; flight of, iv, 7; death, iv, 9; secret correspondence of, captured, vi, 2; ix, 4; x, 2, 12.  
 Sheridan, Gen. Philip H., sketch and steel-plate portrait, viii, 715; x, 427, 428, 429; his recommendation as to Indian lands, 763; death of, xiii, 652.  
 Sheridan, M. M., sketch, xiii, 652.  
 Sherif Pasha, vii, 239.  
 Sheriffs, convention of, v, 683.  
 Sherman act, the, xviii, 226.  
 Sherman, John, sketches, ii, 692; iv, 794; portrait, 794.  
 Sherman, Mrs. S. M. G., obit., iii, 645.  
 Sherman, T. W., obit., iv, 695.  
 Sherman, Mrs. Thomas W., obit., iv, 695.  
 Sherman, Gen. William T., charge against Jefferson Davis, x, 235, 424, 425, 426, 431; sketch and port., xvi, 791.  
 Sherman, Tex., xvi, 169.  
 Sherwood, J. M., obit., xv, 665.  
 Shibergan, district of, x, 4.  
 Shields, James, sketch, iv, 796.  
 Shields, J., experiments, vii, 660.  
 Shiho, engagement near, x, 173.  
 Shilder-Shuldner, obit., iii, 661.  
 Shillaber, B. P., obit. and port., xv, 665.  
 Shilleto, Rev. R., obit., i, 643.  
 Shiloh, battle of, x, 424.  
 Shimosé, experiments by, viii, 111.  
 Shinar, King of, xiv, 23.  
 Shinwarri rebellion, viii, 1.  
 Ship-building, xiii, 510; xvii, 190; in Delaware, xviii, 255.  
 Ship canal, Norwegian, xvii, 250.  
 Ship channel in Lake St. Peter, xiii, 283.  
 Shipka Pass, contest for, ii, 741.  
 Shipley, H., x, 401.  
 Shipman, G. E., obit., xviii, 569.  
 Shipman, V. J., nominated, xiii, 341.  
 Shipping, acts on, in Great Britain, i, 358; decline of American, ii, 110; iv, 837; v, 125; vi, 786; vii, 520; statistics of American, viii, 150; committees on, vii, 522, 523; bill on, in Congress, viii, 220; fines on, in foreign ports, vi, 777; restrictions in Spanish West Indies, viii, 263; deductions to British, *ibid.*; French bill, vi, 308; American, xvi, 193; on the Great Lakes, xvii, 697.  
 Shipping-law Conference, x, 420.  
 Ship railway, xiv, 615.  
 Ship-railway, Tehuantepec. See Tehuantepec.  
 Ships, machinery for lifting, ii, 497; for conveying ears, 498; speed indicator, 499; sounding instrument, 498; steering large, iii, 724; rules for preventing collisions, vi, 778; building, 246; vii, 521; statistics of, in Maine, viii, 510; armored, iii, 591; classes of war, vi, 547; history of "Old Ironsides," vi, 620; the "Grosser Kurfürst," iii, 385; iv, 441; lists, of war, and descriptions of the "Calliope," "Téméraire," "Inflexible," "Lepanto," etc., see Navies of Europe, vii, 568; separable, xv, 282.  
 Shiras, George, Jr., sketch and port., xvii, 745.  
 Shirley, Com. Paul, obit., i, 624.  
 Shoa, ii, 3; iv, 2; xi, 1; Italian mission to, xiv, 2.  
 Shoemaker, John L., obit., i, 624.  
 Sholes, C. L., obit., xv, 666.  
 Shoring of bridge, ix, 313.  
 Short-hand writing, physiology of, xii, 670.  
 Shot-guns, xv, 772.  
 Shreveport, xiv, 159.  
 Shufeldt, Com. R. W., x, 265.  
 Shufeldt, M. A., obit., xvii, 574.  
 Shugnan, state of, x, 2; taken by Abdurrahman, 4.  
 Shurtleff, Stephen C., nominated, xiii, 834.  
 Shuvaloff, Count, sketch, ii, 692; x, 2; sketch, xiv, 670.  
 Siam, xviii, 687; conflict with France, 687.  
 Siamen, King, ix, 20.  
 Siberia, Northern, difficulties of the new ocean route to, iii, 358; trade in, x, 397; influence of the presence of Russians in, 398.  
 Sibi, annexation of, xiii, 7.  
 Sibi-Quetta railroad, the, x, 4, 12.  
 Sibriakof, Alexander, x, 397.  
 Sibley, Henry H., obit., xvi, 655.  
 Sibley, Hiram, sketch, xiii, 652.  
 Sicilian Disturbances, xviii, 415.  
 Sicilian Vespers, anniversary of, vii, 438.  
 Siekel, H. G., obit., xv, 666.  
 Siekels, John B., obit., i, 624.  
 Sieyon, excavations in, xiii, 26.  
 Sidel-Hadj'-Abd-es-Salaam, obit., xvii, 603.  
 Sidersky, experiments, viii, 113.  
 Sidi Hadji, sherif of Wazan, ix, 339.  
 Sidi Mohammed Ben Ali es-Senoussi, x, 316.  
 Sidi Muley Hassan, obit., iii, 661.  
 Sidmouth, Viscount, x, 60.  
 Sidon, rock-cut tombs of, xii, 24.  
 Siemens, C. W., sketch, viii, 718.  
 Siemens, D., xi, 539.  
 Siemens, Frederick, experiments by, iv, 419; viii, 378.  
 Siemens, Werner, invention by, iii, 276; experiments, v, 237; vii, 528.  
 Siemens, W. von, obit., xvii, 603.  
 Siemens, Sir William, inventions by, i, 519; vi, 255, 258, 400; viii, 676; theory of the sun, vii, 32.  
 Sierra Nevada Mountains, ix, 539.  
 Sight and touch, relative accuracy of, vi, 751; experiments on the sight, x, 690, 691.  
 Sight, Buffington's, xiv, 739.  
 Signal Service, Meteorological Division of the United States, with weather-maps and map of coast telegraph, iv, 797; station of Mount Washington, 800; illustrations, 800, 804, 806-810, 813, 815, 816.  
 Signals, sound-, viii, 719.  
 Signol, Emile, obit., xvii, 603.  
 Sigurson, Jon, vi, 212.  
 Sikkim, war in, xiii, 434; xiv, 428; xv, 436.  
 Sila (Corea), x, 263.  
 Silchester, discoveries at, xvi, 15.  
 Silicate tablet, the, xii, 688.  
 Silicon, discoveries, ix, 809.  
 Silk, weighing of, iii, 229; substitute for, 724; commerce in, iv, 173; reduced yield in China, viii, 126; industry in Lyons, ix, 345; in Italy, ix, 415; in Mexico, xi, 555; artistic, ix, 246.  
 Silk-worm gut, xiv, 762.  
 Sill, Edward R., obit., xii, 611.  
 Silliman, Benjamin, invention by, i, 522; obit. and portrait, x, 732; statue of, x, 361.  
 Silos, their construction and uses, vi, 808; illustrations, 809, 810.  
 Silva, Francis A., obit., xi, 700.  
 Silver bill, xv, 232.  
 Silver certificates and coins, vi, 779.  
 Silver coinage, Léon Say on, iii, 314; in Germany, iv, 440; as legal currency, ii, 235, 291; iii, 138-164; effects of depreciation, iv, 163, 613; vi, 626; ix, 783; x, 275, 282; Cleveland on, x, 755; the question in India, xi, 437. See Bimetallic Standard.  
 Silver, mining of, xii, 504; in Bolivia, x, 99; xi, 91; in Australia, ix, 59; working of, see Metallurgy.  
 Silver purchase, xviii, 207.  
 Silver, salts of, ii, 91; reduction of, from ore, viii, 521; in lead

- ores, x, 155; determination of small quantities, ix, 127; xiii, 527; xvi, 509; xvii, 443; xviii, 481; coinage, 590; chloride, 150; xiv, 80, 409, 413, 542; xv, 529; abolishing free, xviii, 401; convention in Arizona, 21; in Col., 178; in Montana, 502; demonstrations in Utah, 748.
- Simeoni, Giovanni, obit., xvii, 603.
- Simmons, Edward E., xi, 346.
- Simon, Jules, resignation of, ii, 307; speech of, 312, 313; v, 282.
- Simon, Marie, obit., ii, 610.
- Simon-Carves oven, the, x, 580.
- Simonides, obit., xv, 690.
- Simonieh, Count, x, 1.
- Simons, M. Laird, obit., v, 596.
- Simons, Thomas Y., obit., iii, 645.
- Simony, trial for, in Greece, i, 369-371.
- Simor, Johann, obit., 16, 685.
- Simplon tunnel, x, 746.
- Simpson, E., sketch, xiii, 652.
- Simpson, J. H., x, 401.
- Simpson, J. P., obit., xii, 637.
- Simpson, Matthew, obit., ix, 611.
- Simpson, Richard, obit., i, 643.
- Simrock, Karl, sketch, i, 718.
- Sims, J. Marion, sketch, viii, 718.
- Simson, Alfred, voyage of, i, 333.
- Sinde, annexation of, ix, 346; mutinies in, 346.
- Singing-bird, the, x, 613.
- Singleton, O. R., sketch, xiv, 648.
- Sinkat, fall of, viii, 302; ix, 293; x, 319.
- Sinking town in Colorado, xviii, 177.
- Siout, tombs at, xiii, 31.
- Sioux City, xiv, 159.
- Sioux Falls, S. Dak., xv, 145.
- Sioux reservation, xiv, 249.
- Sioux, war with the, i, 43.
- Sippara, temple at, ix, 18, 19; xiii, 33.
- Siren fog-signal, v, 448; viii, 723.
- Sir-i-pul, district of, x, 4.
- Sirius, spectroscopic study of, x, 52; the companion of, ix, 53.
- Sisal hemp, xiii, 248.
- Sitting Bull, i, 43; obit., xv, 666.
- Sivatha, Prince, x, 119.
- Skassi, M., surveys of, xi, 377; xii, 310.
- Skate, ix, 733; illustrations, 734-737.
- Skene, J. H., researches of, vii, 264.
- Skjernievice, meeting of emperors at, ix, 64, 356, 712.
- Skin, structure of the, xii, 672; new remedies for diseases of the, viii, 434; ix, 272, 273; x, 298, 300.
- Skobelev, M. D., sketches, ii, 693; viii, 742; plan of, x, 7.
- Skye Crofters, ix, 378.
- Skye-terrier, the, ix, 261.
- Slade, Adolphus, obit., ii, 611.
- Slade, Edward, obit., iii, 645.
- Sladen, Col., xi, 118.
- Slag, utilization of, iii, 722.
- Slater, John F., obit., ix, 612.
- Slaughter, W. B., obit., iv, 695.
- Slaughtering by machinery, x, 733; illustration, 735.
- Slave ports, reconquest, xv, 270.
- Slavery, in Brazil, i, 77; vii, 70; movement to abolish, viii, 67; emancipation, xi, 97; the Soudan, ii, 269, 270; v, 235; viii, 290, 292; in Cypress, iii, 402; in Cuba, iii, 774; iv, 822; abolition, viii, 262; in United States, see Exodus, iv, 354; Southern Presbyterian Church on, i, 270; among Turkomans, vi, 733; in Madagascar, vii, 493; form of, in Queensland, viii, 36; virtual, in the South Pacific, x, 62; black laborers released, 62, 63; decree abolishing, in Egypt, ix, 286; xiv, 282. See also Anti-Slavery.
- Slave-trade, the, field of, ii, 270, 329, 331; inquiry into, ii, 641; efforts of Gen. Gordon to stop, viii, 399.
- Slavs, the, and schemes for their union, i, 58-60; ii, 263; v, 47; vii, 47, 53; viii, 46, 48; the south, ix, 537; conflict between, and the Czechs, in Austria, x, 71. See also Pan Slavists.
- Sleep, drugs producing, x, 298, 300, 301.
- Sleep-drunkenness, ix, 554.
- Sleeper, John S., obit., iii, 645.
- Sliver, W. A., obit., xiii, 653.
- Slivinitza, battle near, x, 729.
- Sloane, J. R. W., obit., xi, 700.
- Small, John, obit., xi, 726.
- Small, M. P., obit., xvii, 575.
- Small-pox, Cecley case, vii, 287; in Canada, x, 706; outbreak of, in Montreal, x, 706; xiii, 317.
- Smalls, R., pardon of, iv, 820.
- Smce, Dr. Alfred, obit., ii, 611.
- Smell, experiments on, viii, 636.
- Smillie, James, obit., x, 654.
- Smirke, S., obit., ii, 611.
- Smith, Albee, invention, vii, 485.
- Smith, Albert, obit., iii, 645.
- Smith, Angus, x, 161.
- Smith, Asa D., sketch, ii, 693.
- Smith, Ashbel, obit., xi, 701.
- Smith, Avery, obit., i, 624.
- Smith, Benjamin B., obit., ix, 612.
- Smith, C. M., observations by, viii, 525.
- Smith, Cyrus P., obit., ii, 588.
- Smith, David M., obit., vi, 688.
- Smith, Dr., ix, 655.
- Smith, E. Darwin, obit., viii, 594.
- Smith, Edmund Kirby, obit. and port., xviii, 569.
- Smith, E. F., experiments by, iv, 134; v, 96.
- Smith, Edward P., obit., i, 624.
- Smith, Elizabeth O. P., obit., xviii, 570.
- Smith, Erminnie A., ix, 45, 46; x, 45; obit. and portrait, xi, 802.
- Smith, F. H., obit., xv, 666.
- Smith, Francis G., obit., iii, 645.
- Smith, Francis S., obit., xii, 611.
- Smith, George, sketch, i, 718; researches of, vii, 262-264.
- Smith, Green Clay, sketch, i, 441.
- Smith, Henry B., sketch, ii, 694.
- Smith, Henry Clay, obit., xi, 701.
- Smith, Henry H., obit., xv, 666.
- Smith, Herbert E., xii, 675.
- Smith, Hoke, sketch and port., xviii, 737.
- Smith, Horace, obit., xviii, 570.
- Smith, Ida G., obit., vii, 643.
- Smith, James Y., obit., i, 624.
- Smith, J. Hyatt, obit., xi, 701.
- Smith, John A., obit., xvii, 575.
- Smith, John G., obit., xvi, 655.
- Smith, Joseph, obit., ii, 588; port., xviii, 668.
- Smith, J. Cotton, sketch, vii, 742.
- Smith, J. Lawrence, discovery by, iii, 87; sketch, viii, 718.
- Smith, J. P., buoy, v, 452.
- Smith, Kirby, x, 431.
- Smith, Leigh, cruises of, v, 303; vi, 323, 325; vii, 334.
- Smith, Melancton, obit. and port., xviii, 570.
- Smith, Nathan R., obit., ii, 588.
- Smith, Lady P., obit., ii, 611.
- Smith, Piozzi, his theory of the great pyramid, ix, 21.
- Smith, Robert A., obit., ix, 621.
- Smith, Roswell, obit., xvii, 575.
- Smith, S. Alden, xii, 17.
- Smith, Thomas K., obit., xii, 612.
- Smith, Thomas L., obit., xvi, 655.
- Smith, Sir W., obit., xviii, 568.
- Smith, W. French, experiments by, x, 158.
- Smith, William, obit., xii, 612.
- Smith, William E., sketch of, ii, 770.
- Smith, William H., obit., xvi, 636.
- Smith, William Henry, x, 449.
- Smith, W. N. Howell, sketch, ii, 574; iii, 630; obit., xiv, 648.
- Smith, W. Robertson, trial of, for heresy, ii, 648; iii, 698; v, 634; vi, 760, 769.
- Snake, consumer, a, i, 518.
- Smyth, Douglass, x, 362.
- Smyth, J. F., insurance superintendent, trial of, iii, 616.
- Smyth, Sir W. W., obit., xv, 690.
- Smythies, Bishop, xi, 370; xii, 303.
- Snakes, venom of, xii, 679.
- Snead, J. T., obit., vi, 688.
- Snead, T. L., obit., xv, 667.
- Sneeze-wood, x, 135.
- Snell, Ebenezer L., obit., i, 624.
- Snell, George, obit., xviii, 570.
- Snipe, in the United States, x, 390.
- Snohomish, Wash., xvi, 170.
- Snow-plows, rotary, xvi, 711.
- Snow-shoes, xi, 803.
- Snowden, J. R., obit., iii, 645.
- Sobrero, x, 344.
- Societies, Mutual Aid, xii, 523; of Jesus, Incorporation, in Quebec, 708; Psychical Research, 509.
- Socialism, State, of Bismarck, viii, 393; radical land-theories tending to, x, 457.
- Socialist Congress, xvi, 329.
- Socialists, in Denmark, ii, 250; increase of, in Germany, 282; measure against, iii, 379-381, 384; x, 417; xi, 389; attempt on the Emperor's life, iii, 381; effect of anti-Socialist bill, 383; in the Reichstag, iv, 440; law against, v, 318; Emperor's rescript, iii, 393; x, 357, 360, 361; trials in Russia, ii, 688; iii, 744; trials in France, vii, 326; schools of, viii, 368; ix, 344; x, 378; riots in Austria, viii, 46; ix, 67; x, 72; in Italy, iii, 458; congress proposed, vi, 829; held at Copenhagen, viii, 276; in the Netherlands, x, 625; xii, 529; disturbance in Amsterdam, xii, 529; agitations in London, xii, 342; convention, xvii, 50, 754.
- Social statistics of cities, xvi, 843.



- Society Islands, the new king of, ii, 53; annexation of, v, 40.
- Socotra, i, 9; British treaty, 718.
- Soda, manufacture of, viii, 114.
- Sojourner Truth, obit., viii, 595.
- Sokolo, town of, vi, 328.
- Solar apex, position of, xviii, 45.
- Solar corona, photographed, x, 47.
- Solar parallax, xii, 40.
- Solar physics, xiii, 55; system motion in space, xiv, 44.
- Soldiers and sailors, committee on violations of statutes as to appointments of, iv, 770; retired list, x, 252; memorial arch, Hartford, xi, 347; orphans' home, xi, 440.
- Soldiers' homes, xiii, 558, 586; xiv, 765; xvii, 307.
- Soldiers' orphans' schools, xiii, 677; xviii, 610.
- Soleillet, Paul, expeditions of, iii, 364; v, 292; xi, 371.
- Solids, solubility of, in gases, iv, 136.
- Solly, Edward, obit., xi, 726.
- Solms, Count, x, 142, 143.
- Solntseff, F. G., obit., xvii, 603.
- Solomon, M., obit., xv, 667.
- Solomon, S. J., xii, 277.
- Solon, order of, xviii, 609.
- Solovieff, Alexander, iv, 776, 777.
- Solymossy, Esther, case, viii, 47.
- Somali Land, xii, 736; xv, 270, 458.
- Somerby, G. A., obit., iv, 696.
- Somerset, Duchess of, obit., ix, 622; Duke of, obit., x, 669.
- Somerville, xi, 186.
- Somnolentia, ix, 554.
- Soopayalat, xi, 114.
- Sophia, Queen of the Netherlands, obit., ii, 611.
- Sophocles, E. A., obit., viii, 595.
- Sopt, the god, x, 36.
- Sorabjé, experiments, x, 153.
- Sorby, investigations, vii, 532.
- Sorby-Brown micro-spectroscope, ix, 217.
- Sorel, Canada, incorporated as a city, xiv, 723.
- Sorghum, experiments, iv, 841; ix, 422.
- Sorin, Edward, obit., xviii, 570.
- Sosnovski, expedition to Chir a, i, 329.
- Sothorn, E. A., sketch, vi, 811.
- Soto, Marco A., sketch, iii, 424.
- Soudan, the, Col. Gordon appointed, ii, 269; his intentions regarding slavery, *ibid.*; slave-trade in, v, 235; exploration of, vi, 326; rebellion in, vii, 255; viii, 298, 507; history and productions, 290; commerce, 386; British policy, 301; Gordon's mission, 399; operations in, ix, 283, 285, 288, 293-304, 371; map of Eastern, 237; its history, x, 308; English army disasters in, 313; xi, 310; Cossacks in, 311; fighting in, xii, 244; xiii, 293; events in the, xiv, 585; xv, 279.
- Souillart, Prof., prize to, viii, 23; xii, 95.
- Soule, Gideon L., obit., iv, 696.
- Soulié, Eudore, obit., i, 643.
- Sound, xiv, 692; xvi, 727; xviii, 618; aberration of, viii, 724.
- Sound-Signals, viii, 719; maps, 721, 727; illustrations, 721, 722, 728, 729, 730.
- Soust de Boreckenfeld, A. van, obit., ii, 611.
- South Africa, ix, 109, 112, 115; Germany in, 362-365; troubles in, with native tribes, x, 83-89; xviii, 120. See Cape Colony.
- South African Confederation, discussed in Parliament, v, 338; scheme for, ix, 346.
- South African Republic, xiv, 108; xv, 94; xvii, 74; xviii, 128.
- South America, boundaries in, i, 333; see Boundaries, Disputed; explorations in, ix, 539-543; xi, 381; xii, 314.
- South American Commission, x, 772.
- South American Congress, xiii, 829.
- Southard, W. F., experiments by, vi, 751.
- South Australia, xiv, 55; xv, 48; xvii, 45; xviii, 58.
- South Bend, Ind., xv, 145.
- South Carolina, statistics, legislative proceedings, State officers, elections, etc., in each volume; view in, i, 723; Hamburg massacre, i, 719, 720; Federal assistance, 720; other disturbances, 720; contested election, 723-727; settlement, ii, 694; robe of the speaker of the House, iii, 767; State-debt, 768, 769; election of Wade Hampton, 771; accident to Governor Hampton, 772; jetties to be constructed in Charleston harbor, 772; decision of Supreme Court, 772; Governor chosen in place of Wade Hampton, elected Senator, iv, 817; judges elected, 817; constitutional amendments, 818; ix, 739; miscegenation prohibited, iv, 818; artificial limbs for Confederate soldiers, 818; resignation of Governor Simpson, election of Johnson Hagood, 667, 670; phosphate mines, v, 669; vi, 814, 815; question of revising the Constitution, vi, 812; exodus of negroes, 812; anniversary of the battle of Cowpens, 815; education, vii, 744, 745; viii, 735; election law amended, vii, 748; Hugh S. Thompson made Governor, viii, 739; election cases, 739; Charleston, x, 737; cyclone, x, 738; earthquake, xi, 807; see also Earthquake; J. P. Richardson Governor, 806; forfeited lands, State capitol, State canal, xii, 737; population, xv, 776, and xvi, 797.
- South Dakota, xiv, 773; xv, 779; xvi, 799; xvii, 706; xviii, 693; population, xv, 780; prohibition in, 781, and xvi, 801; drought, xv, 782; lands, xvi, 801.
- South Mountain, battle of, x, 560.
- South Omaha, Neb., xvi, 170.
- South Orange, N. J., xviii, 169.
- South Pittsburg, xiv, 160.
- South Sea, German annexations in the, x, 415.
- South Sea Company, the German, x, 681.
- Souvenir spoons, xvi, 802.
- Sovereigns of Industry, xiii, 242.
- Spafford, M. H. G., sect founded by, vi, 707.
- Spain, statistics, government, etc., in each volume; views in, i, 728, 730, 732; ii, 699, 700, 701; the Carlist war, capture of Guebara, and other victories, i, 728; Estrella taken and Tolosa entered, 729; flight of Don Carlos and return of the King to Madrid, 729; the law of religious liberty discussed in the Cortes, 729; the Pope's protest against it, 730; new constitution adopted, 730; modification of the special privileges of the Basque provinces, 730; return of ex-Queen Isabella, 731; expedition against the Sooloo pirates, 732; controversy relative to the Cuban rebellion, 732; war-loan and shipment of troops to Cuba, 733; extradition treaty and surrender of W. M. Tweed, 733; indemnity to the United States, ii, 701; the royal marriage, iii, 773, 774; iv, 822; marriage bill passed, 773; the Cuban loan, 774; attempt to shoot the King, 774; the Cuban insurrection, 774; the Queen's death, 774; proposed abolition of slavery in the Antilles, iv, 822; attempted regicide, 822; new outbreak in Cuba, 822; the coolie-trade, 823; events in Cuba, v, 672; Carlist movements, 673; the French expelled orders, 673; the regicide Otero, 673; free-trade plans, vi, 816; demand for American products, 817, 818; liberal views of Alfonso, 818; Calderon centenary, 819; troubles with England, vii, 751; case of Maceo and Rodrigues, 751-752; socialism; viii, 740; organization of the Mano negra, 740; military insurrection, 740; insult to the King in Paris, 741; revolutionary movements, ix, 742, 743; death of the King, x, 738, 739; the Queen regent, 738; dynastic rivalries, 740; failure of the Anglo-Spanish convention, 740; popular disturbances, 741; earthquakes, 741; claim to the Caroline Islands, 140, 741; feeling toward Germany, 141, 142; the Sooloo convention, 742; military revolt in Madrid, xi, 808; cabinet changes, 808; politics and legislation, popular discontent, xii, 40, 740; foreign relations, recognized as a great power, 740; insurrection in, xvi, 805; anarchist disturbances, xvii, 709.
- Spanish possessions in Africa, xvi, 806.
- Sparkman, James D., obit., i, 624.
- Spaulding, Judge A., obit., i, 624.
- Spaventa, Silvio, obit., xviii, 586.
- Spear, Samuel T., obit., xvi, 656.
- Special delivery of letters, xii, 687.
- Special legislation, xiv, 373 *et seq.*
- Special senses, ix, 656; x, 690; xi, 756; xii, 672; xviii, 633.
- Specie movement, xiv, 175; xv, 161.
- Specie Resumption, in Italy, viii, 451; in United States, ii, 237, 290, 663; iii, 164, 175, 325, 801; iv, 28, 367. See also Resumption of Specie Payments, iv, 763.
- Spectra, of vapors and gases, v, 95; of the planets, xi, 54.

- Spectres of Ben Lomond, illustration, xi, 569.
- Spectroscope, new form of, xii, 111.
- Spectroscopic Observations, i, 49.
- Spectroscopy, xiii, 56.
- Spectrum analysis, xii, 412; xvi, 51.
- Spectrum photography, ix, 127.
- Spectrum, the solar, evidence from, iv, 130; stellar, changes in, x, 53; discovery of the cause of Fraunhofer's lines, xii, 412.
- Speed, J., obit. and port., xii, 741.
- Speer, R. M., obit., xv, 667.
- Spelling Reform, Faculty of University of Mississippi on, iv, 637; article on, ix, 743; German, 745.
- Spelter, market, ix, 481.
- Spence, J. B., discovery by, v, 93.
- Spence, Thomas A., obit., ii, 589.
- Spencer, G. E., obit., xviii, 570.
- Spencer, Herbert, on the nature of the elements, iii, 91.
- Spezzia, ordnance experiments at, vii, 578; illustrations, 579, 580.
- Sphinx, the, clearing of sand from, xii, 18.
- Spicer, Elihu, obit., xviii, 570.
- Spicer, William F., obit., iii, 645.
- Spinal ganglia, xii, 672.
- Spinner, F. E., obit., xv, 667.
- Spinola, Francis B., obit., xvi, 656.
- Spinoza, statue of, v, 555.
- Spirilla, ix, 498.
- Spitaler, Prof., ix, 52.
- Spleen, the, function of, vi, 751; viii, 635; extirpation of the, ix, 748.
- Splenectomy, viii, 751.
- Spofford, Henry M., obit., v, 596.
- Spofford, R. S., sketch, xiii, 653.
- Spokane Falls, xiv, 160.
- Spong, Harry, xii, 678.
- Spontaneous generation, ix, 94.
- Spooner, Alden J., obit., vi, 688.
- Spooner, Lysander, obit., xii, 612.
- Spoon-holder, xvi, 708.
- Sporer, Herr, xi, 57.
- Sports, recent books on. See Literature, in every volume.
- Spottiswoode, W., obit., viii, 605.
- Spotts, James H., obit., vii, 644.
- Spottsylvania, battle of, xi, 418.
- Sprague, John J., obit., iii, 646.
- Sprague, Peleg, sketch, v, 673.
- Sprague, William B., sketch, i, 733.
- Sprague, Wash., xvi, 170.
- Spreckels, Claus, x, 62; xii, 352.
- Spring, Gordon, vi, 8, 88.
- Spring, Samuel, obit., ii, 589.
- Spring, W., experiments by, viii, 113; ix, 120; xi, 137.
- Springer, Anton, obit., xvi, 686.
- Springfield, Ill., Capitol at, illustration, ii, 383; xvi, 171.
- Springfield, Mass., xv, 146.
- Springfield, Mo., xv, 146.
- Springfield, O., xv, 146.
- Springs, mineral, x, 593 *et seq.*
- Sproat, Morgan L., obit., i, 624.
- Sproull, T., obit., xvii, 575.
- Spurgeon, Charles H., xii, 60; sketch and port., xvii, 711.
- Squier, Ephraim G., sketch and port., xiii, 663.
- Squirrels, in United States, x, 390.
- Stabrovski, Dr., xii, 678.
- Stackhouse, E. T., obit., xvii, 575.
- Stafford, broken dam in, ii, 227.
- Stahl, on lichens, iii, 476.
- Stahr, A. W. T., sketch, i, 733.
- Stained glass, ix, 242.
- Stamford, Conn., xvi, 171.
- Stämpfli, J., obit., iv, 701.
- Standeford, E. D., obit., xii, 613.
- Standing Bear, Chief of the Poncas, iv, 653; speech by, 654.
- Stanford, Leland, obit. and port., xviii, 571.
- Stanford University, xviii, 697.
- Stang, Fredrik, obit., ix, 622.
- Stanhope, Edward, x, 450.
- Stanley, Arthur P., sketch, vi, 822.
- Stanley, Frederick Arthur, x, 449.
- Stanley, H. M., sketch, ii, 701; explorations of, i, 333; ii, 323, 329; iii, 363; vii, 336; viii, 385; ix, 166, 167; x, 192, 193; xii, 250, 302; in Africa, xiv, 347 *et seq.*; sketch and port., 777.
- Stanley of Preston, Lord, sketch and port., xiii, 275.
- Stannard, George J., obit., xi, 701.
- Stanton, Henry B., obit., xii, 613.
- Staples, H. B., obit., xvi, 656.
- Starch, in leaves, ix, 129.
- Starchevich, Dr., ix, 70, 72.
- Starcey, Alfred B., obit., xviii, 571.
- Stark, George, obit., xvii, 575.
- Stark, John, statue of, xv, 599.
- Starkweather, H. H., obit., i, 624.
- Starkweather, J. C., obit., xv, 667.
- Starr, Chandler, obit., i, 624.
- Starr, Samuel H., obit., xvi, 656.
- Starrett, Mrs., iv, 639.
- Star-Route Trials, vii, 753; viii, 163, 777.
- Stars, discoveries of, i, 49; ii, 47, 48; double, ii, 37; v, 36; vii, 36; viii, 26; xi, 53; xii, 44; red, iii, 38; variable, iii, 38; v, 36; vi, 39; vii, 40; viii, 27; xi, 55; xii, 43; motion of, vi, 39; charts of, viii, 27; motion of, ix, 53; x, 52; x, 53; xi, 53; the nearest fixed, ix, 53; occultations, x, 53; catalogues, xi, 58; xii, 44. See Astronomical Progress and Discovery.
- Star-shower, the Biela, xi, 52.
- State banks in Ill., xviii, 398.
- State Claims, Florida, against Federal Government, v, 269; Missouri, vii, 565; Georgia, viii, 387.
- Statehouse at Albany, xvii, 507.
- State judges, indictment of, v, 703.
- State officials, suits against, in Georgia, v, 304.
- State Rights, Congress on, i, 166; as to suits against municipalities, iii, 10; conflict between United States and Arkansas courts, 25; alleged Federal interference with, v, 203; decisions on, vi, 477.
- States, claims against, v, 479; New York law on, vi, 516; proposed amendment, vii, 462; obligation of contracts, vii, 648; viii, 493; Board of Claims, 570; new, xiv, 193; xv, 235.
- Statistical Congress, i, 734.
- Statuary. See Fine Arts.
- Statues at Athens, xi, 701; of Liberty, 323, 649; illustration, 650; ancient, newly discovered. See the articles on Archaeology.
- Stauber, Anton, xii, 316.
- Stauffenberg, Dr. von, xii, 333.
- Staunton, E. I., obit., xiv, 648.
- Stead, Mr., x, 452-453.
- Steam, exhaust, utilization of, iii, 723; pressure, vi, 546.
- Steamboat Accidents, v, 580; vi, 220. See Disasters in 1885.
- Steam-Engine, Wells's Balance, iii, 774.
- Steamer lines, new, xiii, 35, 103, 176, 255, 415, 549, 832.
- Steamers, whaleback, xviii, 282.
- Steamships, ironclad, first built, xii, 229; new, xiii, 307; dimensions, 307; speed, xv, 787.
- Steamships, line from Rio Janeiro to New York, iii, 63; to Halifax, v, 16; from Hudson Bay, 218; subsidized, in Germany, ix, 361; in Mexico, 492; privileges of, in Guatemala, xii, 347; mail, to Australia, x, 61; lack of American, x, 40.
- Steam-tugs for canals, vi, 250.
- Stearns, Charles W., obit., xii, 613.
- Stearns, J. F., sketch, xiv, 648.
- Stearns, Marcellus L., i, 295.
- Stearns, O. S., obit., xviii, 571.
- Stearns, Onslow, obit., iii, 646.
- Stearns, Silas, sketch, xiii, 653.
- Stearns, William A., obit., i, 624.
- Stedman, C., obit., xv, 667.
- Steel, ferro-manganese process, i, 515; new theory, vi, 100; use and manufacture, vi, 542; vii, 530; influence of silicon on, xii, 480; manganese, 480; viscosity of, 479; carbon in, 480; xv, 525; xvii, 439; xviii, 479. For improved processes in working, see the articles on Metallurgy.
- Steel and Iron Industry, xi, 449.
- Steel, Sir John, obit., xvi, 636.
- Steele, Maj., x, 129.
- Steele, J. Dorman, obit., xi, 702.
- Steeple-ghasing, xii, 771.
- Steere, Bishop, African journey of, i, 332.
- Steers, George, x, 788.
- Stefan, Prof., obit., xviii, 586.
- Steifensand, Xavier, obit., i, 643.
- Stein, Dr., microscopical experiments, ix, 515.
- Steiniger, L., xi, 375.
- Steinen, Dr. von den, xii, 314.
- Steiner, C. von, ix, 350.
- Steiner, D. W., experiments, x, 692.
- Steiner, L. H., obit., xvii, 575.
- Steinmetz, K. F. von, obit., ii, 611.
- Steinway, Albert, obit., ii, 589.
- Steinway, T., sketch, xiv, 648.
- Steinwehr, Baron, obit., ii, 589.
- Stela of Fassiler, xiii, 23.
- Stellaland, ix, 112; x, 85, 87.
- Stellar parallax, ix, 53.
- Stellmacher, Madame, ix, 754.
- Stenhouse, C. F., observations by, viii, 526.
- Stenograph, the, xv, 816.
- Stephan, Mr., x, 53; xi, 56.
- Stephen, Condie, x, 4.
- Stephen, J. K., obit., xvii, 603.
- Stephens, Alexander H., sketch, ii, 702; inaugural address, vii, 346; sketch and portrait, viii, 741; statue of, xviii, 340.
- Stephens, Ann S., obit., xi, 702.
- Stephens, George, ix, 23.
- Stephenson, John, obit., xviii, 571.
- Stephenson, J. W., ix, 507 *et seq.*
- Stern, Daniel. See Agoutt.
- Sternberg, Count, ix, 636.
- Stevens, Aaron F., obit., xii, 613.
- Stevens, Alfred, medal, x, 366.
- Stevens, Ambrose, obit., v, 596.



- Stevens, E. L., obit., xv, 667.  
 Stevens, Henry, obit., xi, 702.  
 Stevens, J., obit., xvii, 608.  
 Stevens, L. I., experiments by, viii, 632.  
 Stevens, William B., sketch and portrait, vii, 767; ix, 304.  
 Stevenson, Adlai E., sketch and port., xvii, 712.  
 Stevenson, James, sketch, xiii, 653.  
 Stever, Gustav, obit., ii, 611.  
 Stewart, Alexander, obit., i, 643.  
 Stewart, A. T., sketch, i, 735.  
 Stewart, Balfour, obit., xii, 637.  
 Stewart, Sir Donald, v, 5; x, 13.  
 Stewart, George W., obit., xvi, 656.  
 Stewart, Sir Herbert, in the Sudan, x, 313; obit. and portrait, ix, 745.  
 Stewart, Isaac D., obit., xii, 614.  
 Stewart, Julius L., x, 362.  
 Stewart, Col. Patrick, x, 4.  
 Stewart, W. A., obit., xvii, 575.  
 Stigmata, case of Louis Lateau, viii, 694.  
 Stigmata maidis, ix, 272.  
 Stiletto, the yacht, x, 193.  
 Stille, R. B., obit., iv, 696.  
 Stillman, J. M., experiments by, vi, 100; vii, 86.  
 Stillman, W. J., observations by, viii, 526.  
 Stillwell, Silas M., obit., vi, 689.  
 Stirling-Maxwell, Sir William, obit., iii, 661.  
 Stisted, Sir Henry W., obit., i, 643.  
 Stockbridge, Mass., view of a house at, xii, 367.  
 Stock Exchange, the London, report on, iv, 176.  
 Stockhardt, J. A., obit., xi, 726.  
 Stockley, C. C., sketch, vii, 189.  
 Stock Market, vii, 117; viii, 335; xiii, 328; xiv, 314; xv, 308; xvii, 270. See Finances and Financial Review.  
 Stockton, Cal., growth of, xii, 130.  
 Stockton, John D., obit., ii, 589.  
 Stockton, Richard, obit., i, 624.  
 Stockton, T. H., obit., xvii, 575.  
 Stokes, J. H., obit., xv, 668.  
 Stoletoff, Gen., x, 2.  
 Stone, Charles P., obit., xii, 614.  
 Stone, Delia C. H., obit., xii, 615.  
 Stone, J. A. B., sketch, xiii, 654.  
 Stone, Lucy, iv, 598; obit., xviii, 572.  
 Stone, Ormond, xi, 56.  
 Stone, Prof., observations, vi, 39.  
 Stone, Dr. W., opinions on yellow fever, iii, 316.  
 Stoneman, George, vii, 81.  
 Stones, Precious, xviii, 638.  
 Stoney, G. J., observations by, iv, 52; xii, 489.  
 Stoney, G. M., explorations by, viii, 383; xi, 380.  
 Storage batteries, ix, 307.  
 Storer, David H., obit., xvi, 656.  
 Storer, F. H., experiments by, vi, 676; x, 157.  
 Storey, Wilbur F., obit., ix, 612.  
 Storm apron, xvi, 709.  
 Storms, frequency of, x, 582; xi, 543, 562; xii, 491, 492; movements of, 493; xiii, 533; xiv, 546; xv, 505; xvii, 451; in Georgia, xviii, 349; in Louisiana, 464; in Mo., 499; in Oregon, 598; in South Carolina, 691.  
 Storm-signals, cautionary, iv, 806.  
 Storm, Theodor, sketch, xiii, 669.  
 Storthing House, the, illustration, i, 738.  
 Story, Julian, xii, 276.  
 Stoughton, E. W., sketch, ii, 703.  
 Stoughton, W. L., sketch, xiii, 654.  
 Stout, F. A., obit., xvii, 576.  
 Stowe, Calvin E., obit., xi, 703.  
 Stoyanoff, Z., sketch, xiv, 670.  
 Strachan, Capt. J., xi, 381.  
 Stradbroke, John E. C. R., obit., xi, 727.  
 Strahan, Sir G., ix, 60.  
 Strain, Patrick, obit., xviii, 572.  
 Straits Settlements, xiv, 399; xv, 404; xvi, 343; xvii, 325.  
 Strakosch, Maurice, obit., xii, 638.  
 Strakosch, Max, obit., xvii, 576.  
 Strandberg, C. W. A., obit., ii, 612.  
 Strange, Gen., x, 128, 129.  
 Strangford, Emily A., obit., xii, 638.  
 Stransky, M., x, 108.  
 Strasburg, university at, ix, 359; view of the cathedral of, ii, 351.  
 Stratford de Redcliffe, Viscount, obit., v, 603.  
 Strathnairn, Lord, obit., x, 670.  
 Stratton, Charles H. (Tom Thumb), viii, 596.  
 Stratton, J. L. N., obit., xiv, 648.  
 Stratton, J. Willis, obit., i, 624.  
 Strauch, Col., x, 191.  
 Strawbridge, J. D., obit., xv, 668.  
 Street, Alfred B., sketch, vi, 825.  
 Street, George E., obit., vi, 696.  
 Street-cars, law regarding, iii, 523; modes of traction, ii, 495; iv, 346. See Railroads, Elevated.  
 Streight, A. D., obit., xvii, 576.  
 Strelak, the Russian ship, x, 13.  
 Stremayr, Dr., sketch, iv, 60.  
 Strikes, ix, 344; xi, 277, 358, 453; xii, 742 *et seq.*; xiv, 377, 390; in France, xiii, 349; at Carmaux, xvii, 288; granite workers, xvii, 430; coal, xviii, 328. See also Labor-Strikes.  
 Stringham, Silas H., sketch, i, 736.  
 Strohecker, Dr., xi, 538.  
 Stromeyer, August, obit., xii, 638.  
 Strong, water-gas process, viii, 375.  
 Strong, W. E., obit., xvi, 656.  
 Strong's island, discovered, x, 138; views on, 141, 143.  
 Stronhal, V., experiments, xii, 749.  
 Strontium, ix, 477.  
 Strophanthin, x, 300.  
 Strother, David Hunter, sketch and port., xiii, 654.  
 Strousberg, B. H., obit., ix, 622.  
 Structure of organisms, causes of, xii, 668.  
 Struve, Otto, experiments, ix, 47, 53; x, 594; xi, 51.  
 Stry, burning of, xi, 73.  
 Strychnine, identification, xii, 109.  
 Strype, W. G., experiments by, viii, 113.  
 Stuart, A. H. II., obit., xvi, 656.  
 Stuart, G. H., obit., xv, 668.  
 Stuart, Sir John, obit., i, 643.  
 Stuart, Mary M., obit., xvi, 657.  
 Stuart, Villiers, ix, 279.  
 Stubbs, experiments, vi, 280.  
 Sturgeon, Daniel, obit., iii, 646.  
 Sturgis, S. D., sketch, xiv, 648.  
 Sturtevant, B. F., obit., xv, 668.  
 Styron, x, 300.  
 Suakin, expedition in, viii, 300; railroad in, ix, 316.  
 Submarine borings, xvii, 255.  
 Submarine foundations, xviii, 280.  
 Submarine gun, xvi, 558.  
 Subsidies, Congress on, i, 166.  
 Substances, New, xi, 139; xii, 104; xiii, 139; xiv, 125; xv, 102; xvi, 111; xvii, 79; xviii, 133.  
 Subways for wires, xiii, 311.  
 Successions, intervention in cases of, vii, 627.  
 Succoth, ix, 19; x, 36.  
 Sudeikin, Col., murder of, xii, 724.  
 Suez Canal, the, effect of, ii, 263; profits of, 270; affected by the Turkish War, 271; cost of, to Egypt, 271; profits in 1878, iii, 288; value to Egypt, vii, 236; Granville's proposal, 363; enlargement of, viii, 307; condition in 1883, viii, 743; progress, ix, 311; x, 308; xi, 311; construction of, xii, 240; neutralization of, 242; xiii, 239; xiv, 235; xv, 277; xvii, 247; xviii, 277.  
 Suffrage, resolutions on interference with the right of, i, 180, 181; Garibaldi on universal, iv, 526; property qualification for, 771; agitation in Belgium for universal, vi, 59; xviii, 76; restrictions upon, xii, 245; for women, in Colorado, xviii, 179; in Idaho, 396.  
 Sugar, xiii, 500; culture in Minnesota, iii, 568; commerce in, iv, 169; test for, v, 94; culture in Queensland, vii, 44; in Cuba, viii, 264; xii, 216; duty on, viii, 219; tests, etc., viii, 745; law in Belgium, ix, 80; tax in France, 342; crisis in trade, 379; new kind, x, 154; xi, 139; refining of, in Chili, xii, 115; bounties, 345; xiii, 398; convention, xiv, 396; xvii, 124; general article on, xvii, 714; beets, xviii, 597.  
 Sugar and wine exhibition, xiv, 82.  
 Suleiman Bey Sami, obit., viii, 605.  
 Suleiman Nyasi, x, 318.  
 Suleiman Pasha, sketch, ii, 703; obit., viii, 605.  
 Sul Hippis, x, 752.  
 Sullivan, Alexander M., obit., ix, 622; x, 713.  
 Sullivan, Algernon S., obit., xii, 615.  
 Sullivan, Barry, obit., xvi, 686.  
 Sullivan, Sir Edward, obit., x, 670.  
 Sulphur, new oxide of, i, 98; as a mordant, 99; new process, vii, 90; test for, viii, 112; from alkali waste, 115; discovery of, xi, 556; xii, 307; process for extracting, ix, 122.  
 Sulphur-Alcohol, xii, 678.  
 Sulphurets, reducing action, ii, 93.  
 Sulphur Springs, x, 598.  
 Sultan, plot to dethrone, xii, 773.  
 Sulu, cession of, to North Borneo Company, vi, 329; Archipelago, the, xiii, 748.  
 Sumatra, revolt in, iii, 597, 598; vii, 590; viii, 557; Government railways in, xvii, 255. See Acheen.  
 Summerside, xiv, 161.  
 Summer school, Catholic, xv, 674.  
 Sun, the, observations on, i, 44, 45; utilizing the heat of, 519; oxy-

- gen in, ii, 42; iv, 130; spots, cycle of, ii, 42; explosion, ii, 43; total eclipse, iii, 33; vii, 33; viii, 20; xii, 41; spots, iii, 35; iv, 51; v, 33; vii, 33; ix, 49; x, 47; connection of the spots with the aurora, x, 47; with the weather, xi, 49; parallax, v, 33; vi, 38; vii, 36; xii, 40; Siemens's theory, vii, 32; heat from, vii, 33; xi, 49; spectrum of the corona, iv, 134; xi, 49; disturbances in, vi, 38; viii, 20; physical constitution of, ix, 48; xiii, 53; xviii, 41; spots on, xv, 39; xvii, 35.
- Sunapee Lake, xiv, 590.
- Sunday Laws, iv, 667; in Maryland, 591; in Texas, 830; in Ohio, vi, 699; in California, viii, 78.
- Sunday Legislation, xiii, 748.
- Sunday rest, international congress, xviii, 699.
- Sunday-schools, in India, i, 405; Raikes anniversary, v, 674; xviii, 700.
- Sunderland, Thomas, obit., xi, 703.
- Sungari, sources of the, discovered, xii, 311.
- Sungarians, revolt of, ii, 101.
- Sunn hemp, xiii, 248.
- Sunsets, red, x, 48; xi, 54, 546.
- Sunshine, recording of, x, 583.
- Superior, Wis., xv, 147.
- Surand, Gustave, x, 358.
- Surgery, process in, vi, 555; viii, 747; ix, 746; x, 742; xiii, 752; and medicine, recent advances in, xviii, 701.
- Surinam, xvi, 564.
- Surveys of public lands, xiii, 467.
- Susiana, excavations in, xi, 26.
- Suspension bridge, Brooklyn, illustration, i, 257.
- Suspensions from office, xi, 238.
- Sutherland, G. G. L. G., obit., xvii, 603.
- Sutherland, John, obit., xvi, 686.
- Sutherland, Josiah, obit., xii, 615.
- Sutro Tunnel, the, iii, 288.
- Sutter, John A., sketch, v, 674.
- Sutton, G. L., invention, xi, 743.
- Sutton, Henry, invention, vii, 266.
- Sutton's battery, vii, 266.
- Sverdrup, Johan, x, 745; xiii, 757.
- Swaim, Gen. D. G., trial, ix, 776.
- Swamp-Lands, reclamation of, iv, 625; vi, 251; decision, xiii, 499.
- Swan, electric lamp of, vii, 275; ix, 305; illustration, 308.
- Swann, Thomas, obit., viii, 595.
- Swat, the Akhund of, authority of, see Afghanistan, ii, 4, 6; hatred for British influence, 7; iii, 582; obit., 648.
- Swayne, Noah H., obit., ix, 612.
- Swaziland, xii, 93; xiv, 107; xviii, 126.
- Sweat-ducts, closing, v, 356.
- Sweating-sickness, xiii, 313.
- Sweating system, the, xiii, 391.
- Sweden and Norway, statistics, government, legislative proceedings, etc., in each volume; Sweden: views in, i, 737, 738; ii, 705; the King's address to Parliament, i, 738; the Council of State made a ministry, 738; metrical system, 738; army bill, iii, 777; the island of St. Bartholomew ceded to France, 777; emigration, vii, 769; the constitution of Sweden, viii, 754; Norway: admitted to the monetary union, i, 738; railroads and telegraphs, ii, 704; railroad loans, iii, 777; royal veils and dead-lock, v, 676; cabinet changes, 675, 676; radical party, vi, 827; Republican movement, vii, 771; constitutional monarchies under one king, vii, 767; Norway a republic of peasants, 771; conflicts between the King and Storting, 771; Björnsterne Björnson leader of the peasant party, 772; political crisis, viii, 755; ministers impeached, new ministry, ix, 751, 752; conflict with Sweden, x, 745; xviii, 706; sentiment in favor of separation, 745; ministerial crisis, xii, 714.
- Swedenborgians. See New Church.
- Swedes' Church, old, xviii, 257.
- Swedish quarto-millennial, xiii, 506.
- Sweeny, T. W., obit., xvii, 576.
- Sweets, disease from use of, viii, 289.
- Sweetser, Seth, obit., iii, 646.
- Switzer, J. B., obit., xiii, 654.
- Swett, Leonard, obit., xiv, 648.
- Swift, Edward D. T., xi, 57; x, 53.
- Swift, John F., obit., xvi, 657.
- Swift, Lewis, discoveries by, ii, 46; iii, 33, 36; iv, 51; v, 35; vi, 38, 39; prizes to, iii, 39; vii, 41; observatory for, v, 36; discoveries, x, 51, 53, 56; xii, 45.
- Swinburne, John, obit., xiv, 640.
- Swinging-ship's berths, xvi, 709.
- Swinhoe, R., obit., ii, 612.
- Swinton, W., obit., xvii, 576.
- Swisshelm, Jane G., obit., ix, 612.
- Swiss lakes, soundings, xii, 313.
- Switzerland, statistics, government, etc., in every volume; views in, i, 739; ii, 705, 706; cantonal constitutions adopted, i, 739; difficulty in Ticino, 739; international postal congress, 740; uniform citizenship law, 740; St. Gothard Tunnel and railway, ii, 706; iii, 778; v, 667; capital punishment restored, iv, 825; school act, 825; military defenses, v, 676; vii, 775; bill for separation of church and state rejected, v, 676, 677; rectification of Baden boundary, 677; rights of asylum, vi, 829; Socialist congress forbidden, 829; the Savoy question, 829; land-slips, 830; Col. Frei, vii, 775; ix, 754; x, 746; religious conflict, viii, 756; salvation army, 756; ix, 754; Mormon agents, 754; conflict with Ticino, 754; expulsion of Anarchists, 754; x, 746; withdrawal from the Latin Union, ix, 754; international conference, 755; the temperance question, x, 746; the church question in Ticino, 746; the Simplon tunnel, 746; copyright conference, x, 746; xi, 810; xii, 755.
- Switzerland settlement, the, xv, 94.
- Swords, Thomas, obit., xi, 703.
- Sybaris, contemplated excavations at, xii, 22.
- Sydney, Australia, exhibition at, ii, 52; iii, 55; v, 40; Parliament buildings, illustration, iv, 58.
- Symonds, J. A., obit., xvii, 587.
- Synge, Col., captivity of, v, 690.
- Syntheses, new, v, 96.
- Syracuse, N. Y., growth of, xi, 186.
- Syr Darya, diversion, viii, 309.
- Syrian inscriptions, xiv, 23.
- Syzygium jambolanum, x, 300.
- Szechenyi, Count Stephen, explorations by, v, 289; sketch, 371; statue of, 371.
- Taafe, Count Eduard, sketch, iv, 60; x, 71.
- Tabriz, city gate of, illustration, ii, 637.
- Taché, Archbishop, x, 711.
- Tacitus, quoted, ix, 600.
- Tacoma, Wash., xiv, 161.
- Tadjiks, the, x, 3, 8.
- Taft, Alphonzo, sketch, i, 740; obit., xvi, 657.
- Taft, R. C., nominated, xiii, 715.
- Tag-envelopes, registered package, xii, 688.
- Taghioni, M., ix, 310; obit., ix, 623.
- Talpanhes, palace of, and ruins of, illustrations, xi, 28, 29.
- Tahiti, annexed to France, v, 40.
- Taimyr-Land, discoveries in, iii, 356, 357.
- Taine, Hippolyte A., obit. and port., xviii, 587.
- Tainter, experiments, vi, 257, 787.
- Tait, Archibald Campbell, sketch and portrait, vii, 775.
- Tait, Lawson, investigations by, x, 742.
- Takale, ix, 301.
- Talbot, Sir Charles, obit., i, 643.
- Talbot, Joseph, obit., viii, 595.
- Talbot, Thomas, iii, 535.
- Talbot, W. H. F., obit., ii, 612.
- Talcott, Alvan, obit., xvi, 657.
- Talcott, John L., obit., xii, 615.
- Taljanzeff, experiments, viii, 632.
- Tallahassee, Fla., university at, ix, 331.
- Talmage, Goyn, obit., xvi, 657.
- Talmage, J. V. N., obit., xvii, 577.
- Tamaniet, battle of, ix, 295.
- Tamasese, King, obit., xvi, 686.
- Tamberlik, E., sketch, xiv, 670.
- Tameresse, xii, 730.
- Tamsui, siege of, ix, 143.
- Tanagra, discoveries at, xiii, 27.
- Tanis, relics at, ix, 20.
- Tanganyika, Lake, outlet of, v, 297; antislavery posts at, xviii, 188.
- Tangyet Woon, xi, 115.
- Tannate of punice, x, 300.
- Tanner, E. A., obit., xvii, 577.
- Tannin, estimation of, ix, 123.
- Tanno cannabine, ix, 272.
- Tapestries, ix, 787.
- Tappan, H. P., obit., vi, 689.
- Tappan, M. W., obit., xi, 703.
- Tappeiner, experiments by, x, 694.
- Tarafat, Madagascar, fight at, x, 565.
- Tarawera, Mt., eruption of, xi, 66.
- Tarbox, I. N., sketch, xiii, 654.
- Tarbox, John K., obit., xii, 615.
- Target, deflecting, xiv, 812.
- Tariff, in Argentine Republic, ii, 32; Austria, 56, 58; iii, 42; x, 70; France and Germany, ii,



- 114; iv, 435; Mexico, iii, 553; Brazil, v, 63; Chili, 97; xiv, 79, 136; Canada, v, 213, 219; iv, 317; Peru, vi, 735; Spain, vii, 752; effect of high, in Germany, viii, 394; United States, Presidents on, ii, 667; viii, 160; bill for commission, v, 172; vii, 139; Morrison's bill, ix, 203; Russian, x, 716; extra, in Brazil, xiv, 82.
- Tariff Revision, vii, 777; viii, 193; text of act, 194; xi, 252; in Germany, x, 416.
- Tariff War, between Austria and Germany, x, 70; France and Roumania, 377; between Russia and Germany, xviii, 682.
- Tarim River, explored, xii, 310.
- Tarnoczy, Archbishop, obit., i, 643.
- Tarpom or tarpum. See Tarpon.
- Tarpon, the, illustration, xii, 756.
- Taschereau, Cardinal, xii, 716, 717.
- Tate, Ralph, port., xviii, 39.
- Tattegrain, Francis, xii, 275.
- Taunton, recent growth of, xi, 187.
- Tasmania, viii, 36; ix, 60; queen and last native of, i, 53; tin-mines in, vi, 44; gold, 47; x, 66; xi, 64; xii, 48; xiii, 67; xiv, 57; xvi, 64; xvii, 45; xviii, 59.
- Tate, R., defalcation, xii, 462.
- Taubert, Wilhelm, obit., xvi, 686.
- Taulbee, W. P., obit., xv, 668.
- Taunt, Emory H., obit., xvi, 657.
- Tavernier, Jules, sketch, xiv, 649.
- Tax, direct, refunding of, xiv, 203.
- Taxation, in Italy, iv, 524; v, 408, 409; vi, 449; in Austria, v, 44; viii, 42; in Great Britain, vi, 362; remission of, in Prussia, vi, 775; in India, vii, 416; in Russia, 733; in United States, President Arthur on, vi, 780; on reduction of, viii, 160; of State property, vii, 409; of seetarian asylums, iv, 721; of mortgages and mortgaged property, iv, 593, 673; vi, 535; reduction, viii, 789; ix, 786; of national banks, x, 621; reform, x, 770; of national bank shares, 621. For State laws, see under titles of States.
- Taxes, Muhlenberg, xviii, 425.
- Tay Bridge, the, x, 328; construction pontoon, illustration, 328.
- Taylor, Robert W., obit., iii, 646.
- Taylor, Alfred, obit., xvi, 658.
- Taylor, Alva B., sketch, xiv, 649.
- Taylor, Arthur F., obit., viii, 595.
- Taylor, Bayard, sketch, iii, 778.
- Taylor, Benjamin F., obit. and portrait, xii, 755.
- Taylor, David, obit., xvi, 658.
- Taylor, Frederick, sketch, xiv, 670.
- Taylor, Gen. Sir Henry, i, 643.
- Taylor, Sir Henry, author, xi, 727.
- Taylor, Isaac, ix, 23.
- Taylor, Isaac E., sketch, xiv, 649.
- Taylor, James W., obit., xviii, 572.
- Taylor, John O., obit., xv, 668.
- Taylor, Judge, opinion, x, 323.
- Taylor, Julius S., obit., xvi, 658.
- Taylor, L. M., obit., xvii, 577.
- Taylor, Richard, sketch, iv, 825.
- Taylor, Robert L., renominated, xiii, 763.
- Taylor, S., experiments by, iii, 727.
- Taylor, Tom, obit., v, 603.
- Taylor, W. B., theory of, viii, 24.
- Taylor, William, obit., xi, 704.
- Taylor, W. R., sketch, xiv, 649.
- Teherkaskij, Prince, obit., iii, 662.
- Tehernajeff, Gen., x, 6.
- Tchernicheffski, N. G., sketch, xiv, 670.
- Tehernytshevsky, nihilism of, iv, 683.
- Teachers' Association, xiii, 760.
- Tebbutt, J., discovery by, vi, 38.
- Tecchini, F., observations by, xi, 49, 546.
- Tecchio, Sebastiano, obit., xi, 727.
- Tees River, breakwater on, iii, 287.
- Teheran, old south gate of, illustration, ii, 638.
- Tehuantepec Ship Railroad, ix, 312; x, 591; xii, 230, 502; xiii, 579.
- Teimene tribe, the, x, 8.
- Teisserenc de Bort, ii, 320.
- Tekke Turkomans, the, x, 7.
- Te Kooti, obit., xviii, 587.
- Telegram Company, Reuter's, xi, 636.
- Telegraph companies, contest between, v, 417; suits against, viii, 576; confidential nature of messages, iv, 533; conference, tariff adopted, x, 420.
- Telegraphs, subterranean, ii, 278; iv, 347; v, 252; ocean, iv, 346; v, 242, 251, 252; in Costa Rica, xii, 211.
- Telegraph system, Signal-Service, iv, 816.
- Telegraphs and Telephones, statistics of, i, 240; vii, 119, 785.
- Telegraphy, improvements in, i, 515, 520; vi, 255, 256; synechronous, ix, 309.
- Teleki, Count, obit., i, 643.
- Tel-el-Mashkutah, x, 35.
- Tel-el-Ychoodieh, cemeteries of, xii, 18.
- Telepathy, xviii, 708.
- Telephone, the, i, 740; ii, 706; statistics, vii, 785; ix, 307; illustrations, ii, 707, 708; xi, 811; mechanical, xi, 811; litigation concerning the patent, xii, 649.
- Telescope, the Lick, x, 54; the Yerkes, xviii, 47.
- Telescopes, manufacture of, xii, 137; xvi, 55.
- Tell Defenneh, xi, 28.
- Teller, Henry M., portrait, vii, 811.
- Tellkampff, J. L., sketch, i, 741.
- Tell Nebesh, excavations at, xi, 27.
- Tellurium, new oxide of, viii, 111; in copper, ix, 477.
- Telpherage, viii, 679.
- Téméraire, illustration, vii, 569.
- Tempel, W. E., discoveries, ii, 46; iv, 51; his comet, x, 50; obit., xiv, 671.
- Temperance, local-option laws, iii, 519; iv, 421; viii, 519; civil damages, iii, 625; iv, 516, 599; high license; vii, 567; viii, 546; Scott act, vi, 219; screen-law, 539; Pond bill, vii, 658; resolution in Parliament on, iv, 456; v, 342; decisions on questions of, iv, 579, 592; vi, 467; vii, 448; Downing law, ix, 532; agitation in Canada, ix, 268; in Switzerland, x, 746; local-option law in Georgia, 409; xi, 252; instruction in public schools, xvi, 814. See also Prohibition, viii, 661. For conventions and State acts, see under titles of States.
- Temperance map, xvi, 815.
- Temperance Society, Church of England, xiii, 14.
- Temperature, sense of, x, 689; determination of the rate of, xi, 540; conditions that affect, xii, 488; observations of, in Russia, 488; of the ocean, 489; at Boston, England, and at Mount Washington, 489; effect of, on the blood, 673; xiii, 531; xiv, 546.
- Temple, Sir Richard, ix, 46.
- Temple of Amphiaras, xi, 34.
- Temple of Bubastis, xii, 19.
- Temple of Jupiter, xii, 21.
- Temporal Power, the, Spanish Cortes on, ii, 699. See Papacy.
- Tenants, compensation for improvements by, viii, 410.
- Ten Broeck, R., obit., xvii, 577.
- Tenduf, vi, 327.
- Tengkoë Arab, spiritual chief of the XXVI, v, 555.
- Tennessee, statistics, government, legislative proceedings, elections, etc., in every volume; views in, i, 744; ii, 711; commission of agriculture, statistics, and mines, i, 741; State debt, i, 742; ii, 708, 710; iii, 780; iv, 827; v, 830, 831; viii, 757; James D. Porter elected governor, and Judge Bailey Senator, i, 745; Bank of Tennessee, ii, 711; Albert S. Marks elected governor, iii, 782; sketch of his life, 784; decision on the legal status of the Southern States during the war, 784; bill to abolish fees, iv, 826; repudiation of railroad bonds, 827; repeal of the Memphis charter and others, 829; debt of Memphis, 829; yellow fever, 829; Alvin Hawkins elected governor, v, 677, 681; education, penal institutions, 681, 682; increase of representatives, vi, 831; mineral wealth, vii, 739; manufactures, 790; Governor W. B. Bates, viii, 756; ix, 756; ochre deposits discovered, ix, 757; timber, 757; peanuts, x, 748; xii, 758; Robert L. Taylor elected governor, xi, 813; population, xv, 795, and xvi, 818; convict mining troubles in, xvi, 821, and xvii, 725.
- Tennyson, Alfred, Lord, sketch and port., xvii, 727.
- Tenney, Sanborn, obit., ii, 589.
- Tenney, Sarah M. B., obit., i, 624.
- Tenney, William J., sketch and portrait, viii, 758.
- Tenno (Mikado), the, ix, 416.
- Tenom, rajah of, ix, 558.
- Tenure-of-Office Act, x, 432.
- Te Rama Rao, volcano, ix, 275, 276.
- Tergukassoff, A. A., sketch, ii, 712.
- Terhune, John, obit., xi, 704.
- Terra-cotta, ix, 246.
- Terra del Fuego, x, 41; xii, 315; character of the Fuegians, x, 41, 42.
- Terrapin-Culture, x, 748.
- Terreros, Gen., x, 142.
- Terriers, ix, 260, 261.

- Territories, United States, survey of, i, 333; iii, 336; admission of, ix, 213.
- Terry, Alfred H., sketch and port., xv, 796.
- Terry, Gen. Alfred H., i, 43; x, 429.
- Terry, David S., obit., xiv, 649.
- Terry, William, obit., xiii, 655.
- Terziani, Eugenio, obit., xiv, 671.
- Teschenberg, Ernest von, obit., xi, 727.
- Test-oath, repeal, ix, 203.
- Tetnuld, Mt., in the Caucasus, xii, 313.
- Teuffel, W. G., obit., iii, 662.
- Teusch, Dr., xi, 382.
- Tewfik Bey, death of, viii, 302.
- Tewfik I., x, 305, 307. See Mohammed Tewfik.
- Tewfik, Pasha, port., xvii, 246.
- Tewfik, Pasha, obit., xvii, 604.
- Tewksbury Almshouse, Gov. Butler's charges, viii, 517.
- Te Whiti, vii, 45.
- Texarkana, xvi, 172.
- Texas, statistics, legislative proceedings, government, elections, etc., in every volume; view in, xi, 814; new constitution, i, 745, 747; land-office, 747; election of Senator Coke, 747; the Rio Grande crossed by an armed band, ii, 712; the criminals demanded of the Mexican government, and the reply, 713, 714; further troubles, 714; natural advantages of the State, 714; sketch of Gov. Roberts, iii, 787; cotton-crop, cattle-trade, 786; constitutional amendments, iv, 829; vi, 836; xii, 760; land-frauds, iv, 831; fugitive criminals, 831, 832; school-lands, v, 685; cost of frontier battalion, vi, 834; State capitol burned, 837. Gould system of roads, 835, 836; export trade at Galveston, 836; fire in, x, 749; new capitol, vii, 794; xi, 815; the governor's course as to convicts, etc., vii, 795; resources, soil, and climate, 795; John Ireland governor, viii, 758; fire in Galveston, x, 749; drought, xi, 815; Greer county, xii, 760; population, xv, 798; public lands, xv, 800; drouth in, xvii, 739.
- Texas Indian stock, vii, 399.
- Textile fiber, a new, xii, 140; new, xiii, 258.
- Textile manufactures, vi, 543.
- Text-books, recent. See Literature, in every volume.
- Thacher, George H., obit., xii, 616.
- Thackray, George E., experiments by, xi, 534.
- Thalberg, xi, 48.
- Thalline, x, 300.
- Thallophytes, ix, 93.
- Thamnoi, battle at, x, 31.
- Thanksgiving-day, Japanese, xi, 459.
- Thasos, ruins at, xii, 22.
- Thatcher, J. K., obit., xvi, 658.
- Thatcher, T. A., obit., xi, 704.
- Thaumegras, ruins of, xiv, 28.
- Thaxter, Benjamin, obit., xi, 704.
- Thaxter, Edward K., obit., vi, 689.
- Thayer, Nathaniel, obit., viii, 595.
- Thayer, Thomas B., obit., xi, 704.
- Thebaud, Dr. J. S., obit., i, 625.
- Thebaw, King, iv, 100; attempt to assassinate, v, 69; position of, vii, 416; x, 113, 114, 115; xii, 81.
- Thebes, royal mummies at, vii, 261.
- Thein, detection of, ii, 95.
- Theistie Church, ix, 759.
- Thekut, x, 36.
- Themistocles, wall of, x, 36.
- Theological Schools in the United States, viii, 760.
- Theology, recent books of. See Literature, in every volume.
- Theosophy, xviii, 716.
- Theresa, Empress, obit., xiv, 671.
- Thérèse, Sister, obit., xvi, 687.
- Thermo-Chemistry, discovery in, iii, 90.
- Thessaly, anarchy and brigandage in, v, 690.
- Thetis, the, ix, 29 *et seq.*
- Thibaudin, M., viii, 357, 366, 367.
- Thibaut, M., x, 155.
- Thibet, explorations in, i, 329; iii, 359; iv, 399; v, 289; ix, 348; x, 395, 396, 397; xi, 377; cause of difficult access, iv, 400; productions, 400, 401; proposed mission to, xi, 439.
- Thieblin, N. L., sketch, xiii, 655.
- Thiers, L. A., sketch, ii, 715; address of, to electors, 315.
- Thionville, defense of, x, 480.
- Thiophen, ix, 122.
- Thollon, observations by, viii, 20, 25.
- Tholuek, F. A. G., obit., ii, 612.
- Thomas, A. G., obit., xvii, 604.
- Tbomas, Benjamin F., obit., iii, 646.
- Thomas, Edward, obit., xi, 727.
- Thomas, Gen. George H., x, 428.
- Thomas, Francis, obit., i, 625.
- Thomas, P. F., obit., xv, 668.
- Thomas, Sidney G., invention by, v, 208; obit., x, 670.
- Thompson, C. G., sketch, xiii, 655.
- Thompson and Houston, invention by, iii, 279; vii, 266.
- Thompson, Elizabeth, ix, 44.
- Thompson, George, obit., iii, 662.
- Thompson, J., obit., xv, 668.
- Thompson, Jacob B., x, 159.
- Thompson, John, obit., xvi, 658.
- Thompson, Joseph P., obit., iv, 696.
- Thompson, L., discovery, iii, 84.
- Thompson, Launt, x, 362; xii, 280.
- Thompson, Robert L., observations by, xi, 536.
- Thompson, Richard W., sketch, ii, 716.
- Thompson, S. P., theory of electricity, vi, 240.
- Thompson, William Tappan, obit., vii, 348.
- Thoms, William J., obit., x, 670.
- Thomsen, Julius, experiments by, ii, 499.
- Thomson, Sir C. Wyville, expedition of, vii, 331; obit., 647.
- Thomson, Elihu, xii, 436.
- Thomson, Joseph, explorations by, iv, 402; v, 296; viii, 385; ix, 347, 545; x, 393, 395.
- Thomson, J. J., xii, 100.
- Thomson, R. T., xii, 108.
- Thomson, W., obit., xv, 690.
- Thomson, Sir William, inventions and researches of, ii, 498; iii, 351; iv, 419; vi, 239, 253, 255; vii, 223, 269; viii, 116; ix, 46.
- Thorington, James, obit., xii, 616.
- Thorium, x, 153.
- Thornburgh, J. M., obit., xv, 668.
- Thorne, Charles R., obit., viii, 596.
- Thorne, Charles Robert, obit., xviii, 573.
- Thorne, John S., obit., v, 596.
- Thornton, Sir Edward, x, 4, 11.
- Thornton, Harrison R., obit., xviii, 573.
- Thornton, John W., obit., iii, 646.
- Thorpe, Prof., xii, 110, 111.
- Thorpe, Thomas B., sketch, iii, 788.
- Thorwaldsen museum, illustration, i, 228.
- Thoulet, M. J., xii, 316.
- Thousand Islands, the, vi, 838.
- Thrasher, John S., obit., iv, 696.
- Thrift Congress, iii, 314.
- Throop, M. H., obit., xvii, 577.
- Thuku-t (Pithom), x, 36.
- Thuong, Regent of Anam, obit., xi, 728.
- Thursday Island, fortified, x, 61.
- Thurston, F. T., discoveries, vi, 542; ix, 46, 477, 478, 737.
- Thurston, J. B., x, 420.
- Thuen-Quan Fort, besieged, French losses at, x, 26.
- Thunder-storms, xiii, 534.
- Thuyet, x, 30, 31.
- Thury, M., ix, 519.
- Thwing, Edward P., obit., xviii, 573.
- Thymol as an anti-ferment, i, 95.
- Thyroidectomy, ix, 748.
- Thyroid gland, the, x, 695.
- Tiberias, city of, xii, 25.
- Ticino, revolution in, xv, 793; revolt in, xvi, 813.
- Tide-indicator, xviii, 235.
- Tidemand, Adolf, sketch, i, 747.
- Tidy, Meymott, on water analysis, iii, 91.
- Tientsin, treaties of, x, 28, 29.
- Tierra de la Guerra, v, 298.
- Tiff, or baryta, use of, in white lead, iv, 639, 640.
- Tiffany, J. C., nominated, xiii, 601.
- Tiffin, Ohio, xvi, 172.
- Tigre, war in, xviii, 1.
- Tilbury docks, x, 333.
- Tilden, Moses Y., obit., i, 625.
- Tilden, Prof., his address, xiii, 45.
- Tilden, Samuel J., sketch and portrait, i, 748; his nomination, 785; letters from, iii, 717; v, 697; obit. and portrait, xi, 815.
- Tilden, W. A., xi, 137; xii, 102.
- Tiles, ix, 248.
- Tileston, William M., obit., v, 596.
- Tilghman, Richard C., obit., iv, 697.
- Tillamook Light-house, vii, 283; illustration, v, 443.
- Tilton, John R., sketch, xiii, 655.
- Tilton, John Rollin, xi, 347.
- Timbuctoo, vi, 328.
- Time, standard and cosmopolitan, colored map, viii, 761; signals, ix, 48; system of universal, 54; reckoning, xi, 59.
- Timlow, G. W., sketch, xiv, 650.
- Timoffski, i, 323.
- Timor Island, revolt in, xii, 684.
- Tin, alloys of, iv, 4; deterioration of, vii, 533; viii, 116; in Dakota, 523; market, ix, 480; xiii, 526; xvi, 510; xviii, 488; discoveries of, xv, 801.



- Tindall, Admiral, obit., i, 643.  
 Tinedek, xi, 115.  
 Tin-plate Industry in the U. S., xviii, 717.  
 Tintinuabulum found in Peru, xiii, 24.  
 Tintometer, xvi, 710.  
 Tippoo Tip, x, 795; xii, 251.  
 Tirard cabinet, the, xii, 297.  
 Tirard ministry, fall of, xiii, 345; xiv, 334.  
 Tirard, Pierre E., sketch, iv, 386; viii, 357, 367; obit., xviii, 587.  
 Tirhakah, King, ix, 20.  
 Tiryns, excavations at, ix, 23; x, 37; xi, 33.  
 Tisdell, N. P., report of, on the Congo region, x, 192, 193.  
 Tisserand, observations, iii, 36.  
 Tissot, Charles J., obit., ix, 623.  
 Tissues, process for examining, ix, 124.  
 Tisza, Koloman, ix, 70; xii, 51.  
 Tithe agitation, xiii, 392; xiv, 391.  
 Tithes, in Quebec, viii, 674.  
 Titian, sale of a picture by, x, 36.  
 Titiens, Theresa, obit., ii, 612.  
 Toadstools and Mushroomrooms, xi, 590.  
 Tobacco, commerce in, iv, 170; cultivation of seed, v, 197; inspection, vii, 463; monopoly in Germany, 356; injured by manures, x, 274; statistics, xvii, 764.  
 Tobias, Laging, x, 625.  
 Tobler, Titus, obit., ii, 612.  
 Tobogganing, ix, 759.  
 Tocqueville, Count de, obit., i, 644.  
 Todd, Lemuel, obit., xvi, 658.  
 Todleben, E. F. L., sketch, ii, 716; obit. and portrait, ix, 761.  
 Toggle-press, illustration, xi, 735.  
 Tognio negroes, ix, 365.  
 Tokar, battle of, ix, 292, 293; occupation of, xvi, 273.  
 Tokio, University of, vi, 453.  
 Toll, Baron E. von, xii, 316.  
 Toledo, Ohio, growth of, xi, 187.  
 Tollemache, Baron, obit., xv, 691.  
 Tolles, ix, 508, 509, 512, 514.  
 Toloachi plant, the, viii, 538.  
 Tolstoi, Alexis, i, 475.  
 Tolstoi, Demetrius, v, 346.  
 Tolstoi, Count Dimitri Andreivich, sketch, xiv, 671.  
 Tolstoi, Count Lyof, i, 475; x, 546; xi, 442.  
 Tolstoi, Count, vii, 736; ix, 709.  
 Tombs, in Spain, xii, 23; of Sidon, see Sidon.  
 Tomuasi, experiments, iv, 444.  
 Tommasi, S., sketch, xiii, 669.  
 Tom Thumb, obit., viii, 596.  
 Tonic Sol-fa, ix, 545; illustrations, 549, 550.  
 Tong King Sing, obit., xvii, 604.  
 Tonga Islands, the, ix, 366; church trouble in, x, 588; monument in, xiv, 29.  
 Tonite, x, 343.  
 Tonquin, war in, viii, 370; article, map, viii, 763; ix, 137-143, 338, 340; x, 24 *et seq.*; cost of the campaign to France, 27, 28; massacre of Christians in, 31; x, 170 *et seq.*; the war unpopular with French radicals, 375; "the sinister man of," 380.  
 Toomath, John, obit., i, 625.  
 Toombs, Robert, obit., x, 749.  
 Tooth, Rev. Arthur, case of, ii, 19 *et seq.*  
 Tooting case, the, xiii, 187.  
 Topanovich, Col., x, 729.  
 Topeka, Kansas, growth of, xi, 187; Capitol at, illustration, ii, 416.  
 Topnaars, the, x, 138.  
 Torlonia, Alessandro, obit., xi, 728.  
 Tornado, in Iowa, vii, 433.  
 Tornadoes, prediction of, x, 581.  
 Toronto, Canada, growth of, xii, 130; views in, ii, 255; xii, 131.  
 Torpedo boats, xii, 798; xvi, 558.  
 Torpedoes, ii, 717; xiii, 796; xiv, 812; xvi, 552; xviii, 720; nets, xvi, 558.  
 Torreus, Sir Robert, his system of land-transfer, x, 674.  
 Torsey, H. P., obit., xvii, 577.  
 Tortuga, island of, xii, 357.  
 Total depravity, x, 708.  
 Totten, C. L., invention, ii, 626.  
 Totten, George M., obit., ix, 613.  
 Tourgee, Eben, obit., xvi, 658.  
 Tousey, Sinclair, obit., xii, 616.  
 Tower, xii, 172.  
 Tower of London, the, illustration, ii, 364; explosion at, ix, 378; x, 454.  
 Towle, George M., obit., xviii, 573.  
 Townsend, Charles, v, 608.  
 Townsend, Edward D., obit., xviii, 573.  
 Townshend, R. W., obit., xiv, 650.  
 Tracy, Benjamin F., sketch and port., xiv, 803.  
 Tracy, John M., obit., xviii, 573.  
 Tracy, Phineas L., obit., i, 625.  
 Trade commission, South American, x, 165.  
 Trade-dollars, x, 246, 282; redemption of, xii, 201.  
 Trade-marks, decision on, iii, 831; x, 682; patents, copyright laws relating to, xii, 204.  
 Trade Union Congress, xi, 359.  
 Trafalgar Square, London, illustration, ii, 361.  
 Tramps, iv, 307, 516, 663, 675, 686, 715, 848; vi, 6.  
 Trans-Caspian lands explored, xii, 307; railroad, x, 16; xiii, 309; xiv, 5.  
 Transfusion, ix, 748.  
 Transits of planets. See article Astronomical Progress, in each volume.  
 Trans-Mississippi Congress, xviii, 748.  
 Transportation, bill for commission, v, 183; on the Mississippi, 433; statistics, xvi, 847; xvii, 768.  
 Transvaal Republic, war in, i, 748; annexation to the British Empire, ii, 7, 721; dissatisfaction in, iv, 128; revolt in, v, 81, 83; independence, vi, 4; outbreak, 86; settlement, 88, 359; feeling in Holland, 626; troubles in, viii, 92; ix, 115.  
 Trapani, Comte de, obit., xvii, 604.  
 Trappers, Indian, of British Columbia, xviii, 110.  
 Trask, E., obit., xv, 669.  
 Traube, Ludwig, obit., i, 644.  
 Traube, M., theory of, viii, 120; researches by, xii, 108.  
 Traumaticene, ix, 273.  
 Travancore, Rajah of, v, 386.  
 Travel, recent books of. See Literature, in every volume.  
 Travers, William Priggin, obit., xii, 616.  
 Traversi, Dr., travels of, xii, 304.  
 Treadwell, John P., obit., i, 625.  
 Treason-trials at Leipsic, xi, 326.  
 Treasury surplus, xi, 263.  
 Treat, C. H., nominated, xiii, 264.  
 Treat, Selah B., obit., ii, 589.  
 Treat, Samuel H., obit., xii, 617.  
 Treaties: extradition, xi, 456, 822; xii, 346; literary, xii, 140; secret, between Austria and Russia, xii, 51; reciprocity between Great Britain and Spain, xi, 276; between Germany, Austria-Hungary, and Italy, xii, 328, 399; power of United States, xii, 760; boundary, between France and Portugal, xi, 371; of peace, between Bulgaria and Serbia, xi, 102; of China with other nations, xi, 156; xii, 117, 684; notice of termination of, by Brazil, xi, 93; of Berlin, see Berlin, treaty of; new, xiii, 259, 287, 547, 674, 680, 759; commercial, with Austria-Hungary, xviii, 63. Other treaties of importance will be found referred to under the names of the countries making them.  
 Treaty, right of government to make a, viii, 396.  
 Trebelli, Zella, obit., xvii, 604.  
 Tree-planting, xii, 765.  
 Treclawney, Edward J., sketch, vi, 838.  
 Tremain, Lyman, obit., iii, 646.  
 Trench, Richard Chenevix, obit. and portrait, xi, 820.  
 Trenchard, Stephen D., obit., viii, 596.  
 Trenholm, George A., obit., i, 625.  
 Trenton, growth of, xii, 132; illustration, ii, 552; battle monument at, xviii, 516.  
 Trépied, observations, vii, 37.  
 Tresca, experiments by, vi, 255.  
 Tresch, J. F. J., obit., xv, 669.  
 Trescott, T. C., xii, 107.  
 Trespass suits, in Illinois, v, 381.  
 Trevelyan, Charles, obit., xi, 728.  
 Trevelyan, Charles E., ix, 690; xi, 399.  
 Tréveneuc, Comte Henri de, obit., xviii, 587.  
 Trevisanato, Cardinal, obit., ii, 618.  
 Trials, criminal, vii, 182; for bribery in New York, xii, 555; for treason in Germany, xii, 326.  
 Trichinosis. See Pork, viii, 643.  
 Tricoups, return of, xviii, 369.  
 Trieycles, ix, 85; illustration, 85.  
 Tridæma squamosa, the, x, 35.  
 Trieste, five hundredth anniversary of union with Austria, vii, 54; harbor-works of, viii, 306.  
 Trikoupis, xi, 411.  
 Trimble, Isaac R., sketch, xiii, 655.  
 Trimble, Joseph McD., obit., xvi, 659.  
 Trinidad, ix, 802; fire in, 802; asphaltum in, 803; xii, 801; xiii, 839; xiv, 403; xvi, 864; xvii, 793.  
 Trinity Church, Boston, Mass., xviii, 112.  
 Triple Alliance, the, viii, 452; xii, 328, 399; xiii, 69.

- Tripp, Alonzo, obit., xvi, 659.  
 Tristan d'Acunha, island of, xii, 316.  
 Trn, fighting at, x, 728.  
 Troad, researches in the, ix, 25.  
 Troglodytes, caves of, xiii, 33.  
 Trolle, Henrik Af, obit., xi, 728.  
 Trollope, Anthony, sketch, vii, 798.  
 Trollope, T. A., obit., xvii, 604.  
 Troeltsch, A., obit., xv, 691.  
 Tromholt, S., experiments by, viii, 30, 383.  
 Trouncl, experiments by, iii, 91.  
 Trotter, T. E., obit., xvii, 578.  
 Trout, new species of, xiv, 792.  
 Troutowsky, Constantin, obit., xviii, 587.  
 Trouvelot, observations by, i, 46; iii, 37; ix, 51.  
 Trow, John F., obit., xi, 704.  
 Trowbridge, W. P., obit. and port., xvii, 578.  
 Troy, site of ancient, ix, 24.  
 Troy, N. Y., recent growth of, xi, 188.  
 Troyon, Constant, xi, 346.  
 Trujillo, Gen. Julian, iii, 103.  
 Trumbull, Henry C., explorations by, ix, 27.  
 Trumbull, John, x, 677.  
 Trumpeter, the, x, 613.  
 Truss bridge, at Rock Island, illustration, i, 414.  
 Trust, xiv, 793.  
 Trust companies, x, 293.  
 Truxtun, William Talbot, obit., xii, 617.  
 Tryon, D. W., xi, 346; xii, 278.  
 Tryon, G. W., sketch, xiii, 655.  
 Trypsin, x, 301.  
 Tsaribrod, fight at, x, 731.  
 Tschabuschnigg, Adolf Ritter von, obit., ii, 613.  
 Tschaikowsky, Peter Iltitsh, obit., xviii, 587.  
 Tseng, Marquis, x, 27, 28; obit., xv, 691.  
 Tso-Tsung-t'ang, v, 105; obit., x, 670.  
 Tsuchiakabe, Japanese drug called, xi, 292.  
 Tubercle bacillus, viii, 770.  
 Tuberculosis, bacterial origin of, vii, 798; ix, 663.  
 Tuberculous diseases, Koch's remedy for, xv, 802.  
 Tucker, Henry H., sketch, xiv, 650.  
 Tucker, N. B., obit., xv, 669.  
 Tuckerman, Edward, obit., xi, 705.  
 Tuckerman, S. P., obit., xv, 669.  
 Tucson, Arizona, xii, 132.  
 Tu Duc, Emperor of Anam, obit., viii, 605; x, 30, 32.  
 Tufts, Charles, obit., i, 625.  
 Tufts, Gardiner, obit., xvi, 659.  
 Tuigg, John, sketch, xiv, 650.  
 Tuileries and Louvre, the, illustration, ii, 310.  
 Tulane, Paul, obit., xii, 617; his donations, vii, 484.  
 Tulipine, x, 302.  
 Tulloch, John, obit., xi, 705.  
 Tulloch, Principal, quoted, xiii, 7.  
 Tun, Prince, sketch, xiv, 672.  
 Tundra, or Thaddeus Island, vii, 333.  
 Tungurahua, eruption of, xi, 306.  
 Tungus, the, vii, 333.  
 Tunis, i, 9; French intervention in, vi, 309, 311, 449, 840; Italian excitement over, vi, 448; vii, 437; treaty, 322; viii, 358; ix, 338, 340; x, 381; xii, 298; xiii, 353; xiv, 343; xvi, 314; xviii, 329.  
 Tunkers, xiii, 77; xiv, 69. See the articles on Baptists, in each volume except xv, xvi, xvii.  
 Tunnel drainage, xiv, 558.  
 Tunnels, i, 255; ventilation of, vi, 248; spiral, *ibid.*; restoration of an old Roman, 249; the Hudson River, ii, 278; iii, 291; disaster at, v, 580; vii, 281; Baltimore, ii, 278; east of Hoosac, vi, 537; Severn, ii, 278; vi, 249; vii, 282; British Chunnel, iv, 340; vi, 243, 248; panic concerning, vii, 284; viii, 306; Mersey, viii, 31; x, 331; illustrations, xi, 316, 317; in Saxony, ii, 278; St. Gothard, iii, 280; iv, 340; v, 246; vi, 248, 819; vii, 11, 280; Mont Cenis, v, 247; Arlberg, vi, 243, 244, 247; vii, 281; viii, 310; x, 331; proposed Simplon, vii, 11; through the Pyrenees, vi, 243; through Popocatepetl, viii, 537; illustration of the, at Hallett's Point, i, 380; xi, 316; Severn Railway, 317; Big Bend, 318; at Stockholm, illustration, 319; submarine, 319; of Galeria, 752; xviii, 279.  
 Tupman, G. L., observations by, iii, 36; iv, 53.  
 Tupper, Henry M., obit., xviii, 573.  
 Tupper, Martin F., obit., xiv, 672.  
 Turco-Greek commission, the, iv, 459.  
 Turf, ten years' record of the, xii, 767.  
 Turgenieff, Ivan, sketch and portrait, viii, 771.  
 Turkey, the, x, 390.  
 Turkey, statistics, government, etc., in every volume; maps, i, 750, 755; ii, 722, 723, 731, 732, 737; iii, 789; views in, i, 756, 757, 759, 762, 765, 768; ii, 725, 729, 733, 736; religions and nationalities of, i, 753; the Danube commission, 753; Servia, Montenegro, 753, 754, 761, 762; the Andrassy note, 754; threats of war, 756; relief of Niesic—victory by Raouf Pasha, 756; Mukhtar Pasha takes command, 756; reforms promised, 756; the Bosnian commission, 756; Herzegovinian insurgents reject the provisions of the Andrassy note, 757; demands of insurgents, 758; military encounters, 758; expedition of Liubibrates, 758; attacks of Mukhtar Pasha, 758, 759; massacre at Salonica, 759, 760; conference at Berlin, 760; dethronement of Abdul-Aziz, 760; Murad V becomes Sultan, 760; death of Abdul and murder of ministers, 760, 761; Ristich-Gruitche ministry, 761; declaration of war, 762; military resources of the belligerents, 762, 763; Servians storm Bičina—are beaten back on the Timok, 763, 764; army of the Ibar under Gen. Zach, 764; Montenegrins take Stolatz, 764; Servians beaten at Mramor, 765; Turks take Saitchar, 765; battles of Alexinatz and Plana, 765, 766; defeat of Turks, 767; Roumanian demands, 767; the convention of Ghent agreed to, 767, 768; Murad V insane and removed, 768; Abdul Hamid, Sultan, 768; armistice, 769; plot against the Sultan, 770; capture of Alexinatz, Russian interference, truce, 771; Midhat Pasha, Vizier, 773; new constitution, 773, 774; the three sultans, 774; Russia declares war, ii, 723; the Sultan deposed, 724; Bosnian insurrection, 725; the Danube closed by Russia, iii, 728; action on the river, 729, 730; scene of the war in Armenia, 730, 732; movements against Kars and Batoum, 732, 733; operations on the Black Sea and the Danube, 733, 735; in Armenia, 736; revolt in the Caucasus, 736; the Shipka Pass, 736, 738, 741; Russian defeats—vessels sunk at the mouth of the Danube, 738, 739; Mehemet Ali removed from command, 741; movements of the British fleet, 743; Plevna, 740; its surrender, 744; Russian operations, iii, 788; treaty of San Stefano, 791; Greek invasion, 793; advance upon Constantinople, 793; English fleet ordered there, 793; Batoum occupied by the Russians, 796; revolt in Bagdad, 797; office of Grand Vizier abolished, iv, 833; Russian treaty of peace, 834; Albanian demands, v, 687; ministerial changes, 688; scheme of government for Asia Minor, 689; famines, 689, 690; murders, 690; captivity of Col. Syngce, 690; complication of the Eastern question, vi, 839; the former Grand Vizier arrested on a charge of murdering Abdul-Aziz, vi, 841; Russian interference, 842; Albanian league, 842; financial schemes of the Sultan, vii, 802, 803; Said Pasha's proposed reforms, 803; discontent and sedition, 804; the Armenian question, viii, 773; action in reference to Bulgaria, x, 110; Cretan troubles, 774; x, 752; xii, 773; religious difficulties, ix, 764; war preparations, x, 751; disturbances in Albania, 752; agreement with England on the Egyptian question, 755; treaty with the United States, xi, 822; palace intrigues, xii, 773; the oecumenical patriarchate, 773; the Montenegrin boundary, ix, 764; xii, 774; famine in Asia Minor, xii, 774; Turkish bath, illustration, ii, 725.  
 Turkistan, i, 775; ix, 712; annexed by Russia, x, 2; statistics of, 721; revolution in, xiv, 5.  
 Turkomania, x, 4; plains of, xii, 308.  
 Turkomans, robberies by, i, 7; Persian expedition against, 44; irruption of, 661; war with Russians, iv, 775; successes of, 776; turning of the Attrek, 776; char-



- acter of, vi, 733; vii, 681; ix, 4; x, 2.
- Turko-Russian War, the, i, 260, 756; ii, 269, 638, 683, 691; Russia's declaration of war, 688, 724; conference, 723; operations, 725-745; armistice, 745; treaty of peace, iii, 791; iv, 834; effect on markets, ii, 119. See Eastern Question.
- Turnbull, Robert, sketch, ii, 745.
- Turner, C. Y., prize awarded to, x, 361.
- Turner, John, obit., ii, 589.
- Turner, J., observations by, xi, 534.
- Turner, J. E., obit., xiv, 650.
- Turner, Joseph M. W., xi, 344; sale of a picture by, x, 366.
- Turner, W. G., statue by, x, 367.
- Turney, Jacob, obit., xvi, 659.
- Turpentine manufacture, iv, 428.
- Turpin, Eugene, x, 153; x, 346.
- Tuson, R. V., sketch, xiii, 669.
- Tuthill, Joseph H., obit., ii, 589.
- Tuttle, J. M., obit., xvii, 579.
- Tuttle's Comet, x, 51.
- Tuxedo Park, T. C. Van Buren's house at, illustration, xii, 370.
- Tweed, William M., sketch, iii, 798; his trial, ix, 627.
- Tweedy, John, obit., xvi, 659.
- Twستن, August D. C., sketch, i, 776.
- Twigg, James W., obit., iii, 646.
- Twin screw, xiii, 308.
- Twiss, Sir Travers, x, 191.
- Two Harbors, xiii, 173.
- Tycho, in the moon, illustrations, xi, 586, 587.
- Tycoon, the last, ix, 419.
- Tyers, J. R., invention by, ix, 736.
- Tyler, Dr. John E., obit., iii, 647.
- Tyler, Gen. John S., obit., i, 625.
- Tyler, Julia G., sketch, xiv, 650.
- Tyler, Morris, obit., i, 625.
- Tyler, Samuel, sketch, iii, 799.
- Tyler, Tex., xvi, 173.
- Tyndall, John, on the germ theory, iii, 387; experiments by, vi, 787; ix, 304; sketch and port., xviii, 727; house, 728; study, 730.
- Tyng, Stephen H., obit., x, 654.
- Type-writers, xv, 807.
- Tyre, researches at, ix, 28.
- Tyrol, the, autonomy refused to, ii, 58; first Protestant church in, iv, 67; intolerance in, v, 45.
- Tyson, explorations, iii, 353.
- Uchatius, Baron von, his gun, i, 57; experiments by, ii, 500; obit., vi, 696.
- Uffellmann, observations, vi, 749.
- Uffington, Roman pavement in, illustration, ix, 22.
- Uganda, xvi, 264; xvii, 241; xviii, 271.
- Uhde, Frederick, x, 362; xii, 276.
- Uhlrich, Joseph Alexis, obit., xi, 728.
- Uhrich, Jean Jacques Alexis, obit., xii, 638.
- Uthoff, Dr., experiments by, x, 691.
- Ujfalvy, M. de, ethnologic researches of, ii, 327.
- Ulbach, Louis, sketch, xiv, 672.
- Ule, Otto E. V., sketch, i, 777.
- Ulea Island, x, 139.
- Uled-Bonasog, rebellion of, i, 21.
- Uled-Sidi-Sheik, tribe of, i, 20.
- Ullman, Daniel, obit., xvii, 579.
- Ulrich, Charles F., x, 361; xi, 346.
- Ulrich, Hermann, obit., ix, 623.
- Ulundi, battle of, ix, 126.
- Ulysses, palace of, ix, 23.
- Umbellulic acid, vii, 87.
- Umnyamana, ix, 114, 115.
- Umquikala, Chief, x, 136.
- Uncle Tom, obit., viii, 596.
- Underwood, A. B., obit., xiii, 655.
- Underwood, Judge, x, 431.
- Underwood, Joseph R., obit., i, 625.
- Underwood, J. W. H., obit., xiii, 656.
- Union of Churches, in Scotland, xviii, 196.
- Unitarians, statistics, etc., in vols. i, ii, iii, v, vii, ix, xii, xiii, xiv, xvi, and xviii; schools and societies, i, 777; national conference, i, 777; iii, 799; v, 691; ix, 765; German Protestant Union, i, 777; Hungarian synod, 778; ix, 765; xii, 775; British Association, ii, 746; bureau of supply, iii, 799; American and foreign associations, 800; non-subscribing Presbyterians, 800; finances, v, 691; benevolent societies, ix, 765; in Great Britain, 765; xii, 775; year-book, xii, 774, 775.
- United Brethren Church, statistics, etc., in vols. i, ii, iii, v, vii, x, and xi; increase in numbers, i, 778; general conference, ii, 746; x, 755; missions, iii, 801; convention of clergymen and laymen, 801; collections, v, 691; xi, 822; bishops, v, 691; seminaries, 692; constitutional changes, xi, 823; xviii, 731.
- United Brethren in Christ, xiii, 770; xiv, 800.
- United States, article in every volume giving statistics, government, foreign relations, election returns, etc.; proceedings of Congress under the title Congress in every volume; army operations under the title Army of the United States in first seven volumes; census and map, see below, United States Census; center of population, see Population, Center of; finances, see Finances of the United States, and Financial Review; views in, i, 277, 503, 784, 786; Cabinet changes, i, 778; Centennial exhibition, see Exhibition, Centennial; presidential nominations and letters of acceptance, i, 781, 783, 785, 787, 790; settlement of the election question, 793; President Hayes's Cabinet, ii, 748; Federal troops withdrawn from South Carolina and Louisiana, 748; civil-service reform, 748; the silver bill, 750; fishery commission, 752; granger cases, 753; Bread-Winners' League, 751; Baltimore Convention, 752; question of fraud in the election, iii, 802; investigating committee, 802; origin of the present relations with China, iii, 810; sketch of the new Secretary of War, iv, 834; minister to Berlin, 834; the war-levy decided not to hold against the States, 835; Mormon emigration, 837; decline of the carrying trade, 837, 838; comparison of census returns, v, 692; changes in the Cabinet and diplomatic service, 692, 693; presidential nominations, etc., v, 693-696; Chinese treaty on immigration, 704; President Garfield's Cabinet, vi, 846; trouble with Senator Conkling on appointments, vi, 846; the murder of President Garfield, 846, 847; changes in the Cabinet under President Arthur, 848; star-route frauds, 848; trials, viii, 777; Sergeant Mason's offense, vi, 848; Cabinet changes, vii, 806, 807; trial and execution of the assassin of the President, 809; Capt. Howgate's arrest and escape, 810; efforts to secure peace between Peru and Chili, 810, 811; isthmus canal project, 813, 814; census, vii, 814-822; Indians captured by Gen. Crook, viii, 777, 778; pensions, 780; the treasury, reduction of taxation, 789; new bureaus and commissions, ix, 766; treaties, 767; the presidential election, 767-774; xiii, 799; trial of Gen. Swaim, 776; the life-saving service, 777; prime meridian conference, 777; Washington monument, 777; sketches of members of President Cleveland's Cabinet, x, 756, 757; their portraits, 756-764; diplomatic and civil appointments, 757-759; the navy, 760; trouble with Indians, 764; coast defenses, 764; anti-polygamy act, 764; the fisheries, x, 764; Alaska, x, 765; xi, 826; xii, 779; Mexico and the Cutting case, xi, 825; claims of Greer County, Texas, 760; Cabinet changes, xii, 775; centennial of the constitution, 780.
- United States, census of, vii, 815; xv, 821; maps showing distribution of population, of foreign, and of colored, vi, 850.
- United States, exhibitions in, xi, 346.
- United States Finances, a separate article in every volume after the seventh.
- United States, fish-culture in, viii, 791.
- United States navy, xiii, 787; xiv, 809; xvi, 543; xvii, 481.
- United Workmen, Ancient Order of, xii, 784.
- Universal suffrage in Belgium, xviii, 76.
- Universalists, statistics, general conventions, etc., in vols. i, ii, iii, v, vii, viii, ix, x, xi, xii, xiii, xiv, xvi; societies and institutions, i, 793; amendment to the constitution, iii, 813; women's centenary association, iii, 813; viii, 811; ix, 787; x, 771; xi, 832; xii, 786; missions, vii, 822; the Winchester profession of faith, vii, 822; historical society, viii, 811; ix, 787; x, 771; xii, 786; the Brevoort mission, xii, 786.

- University federation, proposed, in Ontario, x, 675.  
 University of Copenhagen, 400th anniversary of, iv, 313.  
 Unnever, John Gerhard, obit., xviii, 573.  
 Unruh, Herr von, obit., xi, 728.  
 Upchurch, John J., obit., xii, 618.  
 Upham, James, obit., xviii, 573.  
 Upholstery, ix, 787.  
 Upjohn, Richard, obit., iii, 647.  
 Upingtonia, xi, 134.  
 Uppington, Mr., x, 86, 87, 88.  
 Upright, Elizabeth, case of, iv, 573.  
 Upton, Anson J., sketch and port., xvii, 769.  
 Upton, Winslow, xii, 493.  
 Uranus, ellipticity of, viii, 24; xiv, 46.  
 Urdaneta, x, 776.  
 Urea, formation of, viii, 637.  
 Urethane, x, 301.  
 Urgel, Count of, ix, 345.  
 Urnston, Capt., killed, xiii, 436.  
 Urner, Nathan D., obit., xviii, 573.  
 Uruguay, i, 794; vi, 857; troubles in, v, 16; viii, 811; ix, 789; x, 771; xii, 786; xiii, 829; xiv, 815; xv, 841; xvi, 851; xvii, 770; xviii, 743.  
 Usher, James M., obit., xvi, 659.  
 Usher, John P., obit. and port., xiv, 651.  
 Usibepu, defeat of Cetewayo by, viii, 91; ix, 114, 115; x, 136.  
 Uslar, Baron, i, 323.  
 Usury, West Virginia, bill, iv, 845; Georgia law, vi, 334; effect of Kiernan law, vii, 117.  
 Usutus, the, ix, 114.  
 Utah, statistics, officers, etc., in every volume except i, iv, v, vii; view in, ii, 756; recommendations of the Governor, ii, 755; finances, school-law, 755; polygamy, 755; iii, 813, 814; vi, 859, 860; viii, 812; ix, 791, 792; x, 773; xi, 833; xii, 789; death of Brigham Young, 756; accounts of, iii, 814; silk-culture, iii, 756; population, vi, 859; missionaries of Mormonism, 859; the hierarchy, the dominant power, 859; preachers and converts, 859, 860; reorganized church opposed to polygamy, 860; the Edmunds law, viii, 812; its operation, ix, 791; x, 773; xi, 833; Edmunds-Tucker act, xii, 789; education, x, 773; salt, x, 773; xi, 833; constitutional convention, xii, 788; prosecutions for bigamy, 789; population, xv, 841; classification of population, xvii, 771; mineral products of, 772; Statehood, 773.  
 Utes, attack upon the, xii, 143; the, xiii, 180; xviii, 177.  
 Utica, N. Y., growth of, xi, 183.  
 Uvura, ix, 347.  
 Uzbecks, x, 2, 8.  
 Uzes, J. M. G. de Crussol, Due d', obit., xviii, 588.  
 Vaccination with disease, vi, 347.  
 Vagrants, sale of, in Missouri, xviii, 499.  
 Vail, Aaron S., obit., vi, 689.  
 Vail, Thomas H., sketch, xiv, 651.  
 Vakkan, province of, x, 2; its submission to Russia, xi, 5.  
 Valdaun, G., xi, 373.  
 Valence, theory of, x, 149.  
 Valerij, palace of the, ix, 26.  
 Vallejo, M. G., obit., xv, 669.  
 Vallès, Jules, obit., x, 670.  
 Valoueff, Count, obit., xv, 691.  
 Valparaiso, illustration, ii, 99.  
 Valuation and taxation in the States, vii, 409.  
 Vambery, Arminius, ii, 5; iii, 3.  
 Vanadium compounds, new, x, 154.  
 Van Anden, W., obit., xvii, 579.  
 Vanata, Aloysius, obit., i, 625.  
 Vanatta, Jacob, obit., iv, 697.  
 Van Bokkelen, Mr., x, 468.  
 Van Brunt, Henry, x, 361.  
 Van Buren, D. T., obit., xv, 669.  
 Van Buren, W. H., obit., viii, 596.  
 Van Camelbeke, Bishop, x, 31.  
 Vance, Albinus, v, 552.  
 Van Cleve, Horatio P., obit., xvi, 659.  
 Vancouver, xiii, 174.  
 Van Depoele, C. J., obit., xvii, 579.  
 Vanderbilt, Cornelius, sketch, ii, 756.  
 Vanderbilt, John, obit., ii, 589.  
 Vanderbilt University, gift to, x, 775.  
 Vanderbilt, William H., obit. and portrait, x, 774; gift of, to New York city, ix, 595; obit., xvii, 580.  
 Van der Heyden, Gen., honors to, vi, 625; ix, 558; x, 625.  
 Van der Hoeven, Pruis, x, 625.  
 Vanderpoel, Aaron J., obit., xii, 618.  
 Vanderpool, James, obit., i, 625.  
 Van der Weyde, invention by, ii, 498.  
 Van Diebble, Cornelius, invention by, x, 614.  
 Van Dyke, Anton, sale of pictures by, x, 360, 366; xii, 277.  
 Van Dyke, Henry J., xvi, 659.  
 Van Dyke, John, obit., iii, 647.  
 Van Gèle, Capt., explorations by, xii, 303.  
 Van Heurek, Dr., experiments by, ix, 515.  
 Vanilla, xiii, 548.  
 Van Lennep, H. J., obit., xiv, 651.  
 Van Malderen, invention by, iii, 275.  
 Van Mareke, x, 367.  
 Van Nest, A. R., obit., xvii, 580.  
 Van Niekirk, P. J., ix, 112, 113; x, 86, 87.  
 Van Nostrand, David, obit., xi, 705.  
 Van Oeckelen, invention by, x, 613.  
 Van Raust, Lydia, obit., xi, 705.  
 Van Rysselberghe, François, obit., xviii, 588.  
 Van Swieten, Gen., ix, 557; x, 625.  
 Van Vorst, H. C., sketch, xiv, 651.  
 Van Wickle, S., sketch, xiii, 656.  
 Van Zandt, Charles C., ii, 675; iii, 728; iv, 770.  
 Vaphio, tomb at, xvi, 19.  
 Vara, Giovanni B., obit., ix, 623.  
 Variek, Theodore Romeyn, obit., xii, 618.  
 Varna and Dijmphna, loss of the, viii, 383.  
 Varroy, Henri A., sketch, iv, 386.  
 Vassali Bey Luigi, obit., xii, 634.  
 Vassalot, Count de, x, 135.  
 Vassar, John G., sketch, xiii, 656.  
 Vatican, the, mission from, to China, x, 170; conspiracy of the, xi, 454; illustration, i, 704; relations of, with governments. See Papacy.  
 Vatican library open to historians, viii, 692.  
 Vaucanson, invention by, x, 613.  
 Vaughan, Victor C., xii, 106.  
 Vaughn, O. A. J., obit., i, 625.  
 Vaux, W. S. W., obit., x, 671.  
 Vedder, Alexander M., obit., iii, 647.  
 Vedder, Elihu, ix, 249.  
 Vedder, N., obit., xvii, 580.  
 Vierzou, strike at, xi, 359.  
 Vega, Count de la, x, 141.  
 Vega, the, voyage of, iv, 411; entrance into Behring Strait, 415; in Yokohama, 416; x, 398.  
 Vegetable analysis, vi, 95.  
 Vegetable chemistry, vii, 92.  
 Vegetable physiology, ix, 660; x, 695; xviii, 635.  
 Veintemilla, Gen., made dictator in Ecuador, iii, 260; government of, iv, 328; v, 231; defeat and flight of, vii, 225; viii, 287.  
 Veitch, obit., x, 671.  
 Vela Vincenzo, obit., xvi, 687.  
 Venezuela, i, 795; vi, 860; viii, 812; ix, 793; x, 775; xiii, 832; xiv, 813; xv, 843; xvi, 855; xvii, 774; xviii, 748; civil war in, xvii, 777; silk, ix, 794; rebellion, x, 776; xii, 789; tariff changes, 790; national museum, 790.  
 Venice, aqueduct at, x, 332.  
 Venosta, v, 408.  
 Ventilation, v, 361.  
 Venus, diameter of, ii, 43; transit of, ibid., vii, 35; viii, 20; ix, 49.  
 Venus, rotation of, xvii, 39.  
 Venusti, sale of a, x, 366.  
 Vera Cruz, illustration, ii, 514.  
 Veraschagin, picture by, x, 712.  
 Verbeek, Mr., x, 401.  
 Verboeckhoven, E., obit., vi, 697.  
 Verdi, ovation to, xii, 522.  
 Vereschagin, Basil, xii, 277.  
 Verme, Count L. dal, xi, 380.  
 Vermilye, Thomas E., obit., xviii, 573.  
 Vermilye, Washington R., obit., i, 625.  
 Vermont, statistics, State government, election returns, etc., in each volume; celebration of the centennial of the battle of Bennington, ii, 757, 758; investigation of the reprieve of a sentence for murder, ii, 758; iii, 818; Redfield Proctor elected Governor, iii, 816; revision of statutes, 817; v, 708, 709; bequests, iii, 818; vii, 827; relative profits of farming in, compared with those in the West, iv, 840, 841; sorghum sugar, 841; railroad monopolies, 841; a famous law-case, iv, 842; election case, 842; election of Governor Roswell Farnham, v, 707; re-election of Senator Edmunds, v, 707; xi, 839; act to equalize taxation, vi, 863; duties of State school superintendent, 864; revenue bill, vii, 823; schools, 826, 827; xii, 791; election of Governor John L. Barstow, vii, 827; of Governor Sam-



- uel E. Pingree, ix, 795; forestry, ix, 796; maple-sugar, x, 777, and xvi, 857; population, xv, 844; immigration, 846; Australian ballot law, xvi, 857, and xvii, 785; temperance, 858.  
 Véron, Eugène, sketch, xiv, 672.  
 Véron, Madame, xii, 294.  
 Verona, bridge at, x, 330.  
 Vessels, iron-turreted, xii, 229.  
 Vestal virgins, house and statues of the, ix, 26.  
 Veterinary surgeon's table, xvi, 706.  
 Vetroville, Eugène, obit., vi, 689.  
 Vetulovia, site of, xi, 35.  
 Veuillot, Louis, sketch, viii, 815.  
 Veyressat, J. J., x, 363.  
 Viaduct du Loup, xvii, 249.  
 Viardot, Louis, obit., viii, 605.  
 Vibbard, Chauuecy, obit., xvi, 659.  
 Vibert, G. J., xi, 347.  
 Vibriones, ix, 498.  
 Vickovich, x, 1, 2.  
 Vicksburg, Miss., xvii, 120.  
 Vicksburg, siege of, x, 424, 426.  
 Victor Emanuel II, King of Italy, iii, 819.  
 Victoria, Apache chief, v, 27.  
 Victoria, city, xiii, 174.  
 Victoria, Queen, power of, to cede Indian territory, iii, 438; attempt on the life of, vii, 369; portrait, iii, 819; jubilee of the fiftieth year of her reign, xii, 791.  
 Victoria, loss of the, xviii, 359.  
 Victoria Nyanza, mission at, iii, 362.  
 Victoria, province of. See under Australia, in each volume; colony of, xiv, 54; xv, 47; xvi, 62; xvii, 43.  
 Victoria Station, explosion at, ix, 377; x, 454.  
 Vieille, x, 151, 154.  
 Viel-Castel, M. de, obit., xii, 638.  
 Vienna, fire in, iv, 51; views in, opera-house and cathedral, ii, 58, 59; riots in, xiv, 61.  
 Vieuxtemps, Henry, obit., vi, 697.  
 Vigilant, the, lost whaler, vi, 323.  
 Vigono, Col., xiii, 3.  
 Vigorite, x, 345.  
 Viking ship, the, xviii, 529.  
 Vilain, Vicomte, obit., iii, 662.  
 Vilas, William F., sketch, x, 757; portrait, 762.  
 Villages, ancient, xiv, 25.  
 Vincennes, Ind., xvii, 120.  
 Vincent, C., discovery by, iv, 75.  
 Vincent, Edward, x, 311.  
 Vincent, Mary A. Farley, obit., xii, 618.  
 Vines, S., experiments by, iv, 36.  
 Vinton, F., obit., xv, 669.  
 Virchow, Rudolph, theory of, vi, 550; xii, 669.  
 Virgin Mary, insult to the, x, 713.  
 Virginia, article on, in every volume, giving statistics, State government and legislation, election returns, etc.; views in, i, 801; ii, 759, 761, 762; vi, 870; constitutional amendments, i, 800; stationing of troops at Petersburg, i, 800, 801; sympathy with South Carolina, 802; gifts to the University, 802; the Moffat register law, ii, 758; election of F. W. M. Holliday Governor, and sketch, ii, 762; the State debt, iii, 820, 821; iv, 842, 843, 844; v, 709; decision under the civil-rights act, iii, 825; the Readjustment party, iv, 843, 844; colored juror question, 845; the Governor's veto of the repudiation bill, v, 709; the Yorktown centennial, vi, 869; diagram and description of the proposed monument, 870, 871; William E. Cameron, Governor, vii, 827; Riddleberger bill, 828, 829; election riot, viii, 816; acts passed over the veto, ix, 797; bond cases, x, 268; the oyster interest, x, 777; Fitzhugh Lee elected Governor, xii, 792; population, xv, 847, and xvi, 859; county debts, xv, 848; debt settlement, xvi, 860; boundary, xvii, 789, and xviii, 711.  
 Virginia City, growth of, xii, 133.  
 Vischer, Friedrich Theodor, obit., xii, 639.  
 Vitale, Count Luigi, obit., i, 644.  
 Vital force, doctrine of, ix, 808.  
 Viticulture, in United States, vi, 353; viii, 79; in Ecuador, 288; in Mexico, 537; xiii, 37, 105, 830.  
 Vitu, Auguste, obit., xvi, 687.  
 Vitu, Sultan of, x, 796.  
 Vivarez, Henri, x, 578.  
 Vivisection, regulations for the practice of, i, 360; bill to prohibit, iv, 457; licenses, 457.  
 Vizetelly, H. R., obit., xviii, 588.  
 Vizier, the grand, office of, abolished, iv, 833.  
 Voconius, Pollio, palace of, ix, 26.  
 Vodges, William, obit., xi, 705.  
 Voegtlin, W., obit., xvii, 580.  
 Vogdes, Israel, sketch, xiv, 651.  
 Vogel, H. C., observations by, vii, 37; star catalogue by, viii, 28.  
 Vogel, H. M., ix, 122.  
 Vogt, C., discovery by, vi, 303.  
 Voice, physiology of the, viii, 636.  
 Voigts-Rhetz, Gen., ii, 613.  
 Volapük, structure of, xii, 794; derivation of words, 795; adoption of, 797; meeting of societies, 797; bibliography, 798.  
 Volcanic eruptions, of Cotopaxi, ii, 268; ix, 28; in Patagonia, iii, 365; of Etna, iv, 527; in Ecuador, vi, 331; of Krakatoa and others, viii, 526; ix, 53; x, 400; in Hawaiian Islands, ix, 389; atmospheric effects of, viii, 526; of Ometepe, viii, 582; of Momotombo, xi, 66, 653. See Earthquakes, etc., viii, 284.  
 Volcanoes, ix, 389, 541; xiv, 559; colored chart showing the principal volcanoes, seismic areas, and coral reefs, xi, 296; Irazu, x, 398; Jorullo, illustration, ii, 511; Asama-jama, xii, 311; Krakatoa, x, 400; a new, 400.  
 Volckmar, Wilhelm, obit., xii, 639.  
 Volkhart, Wilhelm, obit., i, 644.  
 Volkmann, A. W., obit., ii, 613.  
 Vollmer, A. J., obit., i, 644.  
 Volta, Alessandro, researches of, vii, 265.  
 Volta, discovery of the sources of the, xii, 305.  
 Von Lenk, x, 343.  
 Voorhees, Charles S., nominated, xiii, 838.  
 Vories, Henry M., obit., i, 626.  
 Vose, Richard, obit., xviii, 574.  
 Vote by proxy, viii, 47.  
 Vought, Walter, obit., xviii, 574.  
 Voysey, Rev. C., ix, 759.  
 Vriendt, Albrecht de, xi, 343.  
 Vuillefroy, Félix, x, 363.  
 Vulcacius, Rufinus, house of, ix, 26.  
 Vulkovitch murder, the, xvii, 71.  
 Vulpian, Edme Felix Alfred, obit., xii, 639.  
 Wabash river improvement, xvii, 354.  
 Wachtel, Theodor, obit., xviii, 588.  
 Waekernagel, Philipp, obit., ii, 613.  
 Waco, Texas, xvi, 173.  
 Wadai, vi, 327.  
 Waddington, Joshua, obit., i, 644.  
 Waddington, William II., sketch, ii, 320; Cabinet of, iv, 386; ix, 290.  
 Wade, Benjamin F., sketch, iii, 825.  
 Wadhams Edgar P., obit., xvi, 660.  
 Wadleigh, Brainbridge, obit., xvi, 660.  
 Wadleigh, L. F., obit., xiii, 656.  
 Wages in Japan, xiii, 453.  
 Wagner, A., process for water-examination, vi, 94.  
 Wagner, Moritz Friedrich, obit., xii, 639.  
 Wagner, Richard, music of, i, 571; festival at Baireuth, 572; *Ring des Nibelungen*, i, 573; sketch, portrait, viii, 816.  
 Wagner, Rudolf J. von, obit., v, 604.  
 Wagon-road lands, in Oregon, xviii, 597; in Idaho, 395.  
 Wahala, Bishop, obit., ii, 613.  
 Wahl, W. H., x, 159.  
 Wailes, J. W., xi, 536.  
 Waitangi, treaty of, x, 66, 67.  
 Waite, Morrison R., sketch, vii, 831; portrait, vii, 126; sketch xiii, 836.  
 Waitapu Mount, ix, 540.  
 Waitz, George, obit., xi, 728.  
 Wakeman, A., sketch, xiv, 651.  
 Wakkau. See Vakkan.  
 Walad Denkal, ii, 2.  
 Walcott, Charles F., obit., xii, 619.  
 Walcott, C. D., x, 404.  
 Walda, Michael, revolt of, i, 4, 5.  
 Waldeck-Pyrmont, George Victor, Prince of, obit., xviii, 588.  
 Waldeck-Rousseau, P. M., viii, 357, 367.  
 Waldegrave, Countess, obit., iv, 701.  
 Waldensians, ii, 762; vi, 771; xviii, 534.  
 Waldo, L., observations by, v, 56.  
 Waldstein, M., xi, 32.  
 Walenn, inventions, ii, 533.  
 Wales. See GREAT BRITAIN.  
 Wales, Agrarian agitation in, xi, 404.  
 Wales, Prince of, in India, i, 44, 401.  
 Walker, Alexander, obit., xviii, 574.  
 Walker, Sir B. W., sketch, i, 802.  
 Walker, David S., obit., xvi, 660.  
 Walker, George, sketch, xiii, 656.  
 Walker, James, sketch, xiv, 651.

- Walker, James P., obit., xv, 669.  
 Walker, Jonathan, obit., iii, 647.  
 Walker, John G., obit., xviii, 574.  
 Walker, J. T., x, 47.  
 Walker, W. S., nominated, xiii, 619.  
 Wallace, A. R., xii, 670.  
 Wallace, G. D., obit., xv, 669.  
 Wallace, J., invention by, i, 91.  
 Wallace, Mackenzie, ix, 279.  
 Wallace, Sir R., obit., xv, 691.  
 Wallace, W., inventions by, iii, 272; ix, 306.  
 Wallace, Wm. Ross, obit., vi, 689.  
 Wallack, John Lester, sketch and port., xiii, 656.  
 Walla Walla, xiv, 162.  
 Wall-decoration, ix, 250.  
 Waller, Augustus D., experiments by, xii, 674.  
 Waller, Thomas M., vii, 173.  
 Walling, G. W., obit., xvi, 660.  
 Wallis, Sir Provo, obit., xvii, 604.  
 Wallis, Robert, obit., iii, 662.  
 Wallner, Franz, obit., i, 644.  
 Wallo Galla, ii, 2.  
 Walloon Churches, vii, 709.  
 Wall-paper, viii, 615; ix, 247.  
 Walmsley, W. H., ix, 521.  
 Walpole, Frederick, obit., i, 644.  
 Walpole, Sir Robert, obit., i, 644.  
 Walrand, M., ix, 473.  
 Walsh, Archbishop, appointment of, x, 455.  
 Walsh, J. H., sketch, xiii, 669.  
 Walshe, W. H., obit., xvii, 604.  
 Walter, M., engineering work of, x, 332.  
 Walter, Thomas U., obit., xii, 619.  
 Waltham, Mass., xvi, 173.  
 Walther, Carl Ferdinand Wilhelm, obit., xii, 619.  
 Walton, E. P., obit., xv, 669.  
 Walworth trial, the, ix, 627.  
 Wanamaker, J., sketch, xiv, 803.  
 War College, xiv, 814.  
 Ward, Captain, invention by, iii, 766.  
 Ward, Durbin, obit., xi, 705.  
 Ward, Edward M., obit., iv, 701.  
 Ward, George Cabot, obit., xii, 619.  
 Ward, John Q. A., x, 361, 367.  
 Ward, L. F., quotation from, vi, 241; x, 404.  
 Ward, R. H., ix, 507.  
 Ward, W. Hayes, ix, 19; xi, 25.  
 Wardell, Daniel, obit., iii, 647.  
 Ware, Jairus, obit., ii, 590.  
 Ware, J. F. W., obit., vi, 689.  
 Waring, E. J., obit., xvi, 687.  
 Waring, G. E., ix, 723, 724, 728.  
 Warrington, experiments, vi, 98.  
 War-levy, on Southern States, iv, 429, 835.  
 Warmoth, Henry C., nominated, xiii, 501.  
 Warner, Hiram, obit., vi, 690.  
 Warner, H. H., xi, 54, 57.  
 Warner Observatory, the, v, 36; vii, 41.  
 Warner, Olin L., x, 361; xi, 347.  
 Warner, Susan, obit., x, 654.  
 Warnots, Henry, obit., xviii, 588.  
 War Records of the Rebellion, iii, 32.  
 Warren, Sir Charles, ix, 114; x, 86 *et seq.*; resigns, xiii, 391.  
 Warren, Edward J., obit., i, 626.  
 Warren, Fitz-Henry, obit., iii, 647.  
 Warren, Lieut. G. R., x, 401.  
 Warren, H., xii, 483.  
 Warren, Henry J., obit., i, 626.  
 Warren, John C., ix, 641.  
 Warren, J. W., xii, 672.  
 Warren, Joseph, sketch, i, 802.  
 Warren, O. G., obit., xvii, 580.  
 Warren, Samuel, obit., ii, 613.  
 Warren, Susanna, obit., xi, 706.  
 Warren, William, sketch, xiii, 657.  
 Warrington, pen-name of William S. Robinson, *q. v.*  
 Warrington, R., experiments, by, x, 157.  
 Wars. See the articles on the various countries.  
 War-vessels, new British, x, 444.  
 Warsberg, A., sketch, xiv, 672.  
 Washburn, C. A., obit., xiv, 651.  
 Washburn, Emory, sketch, ii, 762.  
 Washburn, Israel, the elder, obit., i, 626.  
 Washburn, Israel, the younger, obit., viii, 597.  
 Washburn Observatory, vii, 41.  
 Washburn, William Barrett, obit., xii, 619.  
 Washburne, Elihu B., sketch and portrait, xii, 798.  
 Washington centennial, xiv, 604.  
 Washington, city of, its recent growth, xii, 133; views in, i, 786; ii, 751, 753.  
 Washington aqueduct, ix, 316.  
 Washington (State), xiv, 821; xv, 850; xvi, 861; xvii, 790; xviii, 752.  
 Washington (Territory, afterward State), articles giving statistics, government, etc., in every volume except iii-vii; progress in wealth and population, ii, 763; x, 779; finances, ii, 763; viii, 849; ix, 799; xii, 798; tide-lands, ii, 763; salmon and other fisheries, 763; coal and lumber, ii, 763; ix, 800; x, 780; xi, 837; Gov. William A. Newell, viii, 819; education, viii, 819; ix, 801; x, 780; xii, 800; Indians, viii, 819; ix, 801; x, 780; xii, 800; statehood, viii, 819; Northern Pacific Railroad, 819; products, commerce, banks, railroads, newspapers, churches, ix, 799-801; territorial government, x, 779; Chinese in, x, 780; coal, 780; anti-Chinese disturbances, xi, 836; resources and development, 837; iron in, 837; hop-culture, 837; xii, 800; census, xii, 799; mining and lumber industries, 800; exports, 800; xiii, 337; population, xv, 850; tide lands, xvi, 862; State lands, xxii, 790.  
 Washington, treaty of, xii, 282.  
 Wasserfuhr, invention, x, 345.  
 Wasson, David A., obit., xii, 620.  
 Wassum, Herr, observations by, xi, 534.  
 Watch-springs, new method of tempering, xii, 480.  
 Water, analysis of, iii, 91; iv, 136, 628; vii, 9; viii, 111, 118; loss of oxygen in electrolysis of, iii, 93; purification of, v, 94, 367; chemical analysis insufficient, iv, 135; purity of, ix, 125; composition of ocean, 126; to heat rapidly, xi, 742; synthesis of, xiii, 145.  
 Waterbury, Conn., xvi, 174.  
 Water-gas processes, viii, 373.  
 Water-gate and dam, illustration, xiv, 463.  
 Waterhouse, J. W., pictures by, x, 365; xi, 345; xii, 276.  
 Waterman, Robert W., obit., xvi, 660.  
 Water-motor, the, vi, 871; xi, 742; illustration, 742.  
 Water-pipes, flexible, xvii, 255.  
 Waters, Horace, obit., xviii, 574.  
 Water-shed of South Africa, iv, 405.  
 Water-spaniel, the Irish, ix, 257.  
 Waterston, R. C., obit., xviii, 574.  
 Watertown, Dak., xiv, 162.  
 Watertown, N. Y., recent growth of, xi, 188; xv, 149.  
 Waterways, in Delaware, xviii, 255.  
 Waterworks, xiv, 290.  
 Watkins, A. B., obit., xvii, 580.  
 Watkins, Alice, obit., xii, 620.  
 Watkins, Gen. N. W., obit., i, 626.  
 Watkins, W. B., obit., xv, 617.  
 Watrin, murder of, xi, 359.  
 Watson, J. C., discoveries by, i, 46; ii, 44; iii, 33; v, 34; obit., v, 597; prize to, ix, 55.  
 Watson, Jean L., obit., x, 671.  
 Watson, L. F., obit., xv, 670.  
 Watson, Sereno, obit. and port., xvii, 580.  
 Watson, S. W., obit., xv, 670.  
 Watsonson, Harvey M., obit., xvi, 660.  
 Watts, George Frederick, pictures by, x, 361, 365; xi, 345; xii, 277.  
 Watts, Frederick, sketch, xiv, 652.  
 Watts, Henry, obit., ix, 623.  
 Watts, Sir James, obit., iii, 662.  
 Watts, T. H., obit., xvii, 581.  
 Watts, W. L., explorations in Iceland, ii, 324.  
 Waud, Alfred R., obit., xvi, 661.  
 Waugh, William B., obit., ii, 590.  
 Wauters, A. J., x, 393.  
 Wave motors, xiv, 296.  
 Wave-power, utilization of, with illustration, xi, 743.  
 Waynesboro, engagement at, x, 429.  
 Weather Bureau, maps, observations, and reports. See Signal Service, iv, 797.  
 Weather indicator, illustration, iv, 804.  
 Weather, the instrument for forecasting, iv, 808; affected by forecasts, viii, 350; influence of the moon on, xii, 487; popular signs of, 487.  
 Weaver, A. J., obit., xii, 620.  
 Weaver, Gen. J. B., acceptance of presidential nomination, v, 699.  
 Webb, Eckford, obit., xviii, 575.  
 Webb, George J., obit., xii, 620.  
 Webb, James W., obit., ix, 613.  
 Webb, Matthew, obit., viii, 606.  
 Webb, Thomas W., obit., x, 671.  
 Weber, George, sketch, xiii, 669.  
 Weber, Karl P. von, obit., vi, 697.  
 Weber, Wilhelm E., obit., xvi, 687.  
 Webster, A., obit., xv, 670.  
 Webster, Albert F., obit., ii, 590.  
 Webster, Caroline L. R., obit., vii, 644.  
 Webster, Daniel, centennial of, vii, 520; statue of, xi, 347, 619.  
 Webster, Erastus D., obit., xviii, 574.  
 Webster, experiments by, viii, 524.



- Webster, J., invention by, vii, 531.  
 Webster, John A., obit., ii, 590.  
 Webster, Joseph D., obit., i, 626.  
 Webster, Thomas, obit., xi, 729.  
 Wedenskii, experiments by, x, 690.  
 Weed, Harriet Ann, obit., xviii, 574.  
 Weed, Thurlow, sketch, vii, 833.  
 Weeds, germination of, ix, 129.  
 Weekes, Henry, obit., ii, 613.  
 Wehl, F., obit., xv, 692.  
 Wehrenpfenuig, E., experiments by, x, 575.  
 Weidenheim, Baron Korb, iv, 60.  
 Weilenmann, invention by, iii, 545.  
 Weiler, Lazare, xi, 538.  
 Weimer, Dr., v, 665.  
 Weinstein, Dr., observations by, xi, 545.  
 Weir, John F., x, 361.  
 Weir, R. W., obit. and port., xiv, 652.  
 Weir, Col. Thomas B., obit., i, 626.  
 Weiske, Julius, obit., ii, 613.  
 Weiss, Jean J., obit., xvi, 687.  
 Weiss, John A., sketch, xiii, 657.  
 Welch, A. S., obit., xiv, 652.  
 Welch, Philip H., obit., xiv, 652.  
 Welch, R. B., obit., xv, 670.  
 Weld, Mason Cogswell, obit., xii, 620.  
 Weldon, Walter, obit., x, 671.  
 Welle River, conjectures concerning, iii, 363; exploration of, v, 292; viii, 386.  
 Welles, E. R., sketch, xiii, 658.  
 Welles, Gideon, sketch, iii, 825.  
 Wellington, Duke of, obit., ix, 624.  
 Wells balance, the, illustration, iii, 775.  
 Wells, C. H., obit., xiii, 657.  
 Wells, C. S., discovery by, vii, 36.  
 Wells, Elijah, obit., ii, 590.  
 Wells, Henry, obit., iii, 647.  
 Wells, J. R., invention by, iii, 774.  
 Wells, Mary, obit., iii, 647.  
 Wells, W., obit., xvii, 581.  
 Wellstood, John Geike, obit., xviii, 574.  
 Welsbach, Auer von, xii, 101, 652.  
 Welsh Calvinistic Methodist Church, xv, 748.  
 Welsh, John, sketch, iii, 826; obit., xi, 706.  
 Welte, M., invention by, x, 612.  
 Wenham, Mr., ix, 508, 509, 510, 512.  
 Wennecke, xi, 50.  
 Wentworth, J., obit. and port., xiii, 658.  
 Werden, Reed, obit., xi, 706.  
 Werder, August Carl Leopold, obit., xii, 640.  
 Werdermann, R., invention by, iii, 272.  
 Werner, Gustav, obit., xii, 640.  
 Werthheimer, Joseph Ritter von, obit., xii, 640.  
 Wesleyans. See Methodists, in each volume.  
 Wessells, H. W., obit., xiv, 652.  
 West Africa, French, xvii, 291.  
 West Africa, xviii, 329.  
 West, Stephen W., obit., i, 626.  
 Westbrook, T. R., charges against, vii, 602.  
 Westcott, T., obit., xiii, 658.  
 Western Australia, xiv, 56; xv, 48; xvii, 46; xviii, 58.  
 Western, Lucille, obit., ii, 590.  
 Weston, E., invention by, viii, 303; ix, 305; x, 159.  
 West Indies, the, in vols. viii, ix, x, and xii; xiii, 839; xiv, 824; xvi, 863; xvii, 792; xviii, 755.  
 Westminster Abbey, illustration, ii, 363.  
 Westminster Hall, explosion at, x, 454.  
 Westmoreland, Greek inscription in, ix, 22.  
 West, Mary A., obit., xvii, 581.  
 West Orange, N. J., xviii, 168.  
 West Point hazing case, v, 30.  
 West, T. S., sketch, xiv, 652.  
 West Virginia, article on, in every volume, giving statistics, government, election returns, etc.; view in, ii, 764; impeachment of public officers, i, 802; H. M. Mathews elected Governor, 803; disagreement with Virginia as to the debt prior to 1861, iii, 827; improvement in the Kanawha, 827; opposition to normal schools, iv, 845, 846; vi, 872, 873; proposed constitutional amendments, iv, 846; v, 714; disorders in Wetzel County, 846, 847; estates of married women, 847; ferry privileges at Harper's Ferry, 847; case of Strander, 847; Jacob B. Jackson chosen Governor, v, 714; University, vi, 873; land-titles, vii, 835; the land league, 835; John G. Kenna elected Senator, viii, 821; election of Charles P. Snyder, 822; election irregularities, ix, 806; the capitol building, 806; E. Willis Wilson governor, 806; settlement of boundary, xi, 839; population, xv, 853.  
 Westwood, J. O., obit., xviii, 588.  
 Wetherspoon, W. W., obit., xiii, 659.  
 Wetmore, Prosper M., obit., i, 626.  
 Weyher, C. L., musical telephone of, iii, 588.  
 Weyprecht, K., plan for polar stations, vi, 325; vii, 335; viii, 382.  
 Whaleback steamers, xviii, 232.  
 Whalley, George H., obit., iii, 662.  
 Whalley, William H., obit., i, 626.  
 Wharton, Francis, sketch, xiv, 653.  
 Wharton, Joseph, experiments by, vii, 532; viii, 522; x, 159.  
 Wheat-growers' Convention, xiv, 567.  
 Wheatley, William, obit., i, 626.  
 Wheaton, on international law, vii, 620.  
 Wheat-tax, in France, ix, 243.  
 Wheeler, Amos D., obit., i, 627.  
 Wheeler, Dora, ix, 247, 248.  
 Wheeler, George M., x, 402, 403.  
 Wheeler, N. W., sketch, xiv, 653.  
 Wheeler, Mrs. T. M., ix, 247, 248.  
 Wheeler, William A., sketch, i, 805; sketch and portrait, xii, 804.  
 Wheeling, W. Va., xvi, 175.  
 Wheildon, W. W., obit., xvii, 581.  
 Whetham, J. W. B., ix, 539.  
 Whicote, George, obit., xvi, 688.  
 Whigs, policy of the, x, 433.  
 Whipping-post, bill to introduce, into Missouri, iv, 639.  
 Whipple, George, obit., i, 627.  
 Whipple, G. M., obit., xviii, 588.  
 Whisky, in Kentucky, xviii, 424.  
 Whisky-tax in England, the, x, 447.  
 Whittall, Henry, obit., xii, 620.  
 White Caps, xiii, 441, 670.  
 White, C. A., obit., xvii, 581.  
 White, Dr. C. A., x, 404.  
 White, Edwin, obit., ii, 590.  
 White, Mrs. E. G., prophecies of, ii, 4; iv, 5.  
 White, G. B., obit., xv, 670.  
 White, Gilbert, observations by, viii, 526.  
 White, Hale W., xii, 671.  
 White, J., obit., xv, 670.  
 White, Joseph, invention by, xii, 94.  
 White, Richard Grant, obit. and portrait, x, 785.  
 White, Sir W. A., obit., xvi, 688.  
 White, Sir William, x, 752, 753.  
 White, William Thomas, obit., xviii, 575.  
 White Cross Society, the, xii, 805.  
 White Book, the, ix, 361.  
 White Mountains, measurements of, ix, 538.  
 Whitefield, E., obit., xvii, 582.  
 Whitehead, William, obit., xviii, 575.  
 Whiteley, James, ix, 539, 540.  
 Whiteley, R. H., obit., xv, 670.  
 Whites, a supposed tribe of, in Africa, iv, 406.  
 Whiteway, Sir William, x, 629.  
 Whiting, Daniel P., obit., xvii, 582.  
 Whitley, Harry G., x, 392.  
 Whitman, Mrs. Sarah Helen, obit., iii, 648.  
 Whitman, Walt, sketch and port., xvii, 795.  
 Whitney, J. D., x, 402, 407; xi, 545.  
 Whitney, Miss, xi, 377.  
 Whitney, William C., sketch, x, 757; portrait, 760.  
 Whitney, Mt., ix, 539.  
 Whittaker, Cadet, case of, v, 30.  
 Whitthorne, Washington C., obit., xvi, 661.  
 Whittier, John Greenleaf, sketch and portrait, xvii, 800.  
 Whittingham, William R., sketch, iv, 847.  
 Whittlesey, Charles, obit., xi, 706.  
 Whitworth, Sir Joseph, obit., xii, 640.  
 Wholmuth, Arctic voyage of, viii, 388.  
 Whympy, Edward, explorations by, vi, 330; viii, 528; ix, 540.  
 Wickersham, James P., obit., xvi, 661.  
 Wichita, growth of, xi, 189.  
 Wickes, Stephen, sketch, xiv, 653.  
 Wickham, Joseph D., obit., xvi, 661.  
 Widdin, siege of, x, 728.  
 Widor, M., xii, 520.  
 Wieniawski, Henry, obit., v, 604.  
 Wiestling, G. B., obit., xvi, 661.  
 Wiggan, Henry, ix, 478.  
 Wigginton, P. D., obit., xv, 671.  
 Wight, O. W., sketch, xiii, 658.  
 Wilber, David, obit., xv, 671.  
 Wilcox, C. M., obit., xv, 671.  
 Wild, Augustus, obit., xvi, 661.  
 Wilde, invention by, iii, 276.  
 Wilde, Sir Alfred T., obit., iii, 662.  
 Wilde, Sir William R. W., obit., i, 644.  
 Wilder, J. A. V., obit., xvii, 605.

- Wilder, Marshall P., obit., xi, 707.  
 Wilder, Royal G., obit., xii, 621.  
 Wildermuth, Ottilie, obit., ii, 613.  
 Wilderness, battle of the, x, 427; xi, 416.  
 Wiles, Irving R., xi, 346.  
 Wiley, Charles, obit., iii, 648.  
 Wiley, H. W., experiments by, vi, 351.  
 Wiley, John, obit., xvi, 661.  
 Wilhelm of Brunswick, obit., ix, 624.  
 Wilhelm I, Emperor of Germany, sketch, xiii, 842.  
 Wilhelm II, Emperor of Germany, sketch and port., xiii, 845; xvi, 328.  
 Wilhelmshöhe, illustration, iii, 388.  
 Wilkes, Charles, sketch, ii, 766; expedition, x, 401.  
 Wilkes, John, expulsion of, from House of Commons, vii, 202.  
 Wilkesbarre, Pa., growth of, xi, 189.  
 Wilkeson, Samuel, sketch, xiv, 653.  
 Wilkie, F. B., obit., xvii, 582.  
 Wille, Capt., explorations by, iii, 353.  
 Willem III, King, obit., xv, 692.  
 Willett, James M., obit., ii, 590.  
 William I of Germany. See Germany, in every volume.  
 William III of the Netherlands. See Netherlands, in every volume.  
 William Barent, the, voyage of, x, 398.  
 Williams, A., obit., i, 627.  
 Williams, Albert, x, 404.  
 Williams, Alpheus S., obit., iii, 648.  
 Williams, A. S., observations by, viii, 21.  
 Williams, Barney, sketch, i, 805.  
 Williams, Henry S., x, 45.  
 Williams, James D., sketches, i, 411; v, 715.  
 Williams, John S., obit., i, 627.  
 Williams, Montagu, obit., xvii, 605.  
 Williams, S. Wells, obit., ix, 613.  
 Williams, William, railroad director, obit., i, 627.  
 Williams, William, English bishop, obit., iii, 662.  
 Williams, W. M., new theory of, vi, 100; observations by, viii, 526.  
 Williams, William R., obit., x, 654.  
 Williamsburg, battle of, x, 553; xi, 415.  
 Williamson, A. W., address on the atomic theory, vi, 91.  
 Williamson, B., obit., xvii, 582.  
 Williamson, I. V., sketch, xiv, 653.  
 Williamsport, Pa., xv, 149.  
 Willis, Benjamin A., obit., xi, 707.  
 Willis, Lieut.-Gen., in Egypt, vii, 253; portrait, *ibid*.  
 Willkomm, Ernst Adolf, obit., xi, 729.  
 Wills, act on, in Michigan, viii, 539.  
 Wills, T., experiments by, iv, 135.  
 Wills, William G., obit., xvi, 688.  
 Willson, D., nominated, xiii, 569.  
 Wilmarth, Seth, obit., xi, 707.  
 Wilmer, Rev. J. B. P., obit., iii, 648.  
 Wilmington, Del., recent growth of, xi, 189; Swedish church at, illustration, ii, 247.  
 Wilmington, election in, xiii, 264.  
 Wilmington, N. C., recent growth of, xii, 135; in the war, x, 429.  
 Willoughby, Gen., xi, 518.  
 Wilson, A. B., obit., xiii, 658.  
 Wilson, Andrew, obit., ii, 590.  
 Wilson, Col., his address, xiii, 46.  
 Wilson, Sir Charles, ix, 304; x, 314, 315; xi, 27.  
 Wilson, Sir D., obit., xvii, 605.  
 Wilson, Daniel, case of, xiii, 350.  
 Wilson, E. M., nominated, xiii, 559; obit., xv, 671.  
 Wilson, Ephraim K., obit., xvi, 661.  
 Wilson, H. D., surveys by, ii, 337.  
 Wilson, H. M., new process for copper, ii, 500.  
 Wilson, Sir James Erasmus, obit., ix, 625.  
 Wilson, Gen. James Harrison, raid of, x, 431.  
 Wilson, John, obit., i, 627.  
 Wilson, M., obit., xvii, 582.  
 Wilson, observations by, vi, 39.  
 Wilson, Rivers, appointed Minister of Finance in Egypt, iii, 266; iv, 328; assailed, 329; recalled, 332.  
 Wilson scandal, the, sale of decorations, in France, xii, 294.  
 Wilson, Thomas, bequests of, vii, 510.  
 Wilson, Thomas P., obit., ii, 590.  
 Wiltse, Gilbert C., obit., xviii, 575.  
 Wiltz, L. A., death of, vi, 514.  
 Winans, Ross, obit., ii, 590.  
 Winants, G. E., obit., xv, 671.  
 Winch, rope-maker's, xiii, 249.  
 Winchell, Alexander, ix, 44; obit., xvi, 662.  
 Winchester, battle of, x, 428.  
 Winchester, Oliver F., obit., v, 597.  
 Windlasses, ships', xvi, 712.  
 Windom, William, sketch and port., xiv, 802; obit. and port., xvi, 662.  
 Winds, xiii, 493; in mountain regions, 494; xiii, 537; xiv, 549; xv, 537; xvii, 452.  
 Windthorst, Herr, ix, 356, 357, 361; x, 120, 415; xi, 388.  
 Windthorst, Ludwig, obit. and port., xvi, 688.  
 Windward Islands, the, xii, 802; xiv, 403; xvi, 863; xvii, 793.  
 Windward, the yacht, x, 192.  
 Wines, commerce in, iv, 169; sulphates in, vii, 90.  
 Wines, Rev. E. C., xii, 702, 704.  
 Wing, Conway P., sketch, xiv, 653.  
 Wingfield, Lewis, obit., xvi, 689.  
 Winkler, experiments by, ii, 500.  
 Winnecke, Dr., discovery, ii, 46; observations, vi, 39.  
 Winnipeg, xiii, 174; city hall at, xvi, 479.  
 Winona, view in, ii, 524; xv, 149.  
 Winslow, E. D., case of, i, 232.  
 Winslow, F., observations of, vi, 713, 714.  
 Winslow, Henry C., obit., i, 627.  
 Winslow, J. F., obit., xvii, 582.  
 Winsor, H. D., ix, 273.  
 Winter palace, the, illustration, i, 712; explosion in, v, 662.  
 Winther, Christian, obit., i, 644.  
 Winton, Sir F. de, x, 192.  
 Wire, new galvanizing process for, x, 579; machine for painting, xi, 743.  
 Wire-fences, xi, 743; illustration, 743; patent declared invalid, xii, 650.  
 Wisconsin, article on, in every volume, giving statistics, legislative proceedings, election returns, etc.; views in, i, 807, 808; repeal of railroad legislation act, i, 806; State railroad commissioner, 896; refusal to admit a woman to the bar, 809; geological survey, ii, 768; William E. Smith elected Governor, 769; sketch, 770; local indebtedness, iii, 828; railroad commissioner's report, 829; reduction of tariff-rates, 829; election of Senator Matthew H. Carpenter, 831; unconstitutionality of the law to protect trademarks, 831; tramp-law, iv, 848; viii, 822; Indians, vi, 875; election of Jeremiah M. Rusk as Governor, vi, 876; constitutional amendment, 876; immigration, vii, 838, 839; money appropriated for Gettysburg monuments, xii, 806; animal mounds in, xi, 23; act to prevent the killing of birds for millinery purposes, xii, 806; population, xv, 855; suits against ex-treasurers, xvi, 868; labor statistics, xvii, 808.  
 Wise, Henry A., sketch, i, 809.  
 Wissmann expedition, the, xiv, 830.  
 Wissmann, Lieut., explorations of, viii, 385; x, 392; xii, 303.  
 Wister, Casper, sketch, xiii, 658.  
 Withers, D. D., obit., xvii, 582.  
 Witherspoon, Andrew J., obit., xvi, 662.  
 Wittich, Ludwig von, obit., xii, 641.  
 Witu, xv, 270.  
 Woburn, Mass., growth of, xii, 135.  
 Woehrl, Frederick, obit., ix, 808.  
 Woeikoff, Dr., observations by, xi, 541, 544; xii, 489.  
 Woermanns, the, ix, 364, 365.  
 Wolf, discovery by, ix, 52.  
 Wolf, Gerson, obit., xvii, 605.  
 Wolfe expedition to Babylonia, the, ix, 19, 52; xi, 25.  
 Wolfe, Catherine L., sketch and portrait, xii, 807; bequest of, xii, 279.  
 Wolfe, Joel, obit., v, 597.  
 Wolfe monument, illustration, ii, 259.  
 Wolff, Albert, obit., xvi, 689.  
 Wolff, Sir Henry Drummond, in Egypt, x, 310, 448, 755; xi, 313; xii, 241; xiii, 679.  
 Wolff, experiments by, vi, 753; xii, 675.  
 Wolle, Francis, obit., xviii, 575.  
 Wolofski, L. F. M., ix, 358; sketch, i, 810.  
 Wolsley, Sir Garnet, sketch, vii, 839; portrait, vii, 232; in South Africa, iv, 125; in Egypt, ix, 203; x, 314, 711.  
 Wolter, Charlotte, ix, 465.  
 Wolverton, George Grenfell Glyn, obit., xii, 641.  
 Woman suffrage, xiii, 520, 838; in Colorado, xviii, 179; in Idaho, 396.  
 Woman's Christian Temperance Union, xv, 857.  
 Women, in India, ii, 389; x, 496; xii, 382; order conferred only



- on, iii, 406; instruction at Harvard for, iv, 602; admitted to the bar in Maryland, ii, 481; in California, iii, 71; not in Massachusetts, vi, 539; deaconesses, v, 638; Presbyterian Church on preaching by, iii, 693; v, 630; in office in Massachusetts, viii, 519; in Belgium, in public service, vii, 67; property rights of married, ii, 223, 340; iii, 676; iv, 107, 299, 847; v, 610; vii, 365; of widows, v, 610; vi, 575; contracts by married, in Indiana, vi, 426; right of husbands to vote in consequence of the property of their wives, iii, 732; suffrage question, ii, 108; iii, 525, 808; iv, 454, 598, 639; v, 344, 611; vi, 622; vii, 47, 134, 516; viii, 411, 444; ix, 374; x, 725; in England, iv, 454; in the Isle of Man, v, 344. For conventions, see under titles of States.
- Wood, B. R., sketch, xiv, 653.
- Wood, Daniel P., obit., xvi, 662.
- Wood, Sir Evelyn, vii, 87; x, 306.
- Wood, H. C., experiments by, vii, 690.
- Wood, Mrs. Henry, obit., xii, 641.
- Wood, Horace G., obit., xviii, 575.
- Wood, James, obit., xvii, 582.
- Wood, James F., sketch, portrait, viii, 823.
- Wood, J. G., sketch, xiv, 672.
- Wood, John, obit., v, 597.
- Wood, W. A., obit., xvii, 583.
- Wood, William, obit., ii, 590.
- Woodbridge, Jonathan E., obit., ii, 591.
- Wood-carving, ix, 246.
- Woodcock, in the United States, x, 390.
- Woodford, James R., obit., x, 671.
- Wood-gas, viii, 376.
- Woodlark Islands, x, 681.
- Wood pulp, xvii, 810.
- Woodruff defalcation, xvi, 32; xviii, 24.
- Woodruff, Israel C., obit., iii, 648.
- Woods, G. L., obit., xv, 671.
- Woods, Oregon pine, vi, 222; in Brazil, viii, 72; cedar, 141; pine, in Honduras, 431; cabinet, in Japan, viii, 456; of Madagascar, viii, 505.
- Woods, Leonard, obit., iii, 648.
- Woods, Jacob A., obit., iv, 697.
- Woods, William B., obit. and portrait, xii, 621.
- Woodson, E. C., obit., iii, 648.
- Woodthorpe, Col., x, 397.
- Woodward, C. M., experiments by, vi, 753.
- Woodward, Dr. H., ix, 636.
- Woodward, Warren J., obit., iv, 697.
- Wood-wool, ix, 747.
- Woodworth, John M., obit., iv, 697.
- Wool, commerce in, iv, 172; in Oregon, xviii, 597.
- Wool-growers' convention, xi, 194.
- Wool, mineral, xvi, 528.
- Woolner, Thomas, obit., xvii, 605.
- Woolridge, L. C., experiments by, viii, 633.
- Woolsey, Abby H., obit., xviii, 575.
- Woolsey, T. D., sketch, xiv, 653.
- Woolworth, Samuel B., obit., v, 597.
- Woonsocket, R. I., growth of, xii, 135.
- Wooten, Edward, obit., xii, 621.
- Worcester, Mass., growth of, xii, 136; soldiers' monument at, iii, 526.
- Worcester, Thomas, obit., iii, 648.
- Wordsworth, Charles, obit., xvii, 605.
- Wordsworth, Christopher, obit., x, 671.
- Work, Henry C., obit., ix, 613.
- Working-people, accidents and sickness, insurance for, in Germany, viii, 394; xii, 328; new English law on housing of, x, 453. See also Labor.
- World's Columbian Exposition, xvi, 836; xvii, 812; xviii, 760; fine arts at, 312; libraries at, 431. See also the articles on the several States.
- World's Convention, xviii, 700.
- World's Congress Auxiliary, xviii, 763.
- World's Fair Convention, in Alabama, xvi, 7; in Arkansas, xvi, 32; in Florida, xvi, 303; in Kansas, xvi, 403.
- World's Fairs, viii, 824.
- Worsaae, J. J. A., obit., x, 672.
- Worthen, Amos H., sketch and port., xiii, 658.
- Wortley, S., observations by, viii, 528.
- Wrangel, Count von, obit., ii, 613.
- Wrangel Land, v, 301; an island, vi, 323, 324.
- Wray, Mary R., obit., xvii, 583.
- Wright, A. W., invention, ii, 498.
- Wright, Elizabeth, obit., x, 654.
- Wright, H. G., xiii, 11.
- Wright, Horatio G., v, 29.
- Wright, James, obit., xviii, 575.
- Wright, John G., obit., xv, 671.
- Wright, R. S., x, 420.
- Wrinkler, Clemens, xi, 140, 145.
- Wroblewski, Mr., experiments by, ix, 122, 434; xi, 138.
- Wroblewski, S., sketch, xiii, 669.
- Wunderlich, K. A., obit., ii, 614.
- Wurtz, C. A., experiments by, vi, 96; obit., ix, 625.
- Wutke, Heinrich, obit., i, 644.
- Wyant, A. H., obit., xvii, 583.
- Wyatt, Sir Matthew D., obit., ii, 614.
- Wyckoff, W. C., sketch, xiii, 659.
- Wyckoff, Dr. William H., obit., ii, 591.
- Wylie, Robert, obit., ii, 591.
- Wyllis, Sir William, obit., xvi, 689.
- Wyman, Luther B., obit., iv, 697.
- Wyoming (Territory, afterward State), statistics, government, etc., in every volume except iii-vii; xiii, xiv, xviii; with map, xv, 860; xvi, 868; xvii, 827; geysers, ii, 770, 771; state of affairs, ii, 770; sheep and cattle exported, 770; viii, 826; ix, 810; winter grazing and wheat raising, ii, 770; Indians, ii, 770; viii, 826; finances, ii, 771; ix, 810; x, 787; xi, 840; xii, 808; books on, ii, 771; William Hale, Governor, viii, 825; resources and general conditions, 826; schools, ix, 810; x, 787; xi, 840; xii, 808; penitentiary commissioners, ix, 810; x, 787; the Chinese, x, 787; irrigation, xi, 840; public buildings, xi, 840; oil, xii, 808; railroads, charities, 808; population and map, xv, 860; admission act, 862.
- Xingu River, exploration of the, x, 104.
- Xylophone, xvi, 870.
- Yachting, xvii, 828; xviii, 774.
- Yachts, trials of steam, vi, 546; illustrated article on, x, 788.
- Yahya Khan, x, 14.
- Yaki Deshik, cave in the hill of, illustration, x, 38.
- Yakoob Beg, i, 776; ii, 41, 418; iii, 96; burning of the body of, iv, 145; children of, *ibid.*
- Yakoob Khan, iii, 437; iv, 7, 9, 13, 491. See *Afghan War*, v, 4.
- Yale College, xi, 840; buildings of, illustrations, ii, 222, 224, 225, 226.
- Yamada, Count Akioseri, obit., xvii, 606.
- Yandok Cho, Lake, x, 395.
- Yangtse, navigation of, xvii, 155; xv, 115.
- Yang-Woo, destruction of the, ix, 141, 142.
- Yap Islands, x, 139.
- Yaqui Indians, the, fights with, x, 590.
- Yard, Edward M., sketch, xiv, 654.
- Yarmouth, xiv, 163.
- Yate, Capt., x, 8, 9, 10, 12.
- Yeames, William F., x, 364.
- Yeast-cake, xvi, 707.
- Yellow Fever, ii, 298; iii, 12; xiii, 9, 314, 340, 563. See *Fever*, *Yellow*.
- Yellow Flags, viii, 767.
- Yellow River, exploration of, v, 289.
- Yelverton, Sir Hastings R., obit., iii, 663.
- Yemen, rebellion in, ix, 764.
- Yeo, G. F., experiments by, vi, 748; ix, 658, 661; x, 695.
- Yeoman and small holdings act, x, 524.
- Yerkes telescope, the, xviii, 47.
- Yonkers, xiv, 162.
- York, England, Roman relics at, ix, 22.
- York, Pa., growth of, xii, 136.
- Yorktown, centenary of, and monument, vi, 869; illustration, vi, 870; x, 361; siege of, x, 558.
- Yosemite Valley, map, iii, 70; views in, iii, 71, 73.
- Yoshida Kyonari, obit., xvi, 689.
- Youmans, Edward L., sketch and portrait, xii, 808.
- Young, Alexander, obit., xvi, 662.
- Young, A. H., obit., xv, 671.
- Young, Brigham, sketch, ii, 771.
- Young, Charles A., observations by, iii, 34; viii, 21, 24, 26.
- Young, Daniel P., obit., iii, 648.
- Young, Dominic, obit., iii, 648.
- Young, E., explorations of, i, 331.
- Young, J. W., xii, 111.
- Young, Thomas L., sketch, xiii, 659.
- Young, V. B., obit., xvii, 583.
- Young, William C., obit., xviii, 575.

- Younghusband, Mr., xii, 310.  
 Young-Man-Afraid-of-His-Horses, obit., xviii, 575.  
 Young Men's Christian Association, ii, 773; xiii, 849; xvi, 870.  
 Youngstown, Ohio, xv, 150.  
 Yruga, Carlos de, Spanish minister recalled, xiii, 269.  
 Yules, David Levy, obit., xi, 707.  
 Yunker, explorations, viii, 386.  
 Yunnanites, Chinese methods for converting, iv, 146.  
 Yussuf Pasha, viii, 290; defeat of, 300.  
 Yvon, Adolphe, obit., xviii, 588.  
 Zabriskie, Francis N., obit., xvi, 662.  
 Zabriskie, Rev. J. L., xii, 672.  
 Zakzaga, battle of, i, 5.  
 Zakrejewsky, Col., x, 9.  
 Zaldivar, R., President of Salvador, iii, 747; his relations with Barrios, x, 465, 466.  
 Zaldua, F., President of Colombia, his death, vii, 104.  
 Zaleski, Bodhan, obit., xi, 729.  
 Zalewski, Lieut., obit., xvi, 690; his expedition, 267.  
 Zambesia, British, xiv, 104; xvii, 76.  
 Zanesville, Ohio, xv, 150.  
 Zankoff party, the, in Bulgaria, ix, 102; x, 730-732.  
 Zante, Earthquakes in, xviii, 370.  
 Zanzibar, seizure of ports of, i, 246; article on, x, 794; xiii, 850; xiv, 830; xvi, 264; xvii, 244; xviii, 271; contest with Germany, x, 795, 796; Anglo-German treaty concerning, xii, 810.  
 Zapote-wood, ix, 493.  
 Zavala, Joaquin, vi, 661.  
 Zebehr Pasha (or Sebehr), iv, 2; viii, 290, 296, 301, 302; ix, 299-301; x, 310, 313, 315, 316; xii, 244.  
 Zeiss, Mr., ix, 509 *et seq.*  
 Zelenoy, Gen., x, 5, 6, 16.  
 Zenger, theory of, viii, 25.  
 Zentmayer, Joseph, ix, 501-505, 517.  
 Zerega, Augusta, sketch, xiii, 659.  
 Zeuner, K., obit., xv, 692.  
 Zhob Valley Expedition, ix, 7; x, 395.  
 Zibepu. See Usibepu.  
 Ziegler, Franz, obit., i, 644.  
 Zillox, J., obit., xv, 672.  
 Ziemiakowski, Dr., iv, 60.  
 Zigliara, Tommaso, obit., xviii, 589.  
 Zil-es-Sultan, Prince of Persia, x, 14, 686.  
 Zimbabwe, ruins at, xvi, 23; xvii, 15.  
 Zimmermann, Apallon E., sketch, ii, 773.  
 Zimmermann, C., experiments by, viii, 117.  
 Zimmermann, Karl, obit., ii, 614.  
 Zimmermann, W., obit., iii, 663.  
 Zinc, reduction of ores, vii, 531; purification of, x, 154; mining, xii, 485; process of extracting from blende, 485; xiv, 541. See also under Metallurgy.  
 Zircon, ix, 304.  
 Zirconia, xii, 109.  
 Zither, xiv, 833.  
 Zoan (Sān), ix, 19, 600.  
 Zodiacal light, xv, 40.  
 Zöller, Hugo, x, 122, 393.  
 Zoölogy, work in, x, 304.  
 Zöpfl, Heinrich M., obit., ii, 614.  
 Zorbas, battle at, vii, 371.  
 Zorilla, José, obit., xviii, 589.  
 Zorillists, the, ix, 742.  
 Zorka, Princess, marriage of, viii, 549.  
 Zsedenyi, Eduard von, obit., iv, 702.  
 Zuecalmaglio, Vincenz von, obit., i, 644.  
 Zuckertort, J. H., sketch, xiii, 669.  
 Zulfikar, Pass of, x, 17, 18.  
 Zulla, Italian protectorate of, xiii, 5, 452.  
 Zulus, the, history of, iv, 852; war with, iii, 82; iv, 121; discussed in Parliament, v, 330; Cetewayo reinstated, viii, 91; effects of, *ibid.*; dancing, illustration, ii, 86.  
 Zululand, xiii, 125; xiv, 105; xv, 95; map of, iv, 122; division of, ix, 114; x, 136; xi, 135; annexation of, xii, 92. See also Zulus and Cape Colony.  
 Zunz, Leopold, obit., xi, 729.  
 Zuyder Zee, proposed reclamation of, vii, 280.  
 Zweifel, explorations by, v, 290; xii, 676.  
 Zwysen, J., bishop, obit., ii, 614.  
 Zymotic diseases, x, 796. See also Germ Theory of Disease.















PHILLIPS ACADEMY



3 1867 00098 9447





